

# Divining Nuclear Intentions

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A Review Essay

Jacques E.C. Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy* (New York: Cambridge University Press, 2006)

Etel Solingen, *Nuclear Logics: Alternative Paths in East Asia and the Middle East* (Princeton, N.J.: Princeton University Press, 2007)

For much of the nuclear age, academic experts, intelligence analysts, and public commentators periodically have forecast rapid bursts of proliferation, which have failed to materialize. Central to their prognoses, often imbued with the imagery and metaphors of nuclear dominoes and proliferation chains, has been the assumption that one state's nuclearization is likely to trigger decisions by other states to "go nuclear" in quick succession. Today the proliferation metaphors of choice are "nuclear cascade" and "tipping point," but the implication is the same—we are on the cusp of rapid, large-scale nuclear weapons spread. It is with some justification, therefore, that the study of proliferation has been labeled "the sky-is-still-falling profession."<sup>1</sup>

Although proliferation projections abound, few of them are founded on, or even informed by, empirical research and theory.<sup>2</sup> This deficiency, though regrettable, is understandable given the small body of theoretically or empiri-

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1. William M. Arkin, "The Sky-Is-Still-Falling Profession," *Bulletin of the Atomic Scientists*, Vol. 50, No. 2 (March/April 1994), p. 64.

2. An early, notable exception to this general tendency is Stephen M. Meyer, *The Dynamics of Nuclear Proliferation* (Chicago: University of Chicago Press, 1984). Although not primarily oriented toward forecasting, a number of unpublished dissertations on nonproliferation themes display an admirable mix of empirical research and theory. See, in particular, Tanya Ogilvie-White, "Theorizing Nuclear Weapons Proliferation: Understanding the Nuclear Politics of India, South Africa, and Ukraine," University of Southampton, 1998; James J. Walsh, "Bombs Unbuilt: Power, Ideas, and Institutions in International Politics," Massachusetts Institute of Technology, 2001; Maria Rost Rublee, "Persuasion, Social Conformity, and Identification: Constructivist Explanations for Non-Nuclear States in a Nuclear World," George Washington University, 2004; Alexander H. Montgomery, "Social Action, Rogue Reaction: U.S. Post-Cold War Nuclear Counterproliferation Strategies," Stanford University, 2005; Karthika Sasikumar, "Regimes at Work: The Nonproliferation Order and Indian Nuclear Policy," Cornell University, 2006; and Matthew H. Kroenig, "The Enemy of My Enemy Is My Customer: Why States Provide Sensitive Nuclear Assistance," University of California, Berkeley, 2007. Several recent quantitative studies also are noteworthy for their attentiveness

cally grounded research on forecasting proliferation developments, and the underdeveloped state of theory on nonproliferation and nuclear decisionmaking more generally. Also contributing to this knowledge deficit is the stunted development of social science research on foreign policy-oriented forecasting and the emphasis on post hoc explanations, rather than predictions on the part of the more sophisticated frameworks and models of nuclear decisionmaking.

Two important exceptions to this general paucity of nonproliferation theory with predictive value are recent books by Jacques Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy*, and Etel Solingen, *Nuclear Logics: Alternative Paths in East Asia and the Middle East*.<sup>3</sup> These studies merit careful attention because of their solid grounding in comparative field research and social science theory, their challenges to prevailing conceptions about the sources of nuclear weapons decisions, and their promise for predicting proliferation developments. As such, they go well beyond the influential but historically oriented explanatory frameworks developed by scholars such as Peter Lavoy, Ariel Levite, T.V. Paul, Scott Sagan, and James Walsh.<sup>4</sup> Although the approaches advanced by Hymans and Solingen have their own limitations, these two books represent the cutting edge of nonproliferation research and should be of great interest to both policy practitioners and scholars. In particular, a careful review of their studies sheds new insights into why past predictions of rapid proliferation have proved faulty, why the current alarm over impending proliferation doom is largely without merit, and why we should not count on single theories of international relations—at least in their

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to empiricism and theory in exploring proliferation determinants. See Sonali Singh and Christopher R. Way, "The Correlates of Nuclear Proliferation," *Journal of Conflict Resolution*, Vol. 48, No. 6 (December 2004), pp. 859–885; Christopher R. 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), presented at the annual meeting of the American Political Science Association, Washington, D.C., September 1–4, 2005; and Dong-Joon Jo and Erik Gartzke, "Determinants of Nuclear Weapons Proliferation," *Journal of Conflict Resolution*, Vol. 51, No. 1 (February 2007), pp. 167–194.

3. Jacques E.C. Hymans, *The Psychology of Nuclear Proliferation: Identity, Emotions, and Foreign Policy* (New York: Cambridge University Press, 2006); and Etel Solingen, *Nuclear Logics: Alternative Paths in East Asia and the Middle East* (Princeton, N.J.: Princeton University Press, 2007). Further references to these volumes appear parenthetically in the text.

4. See, for example, Peter R. Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," in Zachary S. Davis and Benjamin Frankel, eds., *The Proliferation Puzzle: Why Nuclear Weapons Spread and What Results* (London: Frank Cass, 1993), pp. 192–212; Ariel E. Levite, "Never Say Never Again: Nuclear Reversal Revisited," *International Security*, Vol. 27, No. 3 (Winter 2002/03), pp. 59–88; T.V. Paul, *Power versus Prudence: Why Nations Forgo Nuclear Weapons* (Montreal: McGill-Queen's University Press, 2000); Scott D. Sagan, "Why Do States Build Nuclear Weapons? Three Models in Search of a Bomb," *International Security*, Vol. 21, No. 3 (Winter 1996/97), pp. 54–86; and Walsh, "Bombs Unbuilt."

current state—to offer much guidance in explaining or predicting the dynamics of nuclear weapons spread.

This review essay begins with an analysis of the basic premises and overarching theses of Hymans and Solingen, and illustrates their approaches with references to several specific cases of nuclear decisionmaking. We then compare their works in terms of methodology, theoretical orientation, and insights about the process by which nuclear decisions are taken and the possibility for altering their outcomes. Special attention is given to those areas in which Hymans and Solingen depart significantly from prevailing assumptions in the international relations literature about the sources of nuclear proliferation decisions and the implications of these departures for divining nuclear weapons intentions. This discussion entails an assessment of the relative strengths and limitations of major schools of international relations theory as they pertain to nuclear renunciation and proliferation choices.

We next provide an overview and analysis of illustrative, past proliferation predictions by both government and academic analysts, and the assumptions underlying these estimates. Various reasons for past forecasting failures are identified, including a fixation on capabilities and security drivers, inattention to the domestic context in which nuclear decisions are made, disinterest in hypothesis testing or comparative analyses, and reliance on faulty analogies such as nuclear proliferation dominoes and chains. The theory-driven comparative case studies employed by Hymans and Solingen, we argue, provide a useful corrective to these traditional tendencies and help explain why one state's nuclear weapons preference is unlikely to be highly contingent on what other states decide.

Finally, we consider the policy implications of Hymans's and Solingen's work with respect to forecasting proliferation developments. In particular, we suggest how policy practitioners might exploit the authors' methods and insights to explain the sources of nuclear proliferation and improve predictions about states' nuclear ambitions.

### *The Role of Individuals and Ruling Coalitions*

Hymans and Solingen join a long list of international relations scholars who have sought to probe the “proliferation puzzle” about why some states choose to acquire nuclear weapons, why a subset of these states reverse course and abandon their pursuit, and why others never initiate the quest.<sup>5</sup> They are not

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5. As Tanya Ogilvie-White points out, the word “puzzle” has been used to connote a variety of

the first analysts to explore the discrepancy between the popular foreboding of a “nuclear-armed crowd” and the reality of an international arena largely devoid of nuclear weapons possessors.<sup>6</sup> More than most, however, they offer compelling and original explanations for the enormous gap between states’ technical potential and actual weapons acquisition, and, more important, when and where one may expect weapons pursuit and restraint.

#### OPPOSITIONAL NATIONALISTS’ LOOK INTO THE ABYSS

The more extreme position of the two authors is staked out by Hymans, for whom the real proliferation puzzle is not why there are so few nuclear weapons possessors, but why there are any at all (p. 8). Hymans finds the major international relations paradigms—realism, institutionalism, and constructivism—of limited utility in explaining the slow pace of proliferation and those rare instances of its occurrence. The answer to the puzzle, he believes, has to do primarily with the lack of motivation on the part of nearly all state leaders. Put simply, he argues, nonproliferation restraint stems less from external efforts to stop states from going nuclear, and more from “the hearts of state leaders themselves” (p. 7). Contrary to conventional wisdom, he maintains, few national political figures have either the desire or certitude to go nuclear (p. 8). According to Hymans, although the nonproliferation regime may have many virtues, the appearance of its success in containing proliferation results mainly from the fact “that few state leaders have desired the things it prohibits” (*ibid.*). A major determinant of this reticence to pursue nuclear weapons, Hymans explains, is the revolutionary nature of a decision to acquire them, which is recognized as such by all top decisionmakers. Only leaders who possess a deep-seated “national identity conception” (NIC) of a particular type will acutely perceive the need for the bomb and have the exceptional willpower to take that extraordinary step (p. 12).

Leaders who see their nations in starkly “us against them” terms are labeled “oppositional,” in contrast to those “sportsmanlike” leaders who see the world in a less dichotomous light. Leaders who regard their nations as equal or superior to the external “other” are referred to as “nationalists,” while those who

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proliferation issues, involving both causes and effects. Ogilvie-White, “Is There a Theory of Nuclear Proliferation? An Analysis of the Contemporary Debate,” *Nonproliferation Review*, Vol. 4, No. 1 (Fall 1996), p. 43. See also Davis and Frankel, *The Proliferation Puzzle*; and Walsh, “Bombs Unbuilt.” We focus on the causes.

