Modeling Decisionmaking of Potential Proliferators as Part of Developing Counterproliferation Strategies

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Preface

This is the final report of a small exploratory project investigating new methods for understanding the reasoning and influencing the behavior of potential nuclear proliferators. It draws on results of an interdisciplinary workshop held at RAND on 23-24 March, 1993, which dealt with the authors' methods for modeling decisionmaking, insights from modern social psychology bearing on judgment and decisionmaking, and more traditional international-relations theory. We also incorporate insights from other research done for the project, including a case history of Sweden's decision not to proliferate (Cole, forthcoming), an examination of the importance to proliferation decisions of civil-military relations (Bhimaya, 1994), and some new thinking about the psychopathology of proliferation (Ronfeldt, forthcoming). In this way the report, although brief, seeks to articulate the "demand side" of proliferation, providing a complement to the large existing body of "supply side" proliferation research. The work has been guided by our belief that insights into reasoning processes will be critical to the success of efforts to deter, contain, coercively reverse, or persuade against proliferation.

The study was supported by the Central Intelligence Agency's Office of Research and Development and was conducted in the International Security and Defense Policy Center of RAND's National Security Research Division. Comments and inquiries are most welcome, and should be addressed to Dr. Paul Davis, Corporate Research Manager for Defense and Technology Planning in Santa Monica, CA. The electronic mail address is Paul_Davis@rand.org.
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Summary

Too often, discussion of proliferation is cast in terms that fail to recognize the motivations that some nations have for acquiring weapons of mass destruction (WMD). Developing strategies to avoid or counter proliferation, however, should be informed by a clear understanding of those motivations and the reasoning that national leaders may go through as they decide for or against proliferation of various types. To illustrate how one might gain such an understanding we have applied, in an exploratory and very limited fashion, a methodology for "modeling" the reasoning of national leaders. We believe that this methodology can be used effectively as the framework for analysis, providing value added even when most of the individual elements of the analysis are already familiar, or for group discussion where it can provide structure and a mechanism for discussing conflicting images of how foreign leaders may reason and what strategies might be effective.

Our approach assumes that the leaders in question strive for rational decisionmaking by explicitly, but subjectively, considering the most-likely, best-case, and worst-case outcomes of various options. That is, they reflect at least limited rationality by considering a range of options and by looking at the upside and downside of those options, as well as the best-estimate outcome. There is ample opportunity for "errors," however, because there are so many problems associated with recognizing and evaluating options. Further, under some circumstances, decisionmaking style is significantly affected by psychological factors introducing biases and other types of misjudgment. This model of limited rationality has proven effective in prior analyses of crisis decisionmaking, including that of Saddam Hussein (see Davis and Arquilla, 1991a,b).

A basic principle of our approach—whether applied by a single analyst or in group discussion—is the need to develop and work with alternative models of leadership reasoning, because there are usually large inherent uncertainties and it is important to get away from pure "best-estimate thinking," which so often breeds the confidence of consensus, but then proves wrong. In developing strategies to influence foreign leaders we should consider aspects of strategy that would favorably influence different types of reasoning. In this study we examined two generic models of behavior. Model One in this study is pragmatic and incrementalist; it is sensitive to downside risks. Model Two is more aggressive and optimistic, and either individually or ideologically very
ambitious; consistent with that, it tends to emphasize the upside potential of options.

There are numerous factors likely to weigh heavily in the reasoning of leaders contemplating acquisition of WMD. We assume the factors apply to both models of reasoning. We group the factors into three classes: (a) security-related, (b) organizational, and (c) psychological. The security-related factors involve concerns about deterring regional states and the intervention or meddling of superpowers, the prestige value that may be associated with nuclear weapons, and the potential value of nuclear weapons for warfighting (as in averting a disaster when conventional forces are defeated). Organizational factors include normal bureaucratic politics, civil-military relations, and regime preservation. Psychological factors involve the phenomena of “prospect theory,” various causes of overconfidence (e.g., the “availability bias” and “thresholding effects”), and psychopathology. Based on our review of eleven instances of proliferation activities, we conclude that security-related factors have played a dominant role so far, but that there is evidence of organizational and psychological effects as well. We briefly illustrate the factors and the modeling approach by considering North Korea and some Persian Gulf nations.

Our initial and very limited analysis with the decision-modeling approach suggests numerous implications for the development of country-specific counterproliferation strategies. These include paying more explicit and credible attention to legitimate security concerns of the nations considering proliferation and making WMD a less attractive option by highlighting associated dangers. As examples of dangers, we note that nations with WMD become major targets of uneasy neighbors and, perhaps, superpowers; that WMD can create serious crisis instabilities; that proliferators may be permanently relegated to an outside-the-club status and viewed as pariahs; and that certain proliferators, at least, may be subjected to economic embargoes. Negotiators can also seek to highlight the illogic of decisions that reflect compromise and other organizational factors unrelated to national security, especially when the nation in question appears to be “stumbling” into an option none of its political factions truly wants (e.g., small, vulnerable, and relatively unusable nuclear weapons). Finally, there are a number of measures that could be contemplated as part of a strategy to offset the effects on decisionmaking of psychological factors. These include advertising the downside of WMD ownership by painting credible disaster scenarios and advertising the ineffectiveness of leaders with certain psychopathological features.