6. The phrase was coined by Albert Wohlstetter in *Moving toward Life in a Nuclear Armed Crowd? Final Report to the U.S. Arms Control and Disarmament Agency* (Los Angeles, Calif.: Pan Heuristics, 1976).

have a lower regard for their nations' international standing are known as "subalterns." This matrix yields four ideal-type NICs: sportsmanlike nationalists, sportsmanlike subalterns, oppositional nationalists, and oppositional subalterns. The requisite NIC profile for a weapons proliferator, according to Hymans, is an "oppositional nationalist" who combines intense enmity toward an external rival and intense pride in his/her own state's ability to challenge the external foe. Oppositional nationalism, he argues, thrives on the explosive mixture of fear and pride, emotions that link national identities with foreign policy choices. It is an emotional cocktail in which fear inflates perceived threats and pride inspires confidence in the ability to achieve amazing feats if a nation exerts itself—a view reminiscent of Ali Bhutto's famous pledge that Pakistan would acquire nuclear weapons even if its people had to eat grass.

For oppositional nationalist leaders, "the decision to acquire nuclear weapons is not only a means to the end of getting them; it is also an end in itself, a matter of self-expression" (p. 13). As a consequence, Hymans posits, decisions to go nuclear are likely to be made hastily and without considerable vetting or input from others. Stripped to its essence, the book's argument is twofold, although, as we discuss below, only the first proposition is thoroughly explored: (1) only oppositional nationalists push for the bomb; and (2) oppositional nationalist leaders are rare. Three other types of leaders are expected to show varying degrees of interest in security guarantees, nuclear weapons, and nuclear technology, but not go for the bomb itself.

Unlike most analysts who probe the causes of nuclear proliferation, Hymans proposes a method to test his theory empirically. It involves the use of content analysis of leaders' major speeches to determine their NIC profiles. These profiles are then compared to nuclear decisionmaking behavior in four countries with very different geographic locations, political systems, and nuclear status. Two of those countries—France and India—opted for the bomb, whereas Argentina and Australia decided against it.

Australia is an interesting test case for Hymans's theory as it periodically contemplated the idea of an independent nuclear deterrent but ultimately chose not to pursue one. Both the degree of interest in nuclear weapons and the decision to renounce a nuclear option, Hymans postulates, were largely unrelated to changes in the perceived external security environment or the state of the international nonproliferation regime. Rather, he argues, Australia's nuclear posture must be understood in terms of the NICs of different prime ministers. Consistent with this thesis, he finds that the only time Australia actively sought to acquire an independent nuclear capability was

when it was led by John Gorton (1968–71), the one Australian prime minister between 1949 and 1975 to fit the oppositional nationalist NIC profile. According to Hymans, Gorton believed that Australia was both entitled to and capable of developing a nuclear deterrent. He therefore insisted that Australia remain outside the Nuclear Nonproliferation Treaty (NPT) while seeking to develop indigenous uranium enrichment and plutonium reprocessing capabilities (pp. 126–129).

Significantly, Gorton's nuclear orientation was not based on the perception of a more hostile international security environment than those of his predecessors. Indeed, if anything, Prime Minister Robert Menzies (1949–66) viewed the world in more threatening terms, especially following the Chinese nuclear test in 1964. Unlike Gorton, however, Menzies' NIC profile was that of an oppositional subaltern who was far more inclined to seek protection through assurances from "great and powerful friends" in the West than through an independent nuclear deterrent (pp. 115–117).

According to Hymans, Gorton's efforts to launch a nuclear weapons program ultimately were stymied by his shaky hold on power and bureaucratic opposition from the Atomic Energy Commission (pp. 130–133). When Gorton's government fell and he was replaced by Gough Whitlam—a sportsmanlike subaltern—Australia predictably (from Hymans's perspective) soon adopted a new nuclear posture, renounced nuclear weapons, and ratified the NPT.

"IT'S THE ECONOMY, STUPID": THE POLITICS OF REGIME SURVIVAL

Solingen, like Hymans, challenges conventional wisdom about why states acquire or renounce nuclear weapons. In nine in-depth case studies, she discerns that nuclear weapons programs are driven more by concerns about regime survival than by state insecurity. Although she also focuses on subnational dynamics to understand the nuclear outcomes, the crucial explanatory variable for her is the domestic political survival model preferred by the ruling coalition. Solingen distinguishes between outward-looking regimes that derive domestic legitimacy from ensuring economic growth through global integration and inward-oriented ones that employ import-substituting models favoring extreme nationalism and autarky. Different orientations toward the global political economy and its associated economic, political, and security institutions, she argues, have direct implications for the nuclear choices that are taken.<sup>7</sup>

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7. The thesis in *Nuclear Logics* is an extension and refinement of the argument advanced in Solingen, "The Political Economy of Nuclear Restraint," *International Security*, Vol. 19, No. 2 (Fall 1994), pp. 126–169.

On the one hand, for example, nuclear weapons programs are seen as less likely to emerge when the domestic political landscape is sympathetic to economic openness, trade liberalization, foreign investment, and international economic integration. Alternatively, dominant political coalitions dependent on inward-looking bases of support and hostility to integration into the global political economy are more likely to pursue nuclear weapons programs. Two important implications follow from this thesis: (1) policies toward nuclear weapons acquisition or forbearance within states may be relatively immune to changes in the external security environment; and (2) nuclear policies within states may vary significantly over time as domestic economic and political conditions change even when the external security landscape remains relatively constant.

To test her model, Solingen conducts a series of comparative case studies across two regions that have taken divergent nuclear paths.<sup>8</sup> Her analyses, unlike those of Hymans, do not employ quantitative measures of any variables, but are structured in nature and comparative in orientation. They also are remarkable for the systematic manner in which they provide an assessment of each country's nuclear choices in terms of alternative "nuclear logics": neorealism, neoliberal institutionalism, constructivism, democratic peace, and domestic politics.

Perhaps the most startling findings pertain to Japan, whose nuclear renunciation decision Solingen carefully analyzes through the prisms of competing paradigms. Contrary to conventional wisdom, she challenges the notion that Japan's nuclear restraint can be explained primarily in terms of the U.S. nuclear umbrella or due to a persistent "nuclear allergy." She also finds that NPT considerations played a marginal role in Japan's decision to remain nonnuclear. Far more important than security and regime factors, Solingen argues, were domestic political considerations related to Japan's place in the global political economy.

According to Solingen, a major problem with security/structural power-based explanations of Japan's nuclear posture is their indeterminate nature. In other words, the same factors can be cited to explain Japan's pursuit and renunciation of nuclear weapons (p. 63). In fact, her study finds neither evidence of significant U.S. coercion of Japan to remain nonnuclear nor a strong demand on the part of the Japanese public for nuclear weapons.

Solingen's analysis also finds the absence of a close correspondence between

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8. Solingen's case studies are Egypt, Iran, Iraq, Israel, Japan, Libya, North Korea, South Korea, and Taiwan.

the ebb and flow of a “nuclear taboo” among the Japanese populace and the nonproliferation policies pursued by Tokyo over time. What was decisive in determining Japan’s nonnuclear status, she argues, was the adoption of the “Yoshida model” of development that required “a strong economic infrastructure, manufacturing capabilities . . . and swimming with (not against) the great tide of market forces” (p. 70). From this perspective, Japan’s Liberal Democratic Party’s hold on power was contingent on securing Japan’s place in the global economy, an objective incompatible with the pursuit of nuclear weapons. As such, the decision to renounce nuclear weapons preceded the negotiation of the NPT.

### *The Two Models: Exploring Differences and Similarities*

The books by Hymans and Solingen share a number of important features, including rejection of conventional wisdom regarding the sources of nuclear proliferation and a common focus on subsystemic determinants of state nuclear weapons policies. They also display a combination of theoretical sophistication, methodological rigor, focused comparative analysis involving original field research, and attention to hypothesis testing rarely found in the nonproliferation literature.<sup>9</sup> In addition, both books are distinguished by their authors’ efforts to explore the policy implications of their findings, some of which converge rather closely, including skepticism about the impact of the NPT in stemming nuclear weapons spread. Despite these significant similarities, the books diverge in important respects. These pertain to the precise research questions under review, the methodology and level of analysis employed, the time frame under study, the generalizability of the findings, the authors’ comfort level with multicausality, and their optimism with respect to the future pace and scope of proliferation.

Both Hymans and Solingen address the general question of why nations decide to proliferate or exercise proliferation restraint. A careful reading of their books, however, suggests a significant difference in focus regarding the principal outcome variable under consideration. For Hymans, the primary focus is both precise and narrow—it is the leader’s “yes-no” decision to go nuclear. What, he seeks to determine, drives some state leaders to desire the bomb and launch a nuclear weapons program? Although Hymans sometimes departs from this fixation on an individual decision to explore the broader issue of

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9. The only comparable work on the same theme is the Ph.D. dissertation by James J. Walsh, “Bombs Unbuilt,” which unfortunately has never been published and is not widely cited.

why states obtain nuclear weapons, the state's capacity to move from the leader's decision to initiate a weapons program to its implementation and conclusion is a secondary consideration (pp. 44–46).

In contrast, the nuclear puzzle for Solingen is one of process and product. She is less precise than Hymans in specifying the primary dependent (outcome) variable, but it is apparent from her introduction and subsequent analysis that she is interested in understanding both why some states proliferate yet others do not, and how the preferences of political elites are translated into national policy. Her usage of the terms "nuclearization" to connote movement toward nuclear weapons acquisition and "denuclearization" to mean nuclear weapons renunciation, however, is not always consistent and, on occasion, can be confusing (p. 301). For example, when she speaks of the evolution of the Middle East "toward nuclearization," it implies a degree of nuclear weapons acquisition that does not correspond to reality (p. 27). Similarly, a discussion of the role of security guarantees in nuclear renunciation decisions is not advanced by lumping together as "denuclearized" such states as Egypt (which once sought nuclear weapons), South Africa (which once assembled nuclear weapons), Argentina (which, at a minimum, had acquired many of the requisites for a nuclear weapons program), and Jordan (whose nuclear program consists of uranium ore reserves) (p. 27). More generally, one may question the utility of her terminology for distinguishing between a country's latent nuclear weapons capability and its intentions.

#### THE NATURE OF NUCLEAR DECISIONS

In addition to asking somewhat different research questions, Hymans and Solingen also provide different answers to a common question: What is the nature of the decision to acquire nuclear weapons? To some extent, the divergence of views is a function of the alternative levels of analysis they employ: a focus by Hymans on individual leaders and by Solingen on political coalitions. More significant, however, is the differential importance they attribute to emotion and rationality. For Hymans, the choice of nuclear weapons is a revolutionary decision that is beyond "a reasonable cost-benefit calculation" (p. 10). Defined by the NIC in the leader's mind and driven by intense emotions of pride and fear, the decision is made in haste and without careful consideration of consequences. Hymans suggests, however, that less revolutionary nuclear decisions are more prone to cost-benefit analysis and less susceptible to the influence of emotion. These include decisions involving the pursuit of nuclear technology, membership in the NPT, and acquisition of security assurances. An important policy implication of the distinction Hymans draws between the

sources of nuclear weapons decisions and those of ancillary programs is that a state's pursuit of sensitive fuel-cycle technology and nuclear "hedging" may not correspond to intent to acquire nuclear weapons.

In marked contrast to Hymans's emphasis on nonrational considerations for the "big" nuclear decision, Solingen argues that the decision to pursue nuclear weapons is in almost all instances the result of a careful, rational calculation that reflects the domestic survival interests of the ruling coalition.<sup>10</sup> In its emphasis on rational choice, Solingen's decisionmaking model resembles that of neoliberal institutionalism, except that for her the choice is for the benefit of the domestic regime rather than the state. It also is not dependent on the existence of an international nonproliferation regime. We offer a more in-depth discussion of how Solingen's and Hymans's models compare to neoliberal institutionalism and other leading paradigms in the next section.

The two authors also differ in their views of the stability or durability of choice regarding nuclear weapons. In Hymans's individual leader-centric world, which is not limited to a particular time period, the desire for the bomb is deeply entrenched in the identity conception of the leader and, as such, is unlikely to undergo change. In this respect, Muammar Qaddafi's readiness to reverse course and abandon the Libyan nuclear weapons program he previously had initiated would appear to constitute an interesting challenge to Hymans's thesis, but it is not addressed. Although Hymans acknowledges that the leader's decision may founder in the implementation phase, he argues that even though "it may be hard to make a nuclear decision, . . . once that decision has been made, for both institutional and psychological reasons it is also hard—though not impossible—to unmake it" (p. 45).

The situation is more dynamic in Solingen's model, in which nuclear decisions are based on ongoing cost-benefit calculations by the ruling coalition. Her model, which she suggests may not be applicable to nuclear decisions in pre-NPT "world time," implies the lack of "linear or irreversible trajectories . . . in either direction" (p. 285).<sup>11</sup> In other words, nuclear decisions may be reversed if circumstances change and cost-benefit considerations determine that the pursuit (or disavowal) of nuclear weapons no longer serves the ruling coalition's interests. Although not insensitive to the force of institutional con-

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10. A possible exception to this rule, which is not explained in detail, is a situation in which the state (as opposed to the regime) faces an extreme threat to its survival.

11. In her book Solingen is careful to delimit the time frame under consideration to the post-1968 period. She discusses the concept of "world time" in "Nuclear Logics: Why Some Do and Others Don't (Proliferate): Implications for Proliferation Chains," paper presented at the Workshop on Forecasting Proliferation Developments, Washington, D.C., September 27, 2007.

straints on nuclear choice, Solingen's dynamic model highlights the potential for policy change even in a country such as Japan, often regarded as the bedrock of nuclear abstinence. An important factor bearing on the stability of policy, she suggests, is the regional environment—a dimension less central to Hymans's paradigm. A change in the predominance of a particular political-economic model in a region, Solingen argues, can influence the nuclear choices of other ruling coalitions in the same geographical area, a topic we return to in the section dealing with proliferation forecasting.

One of the great virtues of Hymans's writing is an approach that leaves little to the imagination. Where many authors might hedge their argument or hesitate to follow it to its logical conclusion, he unabashedly pushes it as far as possible. This tendency often serves him well, but on occasion leads him to discount the influence of plausible alternative explanations. Thus, although effective in challenging the explanatory power of unitary state actor models and those that focus exclusively on security drivers or status considerations, Hymans's preferred model would be bolstered if it allowed for and better explained the impact of the surrounding security and political environment on the emergence of oppositional nationalists.

Solingen tends to be more circumspect than Hymans in touting the departure of her theory from prior paradigms. She also is more comfortable with multicausal and multilevel explanations for nuclear decisions in which her approach provides another piece of a multidimensional puzzle. Indeed, a key contribution of her work is its success in bridging the gap between comparative politics' and international relations' treatments of nuclear proliferation.<sup>12</sup> As she candidly acknowledges, models of political survival are only ideal types and should be thought of as heuristic devices to better understand complex reality. As such, they offer a key to unlocking a country's nuclear logic, but are unlikely to fit precisely in all cases.<sup>13</sup> This caution in overestimating the effects of any single causal variable is admirable and facilitates her incorporation of insights from alternative theories as she probes past nuclear choices. The greater complexity of her model, however, also provides a major challenge in its application for predictive purposes.

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12. We are grateful to Scott Sagan for highlighting this contribution. Sagan, personal correspondence with authors, October 8, 2007.

13. Solingen elaborated on this point in a short paper about her book's approach in which she writes, "Balance of power, norms, and institutions may be more relevant than political survival in some cases than in others." See Solingen, "Nuclear Logics: Why Some Do and Others Don't (Proliferate)," p. 7.

NEW INSIGHTS ON THE USUAL SUSPECTS

In addition to making an important contribution to the development of non-proliferation theory, the empirically grounded books by Hymans and Solingen provide many new and useful insights into specific cases of nuclear decision-making. Hymans's seamless mix of quantitative and qualitative analysis and his familiarity with primary sources in each of his four country studies enables him to convincingly advance a number of provocative arguments. In the French case study, he offers new evidence to challenge the view that decisions leading to the bomb were incremental, taken by a small number of secondary government officials under the principal administration of the Commissariat à l'Énergie Atomique.<sup>14</sup> His focus on the oppositional nationalist NICs of John Gorton and Atal Bihari Vajpayee and their determined pursuit of nuclear weapons for Australia and India also nicely supplements and modifies the pioneering work on the nuclear choices of the "land down under" and the "smiling Buddha" previously undertaken by James Walsh and George Perkovich, respectively.<sup>15</sup>

Hymans's treatment of Indian decisionmaking is provocative and centers to a large extent on the nature of India's 1974 "peaceful nuclear explosion" (PNE) and its near test of 1995. Hymans argues that although India possessed the capability to go nuclear for decades, it took the decision of Vajpayee, an oppositional nationalist leader, to finally cross that threshold. The 1974 PNE, Hymans maintains, was exactly that—a peaceful demonstration by the sportsmanlike nationalist Indira Gandhi that India could master the most complex technology but did not want nuclear weapons (pp. 183–188). Even if one accepts that problematic interpretation, one is hard pressed to employ Hymans's theory to account for the readiness of the Congress Party, led by a sportsmanlike nationalist, to conduct a nuclear test in 1995. According to a number of leading analysts, Prime Minister Narasimha Rao decided to abandon the planned test after the United States became aware of it and informed him that economic sanctions would have to be imposed on India in accordance with U.S. legislation—a decision process more closely in line with Solingen's thesis.<sup>16</sup> Hymans acknowledges the challenge to his theory posed by the 1995

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14. This view is most closely associated with Lawrence Scheinman, *Atomic Energy Policy in France under the Fourth Republic* (Princeton, N.J.: Princeton University Press, 1965).

15. See Walsh, "Bombs Unbuilt"; Jim Walsh, "Surprise Down Under: The Secret History of Australia's Nuclear Ambitions," *Nonproliferation Review*, Vol. 5, No. 1 (Fall 1997), pp. 1–20; and George Perkovich, *India's Nuclear Bomb: The Impact on Global Proliferation* (Berkeley: University of California Press, 1999).