Although the work described here has been exploratory and methodological, we conclude that the approach we have taken is ready to be applied at a practical
level in government, perhaps through a combination of analysis and gaming conducted in support of strategy development.
Acknowledgments

We thank all the attendees of the decisionmaking-of-proliferators workshop in March, 1993 (Appendix), particularly Professor Daniel Kahnemann for his summary remarks. We also thank Professor Rob MacCoun and Paul Cole, both of whom were at RAND during most of the research, and colleagues David Ronfeldt, Kotera Bhimaya, Kenneth Watman, and Dean Wilkening for either contributing to the project or providing us with drafts of their work on related projects. Colleague Zalmay Khalilzad provided a useful review.
1. Introduction

Background and Objectives

As the post-Cold War world begins to take shape, a troubling paradox has emerged: The end of the U.S.-Soviet rivalry and the concomitant lessening of international tensions have not dissuaded many states from their pursuit of arsenals of weapons of mass destruction (WMD).\textsuperscript{1} Indeed, it seems that the reverse is true, that more nation-states may doggedly join the quest for these ultimate armaments.

The specter of proliferation has sparked considerable debate in the United States. Civilian and military officials have expressed consistent and staunch opposition to continued proliferation, sometimes expressing alarm. In academia, on the other hand, there are serious disagreements about both trends and such basic issues as the effects of proliferation on international crisis and deterrence stability,\textsuperscript{2} with many arguing in favor of the spread of WMD.\textsuperscript{3} Others regard it as inevitable, if not desirable (Layne, 1993).

This study addresses nuclear proliferation in a framework within which the disparate strands of academic theory and policy-relevant thinking may meet and interact. Its primary focus is on explaining the possible decisionmaking logic of potential proliferators as a guide to the development of counterproliferation strategy. The work builds on decision-modeling methodology first employed in our study of Saddam Hussein during the Gulf crisis (Davis and Arquilla, 1991a,b; Arquilla and Davis, 1992).

\textsuperscript{1}Spector (1992) notes the few apparent cases of “repentant proliferators,” including Argentina, Brazil, and South Africa.

\textsuperscript{2}See Roberts (1993) for a recent survey.

\textsuperscript{3}See Waltz (1981), which provides the most comprehensive argument in favor of proliferation; Mearsheimer (1990) and Van Evera (1991) argue the case for German proliferation; Bueno de Mesquita and Riker (1982) contend that “selective proliferation” is best; finally, Rosen (1977) and Feldman (1982) have argued that the spread of weapons of mass destruction in the Middle East could have salutary effects. However, Sagan (1994) provides an insightful critique of the various arguments in favor of proliferation.
Approach

Our methodological approach consists of building a number of descriptive, semiformal models of proliferator reasoning. They incorporate our notion of "limited rationality" which, in addition to the usual difficulties of time and information constraints incorporated in the concept of bounded rationality (Simon, 1982), includes a number of generic psychological factors, particularly factors that introduce "errors" in judgment and decisionmaking. The models also assume a dependence upon qualitative reasoning, as opposed to precise utility calculations. The modeling thus reflects our own insights and analysis, as well as key findings drawn from modern empirical social psychology. The major elements of our models can be used directly in group discussion—as part of brainstorming, discussion, or decisionmaking. That is, while the models can in principle be fully developed and made rigorous in the sense of defining assumptions and logical deductions, they are most valuable when used more informally to structure thinking, discussion, and summary without providing all the details.

Alternative Images of the Protagonist

Two Generic Models. A key element of our baseline approach consists of developing alternative images of potential proliferators. This is crucial because, even with the best theories and insights from which to draw, uncertainties about another's mindset will always be the rule rather than the exception. In this regard, our initial approach has been to consider two broad models, the first characterized by prudential, incrementalist thinking, the other guided by strongly personalized or ideologically visionary goals and expectations. In considering policy options, it is much better to remain consciously aware of such different plausible models of reasoning than to fall victim to what we describe as the "tyranny of the best estimate." In our experience, having two models rather than one goes a long way in increasing humility and improving discussion. A subtlety in the approach is that human beings do not always reason in the same way from one circumstance to the next. That is, the same individual might follow the reasoning style of a Model One, Model Two, or some other model, depending on details of context. For some individuals, a single reasoning style predominates, but for others the style changes. Reasoning is seldom, however, "random" and which style will predominate is sometimes predictable. All of this

\footnote{There is a considerable literature on contextual sensitivity. See, for example, the review in Chapter 8 of Kleindorfer, Kunreuther, and Schoemaker (1993), which includes citations to classic works by James March, Charles Lindblom, and others.}
means that our approach is not equivalent to selecting, once and for all, the "right" model of a leader's reasoning, but rather is a way to deal with inherent uncertainty.

Other Models. Other models may also be needed in the future, but we have not yet had the opportunity to develop them. In particular, we hope to extend the methodology to collective decisionmaking⁵ and to leaders concerned primarily with regime survival, but without the ambitiousness or ideological notions of, say, Saddam Hussein. In the meantime, we have reflected some aspects of organizational behavior in the baseline models, essentially by having the models represent either the leader's reasoning or the ultimate reasoning of the leadership group (without describing the internal disagreements).

Limited Rationality: An Attempt to Assess Options

With regard to specific reasoning processes, as opposed to mindsets, we assume that human policymakers confronting uncertainty strive to consider alternative courses of action rationally, by considering not only the likely outcome of options, but also their upside potential and downside risks, after which they apply a relatively superficial logic that seems to them more compelling than it "should be" from a theoretical perspective. In the course of this, they are subject to numerous cognitive errors of both perception and deduction. Some of these are well known, while others such as "thresholding out" consideration of very bad consequences considered to be not very probable are more subtle but exceedingly important. Overall, our approach assumes that reasoning depends upon trade-off heuristics rather than calculations of utility (Davis, 1994a).