16. Perkovich, *India's Nuclear Bomb*, p. 370; Šumit Ganguly, "India's Pathway to Pokhran II: The Prospects and Sources of New Delhi's Nuclear Weapons Program," *International Security*, Vol. 23,

case, but contends that Prime Minister Rao decided against going nuclear before the United States found out about such plans (pp. 193–195). Finally, Hymans completely discounts the role of prominent nuclear scientists who consistently tried to pressure Rao and the subsequent United Front government into conducting the test.<sup>17</sup>

Hymans's most original and controversial interpretation, and the one with the greatest potential policy implications, concerns Argentina. Rejecting conventional wisdom about a failed but dedicated quest by Argentina to acquire nuclear weapons, he presents evidence that Argentina's behavior—though at times consistent with the pursuit of nuclear weapons—in fact was never motivated by nuclear weapons ambitions. In addition, he suggests that the more the United States pushed Argentina to adopt explicit nonproliferation commitments, the more Argentina pushed back, even embracing economically irrational policies, but ones not driven by nuclear weapons ambitions (pp. 141–170). If correct, and we are not in a position to evaluate all of his evidence, Hymans may have proved the danger of automatically attributing nuclear weapons intentions to states that eschew the NPT, embark on economically dubious nuclear energy projects that have dual civilian-military applications, and strongly resist international efforts by nuclear weapons states to modify their behavior.

As noted earlier, Solingen bases her thesis on the comparison of different nuclear paths taken by two regions traditionally on the list of prime proliferation suspects. Although all of her nine case studies are of high quality, they do not always devote adequate attention to alternative “nuclear logics,” and, on occasion, the evidence that is presented appears at odds with the conclusions that are drawn. Solingen's case study of Israel is most bothersome in this regard and does not represent a convincing illustration of the power of the domestic political survival model. For example, her detailed account of the bureaucratic battles and changes among the ruling Israeli parties does not persuasively demonstrate the linkage between these actors' preferred economic models and their stance regarding nuclear weapons. In fact, the evidence Solingen presents tends to support both a neorealist argument that nuclear weapons were pursued for security reasons and the institutionalist argument that it was not in Israel's rational interest to join an international treaty that

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No. 4 (Spring 1999), p. 168; and Neil Joeck, personal communication with authors, February 15, 2008. Perkovich makes a less definitive conclusion about Rao's rationale, writing that while the prime minister “was willing in principal to authorize tests, he had not made up his mind that they were in India's interest.” Perkovich, *India's Nuclear Bomb*, p. 370.

17. See Perkovich, *India's Nuclear Bomb*, pp. 353–377.

could not significantly ease its legitimate concerns about threats from regional adversaries.<sup>18</sup>

One may also question if Solingen's exceptionally fine examination of Japan's nuclear decisionmaking is as supportive of her preferred domestic politics model as she purports. Although her chapter on Japan is the strongest in the book in terms of thoroughly applying alternative approaches to divine nuclear intentions, it is not necessarily the best example of the power of her domestic survival thesis. As she herself observes, Japan's nuclear restraint was overdetermined by a variety of factors and can be, at least in part, explained by each of the leading theories (p. 80).

### *International Relations Theory and the Sources of Nuclear Proliferation*

Having discussed the arguments and cases presented by Hymans and Solingen, we now examine more closely how their premises regarding nuclear predilections build on and depart from those of leading international relations theories. Here, we are mainly interested in contrasting their relative explanatory and predictive powers with the approaches favored by Hymans and Solingen.<sup>19</sup> For purposes of this comparative assessment, we focus primarily on theories often referred to as neorealism, neoliberal institutionalism, and constructivism.<sup>20</sup>

One of the major problems in distilling useful, future-oriented information from the enormous body of literature on nuclear proliferation that has been produced during the past half century is the extent to which it is largely speculative and contradictory in its insights. Contributing to this Rashomon effect is a lack of agreement about what constitutes nuclear proliferation, the appropriate level of analysis for study, the importance to be attached to a multitude of

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18. Solingen, *Nuclear Logics*, p. 194, makes the argument that Israel had reason to doubt the impartiality of the International Atomic Energy Agency and to mistrust international institutions dominated by states opposed to it.

19. Important prior critiques include Ogilvie-White, "Is There a Theory of Nuclear Proliferation?"; Sagan, "Why Do States Build Nuclear Weapons?"; and Jacques E.C. Hymans, "Theories of Nuclear Proliferation: The State of the Field," *Nonproliferation Review*, Vol. 13, No. 3 (November 2006), pp. 455–465. Solingen's book under review also provides a thorough critique of many international relations theories.

20. Although one could legitimately identify a larger set of influential paradigms, including many variations of neorealism, their inclusion in the comparative assessment would not significantly alter our conclusions. We have not sought to include a number of important conceptual frameworks such as those advanced by Sagan and Lavoy, which in some respects more closely resemble the orientation of Hymans and Solingen but lack predictive power.

plausible proliferation determinants, and how best to penetrate the veil of secrecy surrounding nuclear decisions.<sup>21</sup>

#### NEOREALISM

Much of the thinking about nuclear proliferation has been informed by realist perspectives, which assume that states are unitary actors that seek nuclear weapons because their security—precarious in an anarchic world—demands it. From a classical realist perspective, the quest for nuclear weapons is a rational form of self-help designed to maximize power.<sup>22</sup> Neorealism embraces the same basic assumptions as classical realism, but it is more attentive to the impact of structural differences in the international system on the occurrence of war and peace.<sup>23</sup> Applied to the proliferation arena, neorealism offers an elegant and simple explanation for why and when nations would go nuclear. In its view, regime type, domestic politics, and personalities are of no consequence, and all that really matters is an understanding of the balancing dynamic in which one state's pursuit of nuclear weapons begets another.<sup>24</sup> Employing this logic, John Mearsheimer, Stephen Van Evera, and Benjamin Frankel, among others, thought it likely that the decline of bipolarity after the end of the Cold War would generate a new spate of proliferators, including countries such as Germany, Japan, and Ukraine.<sup>25</sup> Taken to its logical conclusion, unadulterated neorealism predicts a lengthy nuclear proliferation chain that extends to as many states as have access to technical know-how and material to build nuclear weapons.

One is hard pressed to find commonalities in the assumptions underlying

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21. For a review of the early literature on proliferation determinants, see William C. Potter, *Nuclear Power and Nonproliferation: An Interdisciplinary Perspective* (Cambridge, Mass.: Oelgeschlager, Gunn, and Hain, 1982), pp. 131–196.

22. Elegant in its simplicity, classical realism affords a powerful means to circumvent the problem of nuclear secrecy and the need to collect difficult-to-obtain data through in-country research. For its most influential exponent, see Hans J. Morgenthau, *Politics among Nations: The Struggle for Power and Peace* (New York: Alfred A. Knopf, 1948).

23. The seminal work in neorealism is by Kenneth N. Waltz, *Theory of International Politics* (New York: Random House, 1979).

24. In his penetrating critique of neorealist models, Sagan depicts the alleged process as follows: "Every time one state develops nuclear weapons to balance against its main rival, it also creates a nuclear threat to another state in the region, which then has to initiate its own nuclear weapons program to maintain its national security." Sagan, "Why Do States Build Nuclear Weapons?" p. 58.

25. See, for example, John J. Mearsheimer, "Back to the Future: Instability in Europe after the Cold War," *International Security*, Vol. 15, No. 1 (Summer 1990), pp. 5–56; John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs*, Vol. 72, No. 3 (Summer 1993), pp. 50–66; Stephen Van Evera, "Primed for Peace: Europe after the Cold War," *International Security*, Vol. 15, No. 3 (Winter 1990/91), pp. 7–57; and Benjamin Frankel, "The Brooding Shadow: Systemic Incentives and Nuclear Weapons Proliferation," in Davis and Frankel, *The Proliferation Puzzle*, pp. 37–78.

neorealism (or any variant of realism) and those advanced by Hymans.<sup>26</sup> Although he probably appreciates the clarity and parsimony of realist theory, which in some ways resembles his own razor-sharp and unambiguous formulations, Hymans rejects out of hand the realist fixation on systemic explanations of nuclear weapons behavior. His research on the nuclear policies of Argentina, Australia, France, and India finds that structural analyses favored by neorealists are unable to explain why, when, and how these four countries adopted their nuclear postures. In stark contrast to neorealist assumptions about the inconsequential nature of subsystemic factors in divining state nuclear behavior, for Hymans, one cannot begin to explain or anticipate proliferation outcomes without reference to national leaders and the correct identification of their national identity conceptions. Hymans acknowledges that three of the leaders in the four countries under review in his book—Pierre Mendès-France of France, John Gorton of Australia, and Atal Bihari Vajpayee of India—did regard nuclear weapons as useful for purposes of deterrence. He rejects the thesis, however, that nations are predisposed to pursue nuclear weapons for that purpose given that his case studies yield a variety of national leaders who rejected this outlook despite facing similar external threats.

Solingen also is skeptical of the explanatory and predictive power of neorealism. Like Hymans, she identifies numerous occasions in which neorealist premises fail to account for nuclear behavior. Looking at nine East Asian and Middle Eastern countries, Solingen finds too many “dogs that didn’t bark”—or states that faced acute security vulnerabilities but refrained from acquiring nuclear weapons. These include Egypt, Japan, South Korea, and Taiwan. Moreover, even if one invokes the role of alliances to explain these anomalies, as do some offshoots of realism, she finds little empirical support for the premise.<sup>27</sup> “U.S. and Soviet commitments to client states (North Korea, Iraq, Israel, and Pakistan) did not lead these states to renounce nuclear weapons,” she observes (p. 25).<sup>28</sup> “Nor did the absence of security guarantees play any role in the decisions by Egypt (1971), Libya, South Africa, Argentina, or Brazil to reverse nuclear ambitions” (p. 25). In addition, Solingen finds neorealism to be conceptually deficient in both its underspecification of key variables such as

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26. One possible exception is the focus of neoclassical realism on state capacity and a similar emphasis by Hymans on state structure and managerial capacity in his more recent unpublished work.

27. T.V. Paul, an exponent of “prudential realism,” argues that superpower security guarantees are the key explanation for why typical realist forecasts of proliferation failed to materialize.

28. Her inclusion of Israel in this category is questionable, as Israel did not possess security guarantees from the United States or any other nuclear weapons state when it decided to pursue an independent nuclear weapons program.

balancing, which impedes hypothesis testing, and its overestimation of the influence of state security on nuclear decisions to the neglect of regime security—the centerpiece of her preferred model of domestic political survival.<sup>29</sup>

#### NEOLIBERAL INSTITUTIONALISM

Neoliberal institutionalism—an alternative paradigm to neorealism—shares many basic neorealist assumptions about the pursuit by state actors of rational self-interest in an anarchic international system. Neoliberal institutionalists, however, ascribe a much greater role to economics and are far more optimistic about the possibilities for mitigating security dilemmas and accomplishing long-term cooperation among states.<sup>30</sup> The key to achieving cooperative outcomes, they argue, is the creation of international institutions that facilitate information sharing about others' capabilities and intentions, mediate conflict, and monitor (and on occasion even enforce) regime compliance.<sup>31</sup> By extension, a neoliberal institutionalist might be expected to argue that countries join nonproliferation institutions to address immediate and projected security concerns or to derive economic benefits such as access to peaceful nuclear energy. Although intuitively plausible, in practice, this proposition tends to be more implied than rigorously tested, and relatively few studies have sought to demonstrate the influence of nonproliferation institutions on nuclear weapons restraint.<sup>32</sup>

29. Neoclassical realism seeks to compensate for this shortcoming by employing both systemic-level and national (unit)-level analysis. For neoclassical realists, state actions are defined not only by the structure of the international system and the state's relative position in it, but also by its capacity to extract resources and support from within the state—so-called state power. Although neoclassical realism has yet to be applied to nonproliferation, the approach has the potential to help explain different nuclear outcomes in countries facing similar security threats. Natasha Bajema is conducting dissertation research on the subject at the Fletcher School of Law and Diplomacy at Tufts University. For a useful introduction to neoclassical realism, see Gideon Rose, "Neoclassical Realism and Theories of Foreign Policy," *World Politics*, Vol. 51, No. 1 (October 1998), pp. 144–172. A more recent treatment is provided by Jeffrey W. Taliaferro, "State Building for Future Wars: Neoclassical Realism and the Resource-Extractive State," *Security Studies*, Vol. 15, No. 3 (July–September 2006), pp. 464–495.

30. Robert O. Keohane, *After Hegemony: Cooperation and Discord in the World Political Economy* (Princeton, N.J.: Princeton University Press, 1984); and Robert Axelrod and Robert O. Keohane, "Achieving Cooperation under Anarchy: Strategies and Institutions," *World Politics*, Vol. 38, No. 1 (October 1985), pp. 226–254.

31. See, for example, Peter Alexis Gourevitch, "The Governance Problem in International Relations," in David A. Lake and Robert Powell, eds., *Strategic Choice and International Relations* (Princeton, N.J.: Princeton University Press, 1999), pp. 137–164; and John Gerard Ruggie, *Constructing the World Polity: Essays on International Institutionalization* (New York: Routledge, 1998).

32. Some support for the thesis is provided by Mitchell Reiss, who is not a self-described neoliberal institutionalist. See, for example, Reiss, *Without the Bomb: The Politics of Nuclear*

Hymans is not altogether unsympathetic to the argument made most forcefully by institutionalists that the nonproliferation regime has played a useful role in dampening proliferation tendencies. He is skeptical, however, of the assumption that the regime has caused states that otherwise would have acquired nuclear weapons to abandon their pursuit. Among the counterarguments he mounts is that were the regime to have played this significant role, one might have expected rampant proliferation prior to its emergence in the mid-1970s as a widely subscribed to international treaty. In fact, though, there was a large gap at this time between states that were capable of going nuclear and those that actually did so.<sup>33</sup>

In addition, Hymans believes that if the regime performed the key role attributed to it by neoliberal institutionalism, it should have created far more stable and durable expectations among states than he regards to be the case. Instead, as he points out, fears about the regime's stability and survival have been common throughout its existence, which undermines the argument that states refrained from going nuclear because of their reliance on the NPT and other states' compliance.<sup>34</sup> In this regard, Hymans appears to confuse the popular perspective of "the sky-is-falling" pundits with a minority view among NPT members that the nonproliferation regime is about to collapse.

Solingen's critique of neoliberal institutionalism parallels that of Hymans. Thus, although crediting the paradigm for focusing attention on the nonproliferation regime as a potentially powerful force for nuclear restraint, she remains unconvinced that it actually has played a more significant role in shaping states' nuclear decisions than have considerations of security, norms, or domestic politics. In most cases, she finds that decisions 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, the NPT did not prevent Iran, Iraq, Libya, and North Korea from pursuing nuclear weapons subsequent to their membership in the

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*Nonproliferation* (New York: Columbia University Press, 1988); and Reiss, *Bridled Ambition: Why Countries Constrain Their Nuclear Capabilities* (Washington, D.C.: Woodrow Wilson Center Press, 1995). See also William C. Potter, "The Politics of Nuclear Renunciation: The Cases of Belarus, Kazakhstan, and Ukraine," Occasional Paper, No. 22 (Washington, D.C.: Henry L. Stimson Center, April 1995).

33. Hymans does not comment on why, according to his own chart (p. 4), the gap between nuclear-capable and nuclear-armed states increased sharply during the 1965–70 period, precisely when the NPT was negotiated, signed, and entered into force.

34. Questions about the NPT's survivability, for example, were raised as early as in the 1970s, both before and after the first NPT review conference. A particularly insightful analysis of the challenges facing the NPT during its first decade is provided by William Epstein, *The Last Chance: Nuclear Proliferation and Arms Control* (New York: Free Press, 1976), pp. 244–258.

nonproliferation regime. Among the nine countries she examines, only the nuclear behavior of Egypt and Israel (an NPT outlier) corresponds to institutionalist expectations, and even these states' nuclear choices, she contends, cannot be adequately explained without reference to domestic politics.

#### CONSTRUCTIVISM

Constructivist theory, which emphasizes the evolution and impact of international norms on state behavior, represents a further progression away from realist assumptions. Although accepting the existence of anarchy and the pivotal role of states in the international system, constructivists view anarchy in cultural rather than materialist terms. As its most influential exponent explains, "Anarchy is what states make of it."<sup>35</sup> As such, even "power politics" can be tempered by human practice.<sup>36</sup> Under appropriate conditions, adherents to constructivism maintain, institutions and norms may evolve that are hospitable to the emergence of normative prohibitions against nuclear weapons possession and use.<sup>37</sup> According to this perspective, for example, the international nonproliferation regime has its roots in the antinuclear sentiment that developed following the bombings of Hiroshima and Nagasaki.<sup>38</sup> Some constructivists also attach considerable importance to the role of subnational factors in shaping the institutionalization of the nuclear taboo, including the role of organizational actors and individual leaders, or "norm entrepreneurs."<sup>39</sup> By directing attention to considerations of social reality other than those of a purely materialistic nature, constructivists expand the range of explanations for nuclear weapons abstinence. Most important, they demonstrate the potential impact of the international social environment in depressing demand for nuclear weapons.<sup>40</sup> Typically, however, they provide little guidance about when and where to expect normative factors to prevail.

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35. Alexander Wendt, "Anarchy Is What States Make of It: The Social Construction of Power Politics," *International Organization*, Vol. 46, No. 2 (Spring 1992), pp. 391–425; and Alexander Wendt, *Social Theory of International Politics* (Cambridge: Cambridge University Press, 1999).

36. Martha Finnemore and Kathryn Sikkink, "International Norm Dynamics and Political Change," *International Organization*, Vol. 52, No. 4 (Autumn 1998), pp. 887–917; Peter J. Katzenstein, ed., *The Culture of National Security: Norms and Identity in World Politics* (New York: Columbia University Press, 1996); and John Gerard Ruggie, "What Makes the World Hang Together? Neo-utilitarianism and the Social Constructivist Challenge," *International Organization*, Vol. 52, No. 4 (Autumn 1998), pp. 855–885.

37. See Katzenstein, *The Culture of National Security*.

38. Nina Tannenwald, "Stigmatizing the Bomb: Origins of the Nuclear Taboo," *International Security*, Vol. 29, No. 4 (Spring 2005), pp. 5–49.

39. *Ibid.*, pp. 29–30; and Finnemore and Sikkink, "International Norm Dynamics and Political Change."

40. Rublee, "Persuasion, Social Conformity, and Identification."

Hymans does not devote much attention in his book to a direct refutation of constructivist precepts. This reticence is understandable, as his own theoretical focus on the causal power of ideas (including identities, perceptions, and emotions) is very much in the constructivist tradition, as is his concentration on the demand side for the bomb. Unlike most constructivist studies, however, Hymans's approach stresses neither the dampening effect on proliferation tendencies of broad trends in international norms nor the corresponding constraints that may follow from societal pressures. Rather, his is an individual-level approach that derives both its explanatory and predictive power by focusing attention on "deviant" oppositional nationalist leaders whose combination of fear and pride propel them down the nuclear weapons path. Those who wanted the bomb, such as Australia's Gorton and India's Vajpayee, he argues, "would not let nonproliferation norms stand in the way of their objective" (p. 215).