Structure of the Study

In Section 2, we develop the principal variables and key features of the decision model in more detail, giving special emphasis to those factors likely to bear upon the reasoning of potential proliferators. The goal of the section is to improve our understanding. Section 3, on the other hand, strives to employ the findings about reasoning to craft initiatives capable of influencing behavior away from the impulse to develop or acquire WMD. Finally, Section 4 assesses the findings of

⁵Although it is probably often the case that the complications of group processes are overridden or "distilled out" of the decisionmaking process in serious crises and conflict (Axelrod, 1976; Bueno de Mesquita, 1968; Posen, 1984), it is not always so (Arrow, 1951; Allison, 1971). Further, the effect of group processes can, depending on circumstances, tend to water down decisions or, to the contrary, to reinforce decisions with dubious logic. On the latter point, consider that in 1941, after much debate, collective Japanese leadership sought to establish a vast East Asian and oceanic empire by means of a bold surprise attack on the U.S. Navy. Also, in 1982, the Argentine junta undertook a similarly bold invasion of Britain’s Falkland Islands. See also Watman and Wilkening (forthcoming).
the study, and considers a number of relevant paths for future research. We emphasize, however, that this effort was small and exploratory. By no means do we claim our results are definitive or comprehensive.
2. Understanding Proliferators

Elements of a Decision Model

The process of decision model development, in the proliferation context and for any other, consists in our approach of four basic steps (Davis and Arquilla, 1991a). First, we seek to "get inside the decisionmaker's mind" (or collective mind), which requires understanding the subject's possible and likely values and goals, in terms of short- and longer-term aims, with consideration given to his assessment of the current situation. For example, before the invasion of Kuwait, Saddam Hussein's short-term goals in pursuing weapons of mass destruction (WMD) were likely to shore up his geostrategic position against nuclear Israel and resurgent Iran, as well as to acquire capabilities that would complicate the decision of any outside power (namely the United States) to intervene in the high politics of the Persian Gulf region. His longer-term goal was, no doubt, to establish a hegemonic regional position, then consolidate it by acquiring a secure deterrent capability. His situation in mid-1990 was economically very difficult, politically uncertain, and militarily subject to erosion relative to Iranian rearmament. The long-term trends were completely unacceptable to him, especially since he considered himself a potential great man of history (Davis and Arquilla, 1991b). The first element of this step is identifying key variables affecting decision.

The second step in model development calls for identifying the strategies and policy options available to the subject. We assume that all options are visible to each model of the decisionmaker. To continue with the example of Saddam, he had a variety of strategic paths and options open in the summer of 1990, ranging from simple "belt tightening" measures to limited aggression (taking part or all of Kuwait) or a full-scale onslaught on his principal economic tormentors in the Gulf Cooperation Council (GCC), which would have required an invasion of the Arabian peninsula.

The third step is the evaluation of the various options. Basically, this process consists of characterizing the best, worst, and most likely outcomes of each

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6 For recent work on deterring regional aggression, which discusses indirectly factors affecting the reasoning of aggressors, see Watman and Wilkening (forthcoming) and Davis (1994a).
option, and then folding these judgments together to form net assessments of each option. A variety of diagrammatic and decision-table methods can be used to clarify and communicate the issues and conclusions. In what follows, we apply this approach to proliferation, first identifying relevant variables that would be weighing on decisionmakers' minds.

**Key Variables**

*Types of Variables*

We distinguish among factors in three groups: security-related, organizational, and psychological. These distinctions are analytically useful, but a practical blurring effect often occurs. For example, self-image, while primarily psychological, will often have profound effects upon notions of national security requirements, and upon organizational goals and missions. Similarly, a factor such as the local balance of forces has effects beyond the security sphere, perhaps spurring organizational innovation or redesign, or affecting the psychological willingness to accept or avoid risks. Despite these ambiguities, the three categories appear to be quite useful.

*Security-Related Factors*

*Strategic and Structural Considerations.* What factors influence the key decision-maker(s) of a given state to pursue the capabilities afforded by weapons of mass destruction (WMD)? This question lies at the heart of the “demand side” of proliferation. To the extent that it has been addressed previously, the generally accepted explanation is that strategic and structural factors drive proliferation. Some years ago, Wolf Mendl of London University put it succinctly (Mendl, 1969), that proliferation was pursued for two reasons: to deter one’s betters, or to deter one’s equals. The former aspiration required the acquisition of at least an “arm tearing-off capability,” which would also prove adequate for dealing with the latter.

Mendl’s argument remains timely, and is adopted explicitly or implicitly in the many studies that argue the inevitability or desirability of proliferation. Thus, the image of proliferation’s demand side often remains limited to structural factors, such as the need to redress the local military imbalance or to generate freedom of action in one’s region by having a highly damaging escalatory threat to make against any potential intervention by an extra-regional actor. Mendl’s
view, however, is incomplete. We mention two other security-related factors here.

*Prestige Value.* A factor that is difficult to characterize as “strategic/structural” or “psychological” is the prestige value that may be perceived from being a nuclear state (as distinct, probably, from a state with chemical or biological weapons). One can argue that it is unnatural for major states not to have universally recognized symbols of power (Layne, 1993; Waltz, 1981). Perhaps a combination of this and bureaucratic politics explains India’s defense planning, which is committing so much of a poor nation’s treasure to dubious and expensive military instruments such as aircraft carriers, at the opportunity cost of more practical investments (Tellis, 1990; Bhimaya, 1994). It is at least plausible that some of the states that are now considering nuclear weapons, or that will consider them in the future, will be affected by a vague but strongly felt sense for what is appropriate to them as “major powers.” Here we have in mind the potential future reasoning of Japan and Germany among others.

*Warfighting.* A different kind of security factor is the potential value of nuclear weapons in actually conducting a war, whether to defend against an aggressor or in pursuit of territorial or other aims. Nuclear weapons can

- be the *wild card* that helps deter intervention in regional affairs by world powers such as the United States or Russia. Would the United States have liberated Kuwait if Iraq had had numerous survivable nuclear weapons and the willingness to use them?
- be the *shadow* that deters the other side, if it becomes successful conventionally, from pushing on for complete military victory and unconditional surrender. That is, possessing nuclear weapons may greatly limit the downside of risky military adventures by limiting the war aims that the other side would set if the war tilted in its favor (Wilkening and Watman, forthcoming).
- be a *usable trump card* that averts disaster and buys critical time to consolidate victory while a cease-fire and peace agreement are reached (e.g., by using one or a few nuclear weapons just as the United States was intervening or preparing to intervene, an attacking nation might be able to achieve its war aims and then move to negotiations from a position of strength).
- be an effective *warfighting instrument.* While this notion is foreign to most Americans and Westerners in 1994, nuclear warfighting is by no means

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7Waltz (1959:236) argued that “fear of big weapons may actually produce a spate of smaller wars.”
unthinkable. NATO and the Warsaw Pact prepared for nuclear warfighting (e.g., the U.S. "New Look" of the 1950s) and many military officers considered it both plausible and winnable for years. It appears that factions of the Israeli armed forces have also pursued nuclear weapons for their actual warfighting capability, since Israel has developed much more extensive nuclear warfighting capabilities and doctrine than would be consistent with a pure deterrent approach, much less the existential deterrence approach so much beloved by some. Pakistan also has a nuclear warfighting doctrine designed to deal with the potential collapse of a conventional defense (Bhimaya, 1994).

Organizational Factors

Much more work is needed on organizational factors, but our preliminary research allows some observations about three: civil-military relations, bureaucratic politics, and regime maintenance.

Civil-Military Relations. It seems intuitive to us that a nation's civil-military relations will have a great deal to do with decisions regarding the pursuit of WMD. For example, given weak civil-military relations, a military might be able to pursue institutional interests contrary to the wishes of civilian leaders, including WMD development and acquisition. In other cases, it may be civilian authorities that wish to pursue WMD, with the military acting as a restraining influence (as is the case in India). Indeed, it is not unusual for military officers to be skeptical of WMD because of seeing them (especially nuclear and biological weapons) as "political" weapons rather than as something "usable." Senior military officers are also sometimes even more concerned than civilians about maintaining strict control. Thus, generalizations about who would or would not favor proliferation are unlikely to hold up: nation-specific details matter. It does appear, however, that good civil-military relations will, on balance, work against inappropriate proliferation (i.e., proliferation that does not clearly serve the nation's security interests) by improving the quality of internal debate and making unilateral actions by any one faction more difficult. In some respects, the argument here is similar to the arguments about why democracies seldom start wars against each other.  

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8 There is still not much official information available on Israel's nuclear capabilities. However, see Hersh (1991), which is very sobering.

9 See Bhimaya (1994), which stemmed from work begun under this project, and citations given there. See also Sagan (1994), who develops these themes in some detail.
Bureaucratic Politics and Collective Decisionmaking. The decisionmaking processes of modern nation-states, even authoritarian ones, may be powerfully influenced by the pulling and hauling of a variety of institutional actors, driven by their own political, fiscal, and strategic aims. For example, Sweden found itself in an ambiguous geostrategic position throughout the Cold War, and had to think seriously about whether to acquire WMD. Its military was sensitive to this structural impulse to proliferate, supporting the acquisition process. However, Sweden’s other institutional actors weighed in heavily on this issue, and when the costs of weapons development were finally delineated, a decision not to proliferate ensued (Cole, 1994). The reasons included (a) a belief that the Soviet Union was unlikely to invade Sweden in isolation; (b) a belief that Sweden benefited indirectly from the extended deterrent the U.S. provided for Western Europe (a kind of security “free riding”); (c) a desire to be in the club of “good” or “virtuous” nations that were moving the world in favorable directions; and (d) cost.10

Regime Maintenance. Yet another organizational factor of considerable interest involves the desire of some leaders to preserve their own regime at all costs.11 This motive is by no means absent even in democracies (as evidenced by the lengths to which officials in power sometimes go to hide damaging information, as in the Watergate scandal),12 but it is particularly strong in totalitarian and authoritarian countries. Depending on exquisite contextual details, it may or may not be the case that important leaders or factions will, as the result of concerns about regime stability, favor development (and perhaps the threat or actual use) of nuclear weapons. Although North Korea’s nuclear program was begun many years ago for rather different reasons, North Korea’s Kim II Sung and Kim Jong II may now see nuclear capability as a trump card in dealing with factions that might otherwise be able to tip the political balance of power. With nuclear capability, the regime can point to how it is showing strength, defying the United States and South Korea, and assuring the security of North Korea. Without the nuclear card to brandish, it might be even more evident to everyone than it already is that North Korea is rapidly sliding downhill into economic oblivion. It is possible, of course, that North Korea could trade in its nuclear-weapons-program “chip” for substantial enough aid that this would no longer be obviously so.