Although Solingen is respectful of the constructivist insight that institutions such as the NPT both reflect and influence the collective identities of its members, thereby altering member beliefs regarding the desirability of nuclear weapons, she finds little concrete evidence in her case studies that antinuclear weapons acquisition norms significantly influenced key nuclear renunciation or proliferation decisions. As discussed earlier, Solingen's conclusion is most striking with respect to Japan. Although acknowledging the presence of institutional and normative restraints, she is more impressed by Japan's "pragmatic pacifism."<sup>41</sup> She sees similar pragmatic rather than normative considerations at work in the nuclear forbearance displayed by South Korea and Taiwan, and finds little evidence that nonproliferation norms have taken root in any of the countries she reviews from the Middle East.

Solingen regards constructivist analysis of nuclear proliferation to be deficient in systematically examining how, why, and to what extent norms condemning nuclear weapons development have diffused internationally, and in accounting for the parallel emergence of competing norms that value nuclear weapons. Nevertheless, she believes that constructivist approaches, if applied with more methodological rigor, could help sort out the relative influence on states' nuclear behavior of socialization effects and those resulting from hegemonic coercion and rational nuclear learning (pp. 270–271).

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41. Solingen, *Nuclear Logics*, p. 268, quotes Mike Mochizuki, "Japan's Drift Away from Pacific Policy," *Los Angeles Times*, September 22, 2006, on how "Japan's pacifism has always been pragmatic."

## PREDICTING PROLIFERATION: BACK TO THE FUTURE

Today it is hard to find an analyst or commentator on nuclear proliferation who is not pessimistic about the future. It is nearly as difficult to find one who predicts the future without reference to metaphors such as proliferation chains, cascades, dominoes, waves, avalanches, and tipping points.<sup>42</sup> The lead author of this essay also has been guilty of the same tendency, and initially named an ongoing research project on forecasting proliferation he directs “21st Century Nuclear Proliferation Chains and Trigger Events.” As both authors proceeded with research on the project, however, and particularly after reading the books by Hymans and Solingen, we became convinced that the metaphor is inappropriate and misleading, as it implies a process of nuclear decisionmaking and a pace of nuclear weapons spread that are unlikely to transpire.

The current alarm about life in a nuclear-armed crowd has many historical antecedents and can be found in classified National Intelligence Estimates (NIEs) as well as in scholarly analyses. The 1957 NIE, for example, identified a list of ten leading nuclear weapons candidates, including Canada, Japan, and Sweden.<sup>43</sup> Sweden, it predicted, was “likely to produce its first weapons in about 1961,” while it was estimated that Japan would “probably seek to develop weapons production programs within the next decade.”<sup>44</sup> In one of the

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42. For works that speak of chains or chain-style dynamics, see, for example, Graham Allison, “A Cascade of Nuclear Proliferation,” *International Herald Tribune*, December 17, 2004; Kofi Annan, “A More Secure World: The Future of the United Nations,” speech delivered at the Munich Conference on Security Policy, Munich, Germany, February 13, 2005; Kurt M. Campbell, Robert J. Einhorn, and Mitchell B. Reiss, eds., *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices* (Washington, D.C.: Brookings Institution Press, 2004); Ashton B. Carter, Gordon Oehler, Michael Anastasios, Robert Monroe, Keith B. Payne, Robert Pfaltzgraff, William Schneider, and William Van Cleave, “Report on Discouraging a Cascade of Nuclear Weapons States” (Washington, D.C.: International Security Advisory Board, U.S. Department of State, October 19, 2007); Joseph Cirincione, “Asian Nuclear Reaction Chain,” *Foreign Policy*, No. 118 (Spring 2000), pp. 120–136; Patrick Clawson, “Nuclear Proliferation in the Middle East: Who Is Next after Iran?” in Henri D. Sokolski, ed., *Taming the Next Set of Strategic Weapons Threats* (Carlisle, Pa.: Strategic Studies Institute, U.S. Army War College, 2006), pp. 27–39; James Clay Moltz, “Future Nuclear Proliferation Scenarios in Northeast Asia,” *Nonproliferation Review*, Vol. 13, No. 3 (November 2006), pp. 591–604; and George Tenet, quoted in Mitchell B. Reiss, “The Nuclear Tipping Point: Prospects for a World of Many Nuclear States,” in Campbell, Einhorn and Reiss, *The Nuclear Tipping Point*, p. 4.

43. “Weapons Production in Four Countries: Likelihood and Consequences,” National Intelligence Estimate, No. 100-6-57 (Washington, D.C.: National Security Archive, June 18, 1957).

44. *Ibid.*, p. 1. Interestingly, the same NIE concluded that “the chances now appear at least even that Japan will undertake the initial steps in a nuclear weapons production program within five years,” but that the Chinese communists will be reluctant to divert resources “urgently needed for basic economic development” and therefore “will develop a nuclear weapons program only gradually.” *Ibid.*, pp. 6–7.

most famous forecasts, President John Kennedy in 1963 expressed a nightmarish vision of a future world with fifteen, twenty, or twenty-five nuclear weapons powers.<sup>45</sup>

A number of the earliest scholarly projections of proliferation also tended to exaggerate the pace of nuclear weapons spread. A flurry of studies between 1958 and 1962, for example, focused on the “Nth Country Problem” and identified as many as twelve candidates capable of going nuclear in the near future.<sup>46</sup> Canada, West Germany, Italy, Japan, Sweden, and Switzerland were among the states most frequently picked as near-term proliferators.

The “peaceful nuclear explosion” by India in 1974 was seen by many analysts of the time as a body blow to the young NPT that would set in motion a new wave of proliferation. Although the anticipated domino effect did not transpire, the Indian test did precipitate a marked increase in scholarship on proliferation, including an innovative study developed around the concept—now in vogue—of proliferation chains. Rarely cited by today’s experts, the 1976 monograph on *Trends in Nuclear Proliferation, 1975–1995*, by Lewis Dunn and Herman Kahn, set forth fifteen scenarios for nuclear weapons spread, each based on the assumption that one state’s acquisition of nuclear weapons would prompt several other states to follow suit, which in turn would trigger a succession of additional nuclearization decisions.<sup>47</sup> Although lacking any single theoretical underpinning and accepting of the notion that proliferation decisions are likely to be attributed to security needs, the Dunn-Kahn model rejected the exclusive focus by realists on security drivers and sought to probe

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45. See “Why the U.S. Keeps Talking,” *Time*, March 29, 1963, <http://www.time.com/time/magazine/article/0,9171,896717,00.html?iid=chix-sphere>. Oddly, the NIE for the same year estimated that no more than “eight countries, in addition to France, had the physical and financial resources to develop an operational nuclear capability (weapons and means of delivery) over the next decade.” See Directorate of Central Intelligence, “Likelihood and Consequences of a Proliferation of Nuclear Weapons Systems,” National Intelligence Estimate, No. 4-63 (Washington D.C.: National Security Archive, June 28, 1963). The countries in question were Canada, China, India, Israel, Italy, Japan, Sweden, and West Germany.

46. See, for example, Howard Simons, “World-Wide Capabilities for Production and Control of Nuclear Weapons,” *Daedalus*, Vol. 88, No. 3 (Summer 1959), pp. 385–409; Christopher Hohenemser, “The Nth Country Problem Today,” in Seymour Melman, ed., *Disarmament: Its Politics and Economics* (Boston: American Academy of Arts and Sciences, 1962); and Oskar Morgenstern, “The Nth Country Problem,” *Fortune*, March 1961, p. 136.

47. 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). The earliest usage of the proliferation chain metaphor of which we are aware is by Sir John Cockcroft, who in 1968 expressed concern about the “likelihood of a chain reaction in which the acquisition of nuclear weapons by one country would provoke other nations to follow suit.” See Cockcroft, “The Perils of Nuclear Proliferation,” in Nigel Calder, ed., *Unless Peace Comes* (New York: Viking, 1968), p. 37, quoted in Walsh, “Bombs Unbuilt,” p. 5.

beneath the rhetoric to identify the possible presence of other pressures and constraints.

To their credit, Dunn and Kahn got many things right and advanced the study of proliferation. Their forecasts, however, were almost without exception wildly off the mark. Why, one may inquire, were their pessimistic projections about nuclear weapons spread—and those of their past and subsequent counterparts in the intelligence community—so often divorced from reality? Although Hymans and Solingen appear not to have been familiar with the research by Dunn and Kahn on proliferation trends at the time of their books' publications, their national leadership and domestic political survival models offer considerable insight into that dimension of the proliferation puzzle.<sup>48</sup>

#### THE FOUR MYTHS OF NUCLEAR PROLIFERATION

Hymans is keenly aware of the deficiency of past proliferation projections, which he attributes in large part to the “tendency to use the growth of nuclear capabilities, stances toward the non-proliferation regime, and a general ‘rogueishness’ of the state as proxies for nuclear weapons intentions” (p. 217). Such intentions, he believes, cannot be discerned without reference to leadership national identity conceptions, a focus that appears to have been absent to date in intelligence analyses devoted to forecasting proliferation.<sup>49</sup>

Hymans is equally critical of the popular notion that “the ‘domino theory’ of the twenty-first century may well be nuclear.”<sup>50</sup> As he points out, the new domino theory, like its discredited Cold War predecessor, assumes an oversimplified view about why and how decisions to acquire nuclear weapons are taken.<sup>51</sup> Leaders’ nuclear preferences, he maintains, “are not highly contingent on what other states decide,” and, therefore, “proliferation tomorrow will probably remain as rare as proliferation today, with no single instance of proliferation causing a cascade of nuclear weapons states” (p. 225). In addition, he argues, the domino thesis embraces “an exceedingly dark picture of world trends by lumping the truly dangerous leaders together with the merely self-

48. Solingen does cite Lewis Dunn’s 1982 book, *Controlling the Bomb* (New Haven, Conn.: Yale University Press), which includes a number of the earlier insights from Dunn and Kahn, *Trends in Nuclear Proliferation*.

49. The limited number of declassified NIEs precludes a more definitive statement on this point, but there is no evidence of their use in the nine NIEs we have examined for the years 1957, 1958, 1960, 1961, 1963, 1964, 1966, 1974, and 2007.

50. George Tenet, quoted in Hymans, *The Psychology of Nuclear Proliferation*, p. 208.

51. For a fascinating discussion of the use (and misuse) of metaphors (including dominoes) in foreign policy decisionmaking, see Yuen Foon Khong, *Analogies at War: Korea, Munich, Dien Bien Phu, and the Vietnam Decisions* (Princeton, N.J.: Princeton University Press, 1992).

assertive ones,” and equating interest in nuclear technology with weapons intent (pp. 208–209). Dire proliferation forecasts, both past and present, Hymans believes, flow from four myths regarding nuclear decisionmaking: (1) states want the bomb as a deterrent; (2) states seek the bomb as a “ticket to international status”; (3) states go for the bomb because of the interests of domestic groups; and (4) the international regime protects the world from a flood of new nuclear weapons states (pp. 208–216). Each of these assumptions is faulty, Hymans contends, because of its fundamental neglect of the decisive role played by individual leaders in nuclear matters.

As discussed earlier, Hymans argues that the need for a nuclear deterrent is entirely in the eye of the beholder—a leader with an oppositional nationalist NIC. By the same token, just because some leaders seek to achieve international prestige through acquisition of the bomb, it does not mean that other leaders “necessarily view the bomb as the right ticket to punch”: witness the case of several decades of Argentine leaders, as well as the Indian Nehruvians (pp. 211–212). The case of Egypt under Anwar al-Sadat, though not discussed by Hymans, also seems to fit this category.

Hymans’s focus on the individual level of analysis leads him to discount bureaucratic political explanations for nuclear postures, as well. Central to his argument is the assumption that decisions to acquire nuclear weapons are taken “without the considerable vetting that political scientists typically assume precedes most important states choices” (p. 13). As such, although he is prepared to credit nuclear energy bureaucracies as playing a supporting role in the efforts by Australia, France, and India to go nuclear, he does not observe their influence to be a determining factor in root nuclear decisions by national leaders. Moreover, contrary to a central premise of Solingen’s model of domestic political survival, Hymans finds little evidence in his case studies of leaders pursuing nuclear weapons to advance their political interests (p. 213). For example, he argues, the 1998 nuclear tests in India were as risky domestically for Vajpayee as they were internationally (p. 214).

Most provocatively, Hymans invokes an individual-centric mode of analysis to challenge the necessity and utility of a strong international nonproliferation regime. As discussed in a preceding section, he finds no evidence that the NPT regime prevented any of the leaders who desired nuclear weapons from pursuing them.

#### FOUR MYTHS: THE CAVEATS

As noted earlier, Hymans is more willing than many to state his argument in unambiguous terms and to pursue it as far as logically possible. Though admi-

rable in illuminating his position, this intrepid approach also makes him more vulnerable to charges of overinterpreting ambiguous information, overlooking inconvenient alternative explanations, and overstating his conclusions. Although we are sympathetic to most of his myth-busting arguments, several caveats are in order.

First, Hymans is too quick to dismiss the possibility of multicausality. This tendency leads him to discount the potential influence of both systemic- and national-level determinants on the emergence of leaders with different NIC types. To what extent, for example, can one account for the rise or demise of oppositional nationalists due to the behavior (nuclear or otherwise) of other states? More generally, it would be useful for predictive purposes to know the frequency distribution of oppositional nationalists and other NIC types in different kinds of regimes and under different international conditions. Although Hymans acknowledges that "different cultures may be more or less congenial environments for the development of certain types of NICs," he provides no clues about which cultural or societal attributes are likely to be most conducive to the emergence of oppositional nationalists (p. 29). It is tempting, however, to draw on Solingen's findings about the differences in nuclear weapons proclivity in the Middle East and East Asia and to combine these findings with Hymans's national identity conception model to posit a link between a region's history, culture, and political-economic orientation and the emergence of leaders with particular NICs.

In addition, although Hymans implies that oppositional nationalists are a rarity among national leaders, it is unclear how uncommon they are relative to other NIC types. Knowledge of this information could be particularly valuable for forecasting purposes given Hymans's innovative attempt to link NIC type to a variety of nuclear policy preferences, including not only pursuit of nuclear weapons but support for the nonproliferation regime, efforts to achieve nuclear technology autonomy, and interest in superpower nuclear guarantees (p. 38, table 2.2).

A second caveat is Hymans's premature dismissal of the force of domestic political and bureaucratic factors as both pressures for, and constraints on, nuclear weapons choices. Although Hymans presents new information consistent with a minimalist interpretation of bureaucratic determinants in his examination of nuclear decisions by Mendès-France and Vajpayee, the evidence is much less conclusive in the Australian case, and appears to be at odds with conventional wisdom about nuclear decisionmaking in a number of other cases. Prime Minister Gorton, for example, may have decided early on that Australia should acquire nuclear weapons, but in fact was repeatedly frus-

trated in his pursuit of them by his cabinet. Hymans's depiction of Gorton's efforts "to sneak a nuclear weapons program into existence" past traditional opposition in the government and to try "mightily to jumpstart a nuclear weapons program while never daring to speak its name" fits poorly with a model in which the national leader is portrayed as exercising decisive or nearly undiluted power over nuclear weapons decisions (pp. 130, 133).

An additional cautionary note is in order regarding Hymans's portrayal of the limited effect of the international nonproliferation regime on nuclear weapons spread. One problem with his argument is that the case studies he undertakes are ill suited to test rigorously the proposition. France acquired nuclear weapons well before the negotiation of the most important element of the regime—the NPT; Gorton's flirtation with nuclear weapons also began prior to the entry into force of the treaty; and Indian leaders of almost every political stripe and national identity conception shared a profound antipathy for a treaty-based regime that treated India as a second-class citizen whether or not it possessed nuclear weapons. For Hymans (or Solingen) to demonstrate that the NPT and its associated nonproliferation regime elements play a minor role in forestalling nuclear weapons spread, he (she) must marshal evidence from a much broader set of countries in the post-NPT period.

#### DOMESTIC POLITICAL SURVIVAL IN A REGIONAL CONTEXT

Solingen, like Hymans, is wary of predicting rampant weapons spread and finds little evidence in her case studies to suggest the existence of a proliferation dynamic that resembles nuclear chains. Her guarded optimism about the near-term nuclear future follows logically from her decisionmaking paradigm, which emphasizes the manner in which the external environment is filtered through the lens of domestic political coalitions. These political groupings, it is assumed, typically will make rational choices based on their calculation of regime (rather than state) benefits. These decisions, moreover, are apt to vary significantly from state to state and regime to regime. As a consequence, one state's decision to withdraw from the NPT, launch a nuclear weapons program, and even test a nuclear device need not lead to a similar response in other states.

Solingen is more cautious than Hymans, however, in rejecting the possibility of proliferation chains *per se*, because of the importance she attaches to regional dynamics and nuclear neighborhoods. A widely subscribed to nonproliferation norm in the region may have a reinforcing effect on the nuclear calculus of individual states. Likewise, regional predominance of inward-looking models and a propensity for nuclear weapons adventurism may lead

states that, for political and economic reasons, would have preferred nuclear weapons abstinence to tilt toward the regional center of (proliferation) gravity. Thus, a state with an outward-looking ruling coalition may pursue nuclear weapons should these outward-oriented elites perceive extreme external threats and calculate that the political benefits of economic integration and nuclear restraint no longer outweigh those of going nuclear. Although Solingen does not elaborate on this scenario, she does express concern about the potential impact of severe global shocks, such as a worldwide economic downturn, on the resilience of outward-looking political coalitions. Such shocks, she worries, might lead to “domestic evolutions away from internationalizing trajectories,” particularly in East Asia, and might somehow “encourage nuclear dominos” (pp. 288–289).<sup>52</sup> The manner in which this hypothetical proliferation process would unfold, however, is not explained, and the domino metaphor does not appear to be consistent with any of the actual decisionmaking processes she depicts in her case studies.<sup>53</sup>

The thrust of Solingen’s argument, and that of Hymans, provides good reasons to be skeptical of forecasts involving rapid proliferation, especially in the near term. Although the two authors disagree about the relative influence of single individuals and political coalitions on nuclear decisions, they agree that proliferation decisions are heavily contingent on the right combination of domestic factors, be it the presence of a leader with an appropriate national identity conception or an inward-looking regime whose political interests are served by pursuit of nuclear weapons. The nuclear weapons behavior of other states at best plays an indirect and typically secondary role in influencing their own nuclear weapons choices. The two books thus provide a useful corrective to the simplistic, overly mechanistic, and all too commonly expressed view that we are near a tipping point at which a single new entrant to the nuclear club could trigger a proliferation epidemic, chain, or avalanche.