10Our summary of the reasons is based on analysis in Cole (1994) and comments by colleague Ashley Tellis. See also Spector (1992).
11Concerns about regime survival can also reduce the degree to which a nation’s leaders are affected by deterrent threats. See Watman and Wilkening (forthcoming).
12See also Nincic (1992), especially Chapter 5, “Democracy and Deception.”
Psychological Factors

With regard to general psychological factors, we have relied heavily upon insights consistent with those of Kahneman and Tversky’s work on prospect theory (see, e.g., Kahneman and Tversky, 1979), adapting it to interstate relations (Davis and Arquilla, 1991a,b). Fundamentally, we hold that states (and their leaders), like gamblers, will be prone to accept high risks when their situation is bad (the “domain of losses”) and that they will behave more prudentially the better their situation, when they are sitting on winnings. In this study, we add an insight from recent behavioral research, that potential proliferators may make their decisions to proceed on the basis of unrealistic overconfidence regarding their chances of success. The source of this overconfidence is likely to lie in the failure to perceive all the risks that attend the proliferation process, leading to the underestimation of downside risks. This phenomenon, where “out of sight” is truly “out of mind,” is known as availability bias (see Kahneman and Lovallo, 1990; Russo and Kolzow, forthcoming). Our own work (Davis and Arquilla, 1991a,b; Davis, 1994a) has emphasized an additional factor leading to overconfidence, a “thresholding” effect in reasoning, which amounts to people (all of us) disregarding entirely risks associated with events estimated to have probabilities “too low to worry about.” Such common reasoning can have grave consequences, as when individuals forgo fire insurance and then suffer a fire destroying nearly all their possessions, or when a potential aggressor such as Saddam disregards the consequences of an “improbable U.S. response” such as deploying to Saudi Arabia, building up for six months, and conducting a massive counteroffensive to dislodge him from Kuwait.\textsuperscript{13}

Finally, in this study, we add one further variable that acknowledges the importance of psychopathological influences. It is plausible that the enormous destructive power of WMD has an unnaturally powerful attraction for certain personality types who crave aggrandizement, especially at the expense of a hated adversary. This notion grows out of Kernberg’s theory of malignant narcissism (see, e.g., Kernberg, 1993, and earlier citations given there), but has been modified and expanded during our study by colleague David Ronfeldt’s theory that overweening self-pride may drive a leader to behave retributively toward a given opponent, out of all proportion to the context of a dispute (Ronfeldt, 1994). Someone driven by Ronfeldt’s “hubris-nemesis complex” may still relate means

\textsuperscript{13}A recent paper confirming the thresholding effect is that by Ocampo (1994), which concludes that the Argentine junta invaded the Falklands with no contingency plans whatsoever for a British response: it had “thresholded out” that possibility.
to ends in superficially rational ways, but the antecedents of his behavior are psychopathological.\textsuperscript{14}

Although not discussed at the 1993 RAND conference, another psychological consideration might be called judgmentalism. Here we mean that a potential proliferator may be led to decisions at least in part by its judgmental reaction to the attitudes and behaviors of the major states such as the United States and other proponents of nonproliferation. That is, such a nation might think along the lines that "if they are so eager to keep us from having nuclear weapons, then there must be good reasons to have those weapons." That is, the potential proliferator may feel itself to be the victim of other nations’ judgments and actions, and it may react accordingly—in ways that an objective third party might regard as irrational.\textsuperscript{15} Such reasoning may also lie behind some discussion of the "Islamic bomb."\textsuperscript{16}

\textit{Summary of Factors}

Figure 1 summarizes the nonpsychological factors in a hierarchical structure.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{leaders_objectives_relevant_to_proliferation.png}
\caption{Leaders' Objectives Relevant to Proliferation}
\end{figure}

\textsuperscript{14}See also Post (1993), which discusses psychopathological behavior from a related but different perspective. Post has long experience analyzing the behavior of foreign leaders.

\textsuperscript{15}This behavior is, of course, quite common in ordinary interpersonal relations. Countering such judgmentalism is often a major theme of psychotherapy.

\textsuperscript{16}Relevant here is Gurr’s work on relative deprivation (Gurr, 1970).
Figure 2 provides an illustrative “cognitive map” for a potential proliferator. The thickness of arrows suggests the relative salience of the factors. Since Figure 2 is “generic,” it is, of course, not equally valid for all the various countries at issue. Nevertheless, we believe it is more usually true than not that the principal factor tends to be deterring regional enemies. Figure 3 is an alternative depiction of a cognitive map, this one specific to states bordering on and worried about Russia. We had in mind Iran and Ukraine (although Ukraine is presumably not concerned about U.S. “meddling” in the region).

Table 1 arrays a number of proliferating states and states that have either considered proliferation or backed away from it. It then indicates our subjective assessment of their apparent reasons for favoring the acquisition of nuclear weapons. A “double bullet” (★★) means that the factor indicated was or is both relatively important and very strong in an absolute sense (as when a nation is seriously concerned about invasion by a neighbor). A question mark indicates that we are highly uncertain or that the assessment would be speculative. Note that we believe psychological “errors” of judgment have played only a small role in the decisions. Others might take a different perspective and it is sometimes difficult to distinguish between “reasonable but flawed” strategic judgments and judgments flawed by cognitive errors (e.g., the error of ignoring risks thought to be below some perceived level of significance).
Generating Policy Options

For the purposes of this initial, exploratory work, we considered that a "generic" potential or current proliferator would have six primary policy options bearing directly on the proliferation decision itself. Those are as follows:

1. To forgo nuclear weapons and other WMD.
2. To forgo nuclear weapons, but to acquire other WMD.
3. To sign the Nonproliferation Treaty (NPT), but to continue a modest, more-or-less covert nuclear weapon program, thereby hedging against the future and providing, as a minimum, some degree of "existential deterrence."
4. To acquire nuclear weapons.
5. To agree to forgo nuclear weapons conditionally—i.e., if and only if certain conditions are met—but with no intention of actually complying or of establishing achievable conditions.
6. To agree to forgo nuclear weapons conditionally—i.e., if and only if certain conditions are met—with full intention of compliance if the conditions are met, and with the conditions being within the realm of possibility.

For a proliferator or would-be proliferator to choose Option 1 would be a victory for nonproliferation. So also would Option 6 be a potential victory—i.e., it would be a success if the conditions were reasonable and achievable. Option 2 is in a gray area. We believe, as do many other observers, that biological weapons are a serious threat in the years ahead because they are inexpensively obtainable and have the capability for mass destruction. A variety of delivery means are also plausible. However, biological weapons may be even more loathed than nuclear weapons, and do not currently connote features of strength, maturity, competence, great-power status, or other attributes that may be sought by proliferators. Chemical weapons are less loathed and perhaps more acceptable, but are not really in the mass-destruction category from the viewpoint of destructive potential.

Option 3 has been a favorite over the years, because by agreeing to the NPT nations are often treated as respectable, even though there are suspicions (or near certainty) about their having nuclear programs. Option 4 is an open decision to acquire nuclear weapons. Option 5 is a variant in which the nation pretends to be willing to negotiate them away. Again, Option 6 is one in which the nation is truly willing to negotiate them away, but only under conditions that are rather stressful (e.g., conditions greatly improving the nation’s security).

**Generating Net Assessments**

The next step in model development is to compose decision tables, one each for the incrementalist Model One and the more ambitious, optimistic, and ideological (and sometimes visionary) Model Two. Each table shows an evaluation of the various options according to the subjective assessments of the most-likely, worst-case, and best-case outcomes, characterized as very bad, bad, marginal, good, or very good. The last column then shows a “net assessment” obtained using the reasoning models we have described elsewhere (Davis and Arquilla, 1991a, Appendix).
Table 1
Proliferators and Their Apparent Reasons

<table>
<thead>
<tr>
<th>Country</th>
<th>Improving war fighting capability</th>
<th>Balancing regional power</th>
<th>Deterring intervention by major power</th>
<th>Facilitation of power</th>
<th>Increasing prestige and status</th>
<th>Preserving power of regime</th>
<th>Psychological errors of judgment</th>
<th>Organizational influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>* *</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
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<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td>?</td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N. Korea</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S. Africa</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td>? [a]</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td></td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>Ukraine</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td></td>
<td></td>
<td>*</td>
<td></td>
<td>? [a]</td>
</tr>
</tbody>
</table>

[a] When it was leaning toward maintaining nuclear weapons, it can be argued that judgments were affected by standard cognitive errors.
Tables 2 and 3 illustrate the methodology notionally for North Korea, which we assume in both cases views the current situation and trends as very bad (deteriorating economy, loss of its superpower ally, economic strength of South Korea, adverse military trends, perceived ideological failure of communism, and increased social discontent as more information becomes available regarding the developed world). That is, we assume North Korea’s decisionmakers are in the “domain of losses,” to use the terminology of prospect theory. There is, however, great uncertainty about whether North Korea’s decisionmaking is dominated by a Model-One style “pragmatism” and “incrementalism” or by a stronger, more ambitious, optimistic, strident, and even ideological Model-Two reasoning. Indeed, other models should be considered. For the limited purposes of this report, however, Tables 2 and 3 suffice.

Since this report is not about any specific proliferator such as North Korea, we shall not explain in detail our reasoning on the values ascribed to the various columns of Tables 2 and 3. Let us instead merely note some highlights. First, in Table 2, note that Option 5 or Option 6 is preferred. Let us discuss the assessment of Option 6 first. In this scenario North Korea would truly “cash in its bargaining chip” (Option 6) if the right conditions were achieved. Why? Because, in our hypothesized assessment, the “pragmatic” North Korea sees the most likely outcome as at least “marginal” because it believes that South Korea, Japan, the United States, and other countries will indeed “make good” on promises of economic aid, no invasion of the North, and allowing North Korea to participate in world affairs. Indeed, Model One would see a possible “best case” outcome as rather good. It could imagine that the transition would take place over a period of years and that the current leaders might slide into retirement and a reasonably honored place in history. Further, some of the better features of North Korea might be preserved, if only collapse could be averted. Note that this particular Model One for North Korea is not very ambitious. It might correspond, for example, to the reasoning of leaders who no longer have much fire, zeal, or ideology, but who surely care about their personal survival and about having the North treated “reasonably” while change occurs.

While Model One would find Option 6 marginally attractive, Option 5 might be more or less attractive depending on what this pragmatic, incrementalist, and rather pessimistic model of North Korea believes about the most-likely outcome of promising everything, but cheating. If it is sufficiently contemptuous of South Korea, the United States, Japan, and the United Nations—a function of those nations’ behavior, not merely North Korea’s psychology—it might well conclude that all it needs to do to collect various concessions and aid packages is to improve the “cosmetics” of the situation by forgoing highly visible development,
retaining a modest “covert” program and, in the process, retaining the security value of having some potential nuclear-weapons capability. Our own judgment as of May, 1994 is that a Model One North Korea would have good cause for such a view.