### *Policy Implications*

The overall record of proliferation prognoses by government intelligence analysts and political science scholars alike instills little confidence that the international community will receive early warning about emerging nuclear

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52. See also Solingen’s reference to the “possible nuclear domino effect or ‘breakout’ in East Asia” should Japan go nuclear. Solingen, *Nuclear Logics*, p. 260.

53. Solingen is particularly effective in critiquing neorealist notions of “reactive proliferation” in her analysis of Egyptian nuclear decisionmaking. *Ibid.*, p. 244.

weapons threats. Repeatedly, both communities have failed to anticipate significant nuclear weapons developments in a timely fashion or, in some instances, have missed them altogether. Examples of proliferation surprises include the first Soviet and Indian nuclear explosions, the initiation and successful development of Israeli nuclear weapons, the timing of India's second and Pakistan's first nuclear tests, the rise and demise of Iraq's nuclear activities, and the nature and scope of North Korea's nuclear weapons ambitions.<sup>54</sup> Illustrative of the second variety of forecasting failure—total ignorance—was the failure by U.S. intelligence to detect the revival of Yugoslavia's covert nuclear weapons program in 1974 and its growth over the next fourteen years, an intelligence blind spot apparently shared by the Soviet government.<sup>55</sup>

Just as government and academic experts often have missed significant proliferation activities, they also frequently have exaggerated the scope and pace of nuclear weapons proliferation. For reasons described in the preceding section, many current proliferation prognoses appear destined to repeat this phenomenon of “crying wolf.” The books by Hymans and Solingen do not provide simple or foolproof antidotes to the current proliferation forecasting malaise. They do, however, offer promising new insights and tools to assist policy practitioners in avoiding common errors and making better-informed estimates of nuclear proliferation futures.

One of the most important implications for forecasting proliferation to be drawn from Hymans's book is the danger of reliance on highly restricted and sensitive human and signals intelligence to the neglect of careful analysis of public leadership statements.<sup>56</sup> Relevant to this point is Senator Patrick Moynihan's admonition to U.S. officials following the 1998 Indian nuclear weapons test—“Learn to read.”<sup>57</sup> As the comparative case studies of Hymans

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54. For an extended discussion of these intelligence failures and some more successful estimates, see Jeffrey T. Richelson, *Spying on the Bomb: American Nuclear Intelligence from Nazi Germany to Iran and North Korea* (New York: W.W. Norton, 2006).

55. For an analysis of this period as well as the initial phase of the Yugoslav program between the late 1940s and early 1960s, with which U.S. intelligence was slightly familiar, see William C. Potter, Đuro Miljanić, and Ivo Slaus, “Tito's Nuclear Legacy,” *Bulletin of the Atomic Scientists*, Vol. 56, No. 2 (March/April 2000), pp. 63–70. According to Ambassador Roland Timerbaev, the Soviet government also appears to have been oblivious to Tito's nuclear weapons ambitions. Personal communication by Potter with Timerbaev, April 29, 1998. See also Roland Timerbaev, *Rossiya i yadernoye nerasprostraneniye, 1945–1968* [Russia and nuclear nonproliferation, 1945–1968] (Moscow: Nauka, 1999).

56. Hymans, *The Psychology of Nuclear Proliferation*, p. 217, points to early declarations by Gorton of his nuclear ambitions before the Australian Senate.

57. Quoted in *ibid.* Moynihan's admonition is somewhat ironic given the total surprise he experienced fourteen years earlier as U.S. ambassador to India at the time of the first Indian nuclear detonation. See Richelson, *Spying on the Bomb*, p. 233.

and Solingen also demonstrate, there is no good substitute for extended in-country research and use of primary-source materials. Finally, the “learn to read” dictum for intelligence analysts also might usefully apply to English-language, open-source nuclear trade journals such as *Nucleonics Week*, *Nuclear Fuel*, *Nuclear Engineering International*, and *Nuclear News*—expensive and relatively esoteric publications, but extremely valuable sources of information on nuclear commerce often overlooked in the past by intelligence personnel precisely because they were unclassified.<sup>58</sup>

A second implication for forecasting suggested by Hymans’s and Solingen’s research is that despite the limited predictive power of a number of leading international relations paradigms, theory may be valuable in directing attention to counterintuitive explanations regarding proliferation dynamics. Although Hymans and Solingen disagree about what constitutes the most powerful theory in this respect, they share skepticism about conventional wisdom and a readiness to subject their preferred approaches to empirical testing.<sup>59</sup> This hypothesis-testing orientation and skepticism about prevailing views often has been unwelcome in the intelligence community, whose organizational culture is ill disposed to the vetting and acknowledgment of past mistakes.

One counterintuitive proposition highlighted by the work of Hymans and Solingen and deserving particular attention by U.S. policymakers with responsibility for nonproliferation policy asserts the limited value of security guarantees in forestalling nuclear weapons ambitions. Although the evidence presented by Hymans and Solingen is by no means conclusive and ignores some relevant counterexamples, their parallel conclusions drawn from different theoretical perspectives and based on a variety of case studies cannot be dismissed out of hand and suggest the need to examine more closely a number of often asserted but infrequently tested causal relationships involving the impact of alliances on nuclear weapons restraint.

The books by Hymans and Solingen also offer important insights of great relevance to proliferation forecasting involving the murky area of nuclear

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58. It would be an interesting exercise to compare the timeliness and accuracy of the last twenty years of NIEs with the published analyses of *Nuclear Fuel* and *Nucleonics Week* reporter Mark Hibbs, whose news reports about the nuclear weapons-related activities of both state and nonstate actors often appear to be better informed than those of U.S. government spokespersons. For an account of Hibbs’s reporting, see William Langewiesche, *The Atomic Bazaar: The Rise of the Nuclear Poor* (New York: Farrar, Straus and Giroux, 2007).

59. This open-mindedness is more apparent in Solingen’s book, but it also is reflected in the subsequent writing of Hymans. See, for example, Hymans, “Individuals, Institutions, and Nuclear Choices: A Theoretical Framework and Research Agenda,” paper presented at the Workshop on Forecasting Proliferation Developments.

weapons latency and the relationship among technical capabilities, leadership and political coalition motivations, and nuclear weapons choices. Again, the authors offer competing explanations about the primacy of emotions or politics, but both demonstrate conclusively the fallacy of the “technological imperative,” and the limited utility of nuclear capacity as a predictor of nuclear weapons acquisition.<sup>60</sup> Hymans’s thesis, because of its great clarity and parsimony, and because it is supported by well-developed content analysis techniques, is essentially available on the shelf and ready for use today by those who would like to estimate the nuclear weapons proclivities of Mahmoud Ahmadinejad, Hugo Chávez, and Aleksandr Lukashenko. It also begs to be tested against a much larger body of past would-be proliferators such as Saddam Hussein, Muammar Qaddafi, and Josef Broz Tito. Hymans’s approach may prove deficient and require major revisions or abandonment altogether, but it certainly merits experimentation for forecasting purposes.

Although more complex and therefore more difficult to apply in making prognoses, Solingen’s model of domestic survival also has potential for estimating which of the many countries with “virtual” or “near virtual” nuclear arsenals will move to translate these latent capabilities into actual weapons stockpiles, under what circumstances they will choose to do so, and the likely impact of sanctions and inducements in altering their choices. Her comparative analyses, for example, suggest the importance of regional dynamics in shaping proliferation trends and the potential for shared perspectives toward the global economy to modify or reinforce the preferences of ruling coalitions regarding nuclear weapons. Her study also implies that a significant change globally in the political economic reward structure for states adhering to stringent nonproliferation behavior could alter how ruling coalitions assess the costs and benefits of nuclear restraint. Although she does not directly relate this argument to the pending U.S.-India nuclear deal, one could imagine that perceived rewards in the form of nuclear trade with a non-NPT party might contribute to a reassessment by outward-looking elites of the costs of pursuing nuclear weapons.

Finally, the books by Hymans and Solingen offer a useful corrective to the assumption, especially pronounced among those in the intelligence community, that a high correlation exists between that which is classified and that which is true or important. This assumption underlies a tendency on the part

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60. See also Jo and Gartzke, “Determinants of Nuclear Proliferation,” for a recent quantitative analysis of the relationship between “latent nuclear weapons production capability” and nuclear weapons programs.

of those in government to dismiss the attempts at policy-oriented analysis by those in academe. Although much of the future-oriented nonproliferation literature over the past half century provides grounds for this perspective, the overall record of government forecasts is hardly better. Taken together, an overconfidence in often inaccurate predictions by government proliferation analysts and scholars alike lends credence to the “empty suit” fallacy popularized by Nassim Taleb in his book *The Black Swan* and based in part on research by Philip Tetlock.<sup>61</sup> According to this fallacy, experts are no more likely than others to predict certain kinds of events. As Tetlock demonstrates, however, these same experts are far more likely to have confidence in their predictions, to discount dissonant data, and to defend conditional forecasts long after they should have been abandoned.<sup>62</sup> The books by Hymans and Solingen do not enable us to avoid the empty suit fallacy when it comes to divining nuclear ambitions, but they provide us with a set of mirrors to better see how well the suit fits and what alterations are needed.

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61. Nassim Nicholas Taleb, *The Black Swan: The Impact of the Highly Improbable* (New York: Random House, 2007); and Philip E. Tetlock, “Theory-Driven Reasoning about Plausible Pasts and Probable Futures in World Politics: Are We Prisoners of Our Preconceptions?” *American Journal of Political Science*, Vol. 43, No. 2 (April 1999), pp. 335–366.

62. Tetlock, “Theory-Driven Reasoning about Plausible Pasts and Probable Futures in World Politics,” p. 335.