Table 2
Illustrative Options-Comparison Table for Model One Reasoner
(Primary objectives: regime maintenance and bargaining)

<table>
<thead>
<tr>
<th>Option</th>
<th>Most Likely Outcome</th>
<th>Worst-Case Outcome</th>
<th>Best-Case Outcome</th>
<th>Net Assessment of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forgo nuclear weapons and WMD</td>
<td>Very Bad</td>
<td>Very Bad</td>
<td>Bad</td>
<td>Very Bad</td>
</tr>
<tr>
<td>2. Forgo nuclear weapons but develop other WMD</td>
<td>Very Bad</td>
<td>Very Bad</td>
<td>Marginal</td>
<td>Very Bad</td>
</tr>
<tr>
<td>3. Sign NPT but continue modest nuclear program</td>
<td>Bad</td>
<td>Very Bad</td>
<td>Marginal</td>
<td>Bad</td>
</tr>
<tr>
<td>4. Acquire nuclear weapons</td>
<td>Bad</td>
<td>Very Bad</td>
<td>Marginal</td>
<td>Bad</td>
</tr>
<tr>
<td>5. Agree to forgo nuclear weapons if and only if conditions are met, but cheat (covert acquisition)</td>
<td>Bad OR Good [a]</td>
<td>Very Bad</td>
<td>Good</td>
<td>Bad OR Good [a]</td>
</tr>
<tr>
<td>6. Agree to forgo nuclear weapons if and only if conditions are met</td>
<td>Marginal</td>
<td>Bad</td>
<td>Good</td>
<td>Marginal</td>
</tr>
</tbody>
</table>

[a] Assessment depends on judgments about the will of South Korea, the United States, Japan, and the UN. In offering concessions and aid packages, will they demand true denuclearization and meaningful inspections, or will they settle for improved cosmetics?

Table 3 draws a partly contrasting view. It corresponds to a “Model Two” North Korea, which still has at least modestly ambitious long-term objectives and tends to see things optimistically. This is the model that would apply if North Korea’s leaders still believe that North Korea may be viable in the long run as an independent state with its own ideology and approach. It would also apply to a North Korea that was unwilling to give up its traditional ambitions and would rather run the risks of fighting another war (which might succeed or, more likely, produce a better negotiating position) than to give up or disintegrate.

Here we conclude that Option 6 would not be attractive relative to other options. Model Two reasoning tends to be darkly pessimistic about the motives and likely behavior of its enemies. Thus, Model Two of North Korea assumes that regardless of promises, South Korea, the United States, and Japan (and quite possibly China and Russia) will continue to squeeze and destroy the North if they have the opportunity—if not by invasion, then by economic and political
means. Economic aid, for example, would be promised but not provided; further, with any opening of the North, these states would increase subversive activities to overthrow the North’s regime. A Model-Two reasoner would conclude that, “Of course, this would happen!”

On the other hand, according to the reasoning we hypothesize for this type of reasoner, it is plausible that North Korea can extract a fair number of concessions, including economic aid, so long as it strings its enemies along while retaining nuclear weapons (or the appearance of having them). Its enemies, after all, are stupid and unable to act militarily. They have consistently been willing to accept half-truths and to give in rather than up the ante further. In particular, South Korea simply does not want war, especially with Seoul so close to the border. It follows, then, that Option 5 may seem to be the most attractive to this type of reasoner.

Interestingly, then, both Models One and Two would find the promise-but-cheat option attractive unless its adversaries showed a great deal of will and established very stringent demands. In that case, Model One would capitulate for the sake of cashing in its nuclear-program chips for something valuable, but Model Two would not.

Table 3
Illustrative Options-Comparison Table for Model Two Reasoner
(Objectives: long-term survival and reasonable prosperity; place in history; eventual unification preserving power of North)

<table>
<thead>
<tr>
<th>Option</th>
<th>Most Likely Outcome</th>
<th>Worst-Case Outcome</th>
<th>Best-Case Outcome</th>
<th>Net Assessment of Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forgo nuclear weapons and WMD</td>
<td>Very Bad</td>
<td>Very Bad</td>
<td>Bad</td>
<td>Very Bad</td>
</tr>
<tr>
<td>2. Forgo nuclear weapons but develop other WMD</td>
<td>Bad</td>
<td>Very Bad</td>
<td>Marginal</td>
<td>Bad</td>
</tr>
<tr>
<td>3. Sign NPT but continue modest nuclear program</td>
<td>Marginal</td>
<td>Very Bad</td>
<td>Good</td>
<td>Marginal</td>
</tr>
<tr>
<td>4. Acquire nuclear weapons</td>
<td>Marginal</td>
<td>Very Bad</td>
<td>Good</td>
<td>Marginal</td>
</tr>
<tr>
<td>5. Agree to forgo nuclear weapons if and only if conditions are met, but cheat (covert acquisition)</td>
<td>Good</td>
<td>Very Bad</td>
<td>Good</td>
<td>Good</td>
</tr>
<tr>
<td>6. Agree to forgo nuclear weapons if and only if conditions are met</td>
<td>Bad</td>
<td>Very Bad</td>
<td>Good</td>
<td>Marginal</td>
</tr>
</tbody>
</table>
Let us emphasize again that we are merely illustrating methodology here and have not conducted a detailed study of North Korea’s leaders or their reasoning (see, however, Khalilzad, Davis, and Shulsky, 1993). Our point is that it can be useful to lay out the potential reasoning of states in this way so as to better understand what to expect from them and how to influence them.
3. Implications for Counterproliferation Policy

Emphasizing the “Demand Side” and Understanding Proliferators’ Reasoning

The premise of this work has been that greater attention needs to be focused on understanding and dealing with the motivations behind proliferation. For too many years the United States and other bona fide members of the nonproliferation club have come across consistently as sanctimonious and hypocritical. Most recently, for example (in early to mid-1993), the United States enraged the citizens of Ukraine with statements about proliferation that indicated its lack of appreciation for Ukraine’s legitimate security problems.\(^{17}\) This policy was subsequently changed, but it illustrates what many would regard as a consistent pattern of “blaming” or “threatening” rather than persuading.

We also believe that it is important to consider the likely and possible reasoning of proliferators when dealing with states such as North Korea and Iraq, arguably the world’s worst actors insofar as U.S. interests are concerned. Reasoning matters here because we need to be realistic about what strategies will “work” and what “working” can plausibly mean.\(^{18}\)

The Case of North Korea

Let us again call on the North Korean example to illustrate our points. Throughout 1993 there was considerable emphasis placed on counterproliferation efforts against North Korea. President Clinton even made a strong and widely publicized speech on 7 November 1993 to the effect that we could not permit North Korea to develop nuclear weapons. During that time, however, there was remarkably little serious discussion within the United States

\(^{17}\)One of us (Davis) encountered this while giving a lecture series in Kiev in May, 1993, a period during which nuclear issues were being hotly debated within Ukraine.

\(^{18}\)Although not stressed in this report, which focuses on nuclear proliferation, the issues of biological and chemical-weapon proliferation are also important. For an illustration of how they may arise in the reasoning of Cuba’s Fidel Castro, see Arquilla (1993).
government about what could be achieved with the various diplomatic and economic tools available. As noted in a RAND paper circulated among policymakers as a draft in the summer and fall of 1993 (Khalilzad, Davis, and Shulsky, 1993), it seemed very unlikely that the various “carrots” being offered up, or that could potentially be offered up, would convince the North Korean government to give up nuclear weapons. Why? Because, ultimately, the paper’s authors believed that a Model Two (or a cynical Model One) was a much better description of North Korean reasoning than a Model One impressed by the will of its adversaries. They were not certain, of course, but they were pessimistic. They concluded that it would become necessary to consider strong coercive measures, even including the use of force. Although they were not optimistic about those being either acceptable to allies or successful, they predicted that they would at least become serious options because the future of diplomacy and weak threats looked bleak. This turned out to be correct. Indeed, the United States has concluded that North Korea may already have nuclear weapons, but it is difficult to achieve any consensus on what to do. The potential of war is taken far more seriously than previously.

The Case of the Persian Gulf Region

After the Korean peninsula, the Persian Gulf region generates the next-highest level of concern regarding proliferation of WMD. Currently, a UN preventive regime is functioning in Iraq, and a nascent one may be coalescing around Iran. Both of these states appear to have motives for proliferation that are consistent with Wolf Mendl’s (1969) notion of the need to deter both one’s equals and one’s “betters.” That is, Iran and Iraq confront each other in a regional rivalry that fosters their mutual “security dilemmas,” and both also seek to generate sufficient power to delimit American influence or intervention capability.

With regard to alternative images of leadership, Saddam Hussein of Iraq appears, for the present, to have adopted the common Model One behavior of regime maintenance, even if he still secretly harbors grander aims. Thus, he seems willing to weaken Iraqi sovereignty so long as his own ouster is not demanded. Indeed, his acquiescence to long-term inspections by the International Atomic Energy Agency (IAEA) appears to be tied to the UN coalition’s implicit forbearance on the issue of his continuance in power.

Iran, on the other hand, is recovering from the severe costs of its long war with Iraq, and appears to be looking beyond merely the goal of the Islamic revolutionary regime’s survival to a broader set of aims built around regional hegemony, the extension of influence to former Soviet Central Asia, and the
spread of militant Shiism. Thus, while Iran may behave pragmatically, it is also possible that it will operate in a manner more consistent with a visionary, ideological Model Two, depending on how the power struggle settles out, and other factors.\textsuperscript{19}

This brief analytic synopsis suggests that, while Iraq will remain pliant and controllable for some time, Iran will not. Therefore, it is incumbent upon U.S. leaders to focus upon the means by which Iran may be dissuaded from pursuing the acquisition of WMD.

\textit{Summary Observations}

The foregoing cases, which comprise the most serious counterproliferation dilemmas for the United States today, have in common a very strong "demand" for WMD. The constraints upon Saddam Hussein’s aims, an outgrowth of his recent defeat in the war for Kuwait, make the situation in Iraq controllable with modest vigilance. This is not true for either the Iranian or North Korean cases, in which their grander aims appear to require the acquisition of a WMD capability. In the case of North Korea, however, some evidence exists to suggest that regime maintenance is the key objective, holding out the possibility for a negotiated solution to the crisis. Regardless of the apparent image of proliferation that is appropriate, though, prudent U.S. strategy must revolve around the possibility that these and other proliferators may shift from one model of behavior to the other (or to yet a third). Thus, strategy should be guided by what would be effective against each, or a combination. Further, strategy may need to be adaptive.

\textit{Moving Toward Strategy}

Against this background how might the United States develop strategies with some reasonable prospect of success in deterring or reversing proliferation—either through coercion, persuasion, or other appeals to self-interest?

While the topic is far too complex to be dealt with adequately here or in the small project on which we are reporting, some ideas and principles emerge from the discussion of decisionmaking. The essential concepts fall into three groups:

\textsuperscript{19}See Fuller (1991) for discussion of Iran’s ambitions. See Schahgaldian (1994) for discussion of the complex political dynamics within Iran between, for example, relatively more radical Islamic fundamentalists and the so-called "moderates" such as President Rafsanjani.
- **Security Related.** Seek to make proliferation appear less attractive or less necessary for purposes of improving nations' security by (a) addressing their security issues and (b) making WMD less attractive as an option.

- **Organization Related.** Identify and deal with possible "organizational" phenomena fostering proliferation activities within the nations of interest.

- **Psychology Related.** Pinpoint and deal with possible psychological errors of reasoning.

None of these ideas is truly new, but the framework of examining the potential reasoning of proliferators can be helpful in organizing discussion and identifying strategies that are more or less likely to succeed. Let us now discuss each of them in somewhat more detail.

**Security Considerations**

The key idea here is that the United States wants the leaders of proliferant states to perceive that WMD won't solve their security dilemmas and may create many and severe problems. To put it differently, we should want the cognitive maps of proliferant states to look more like Figure 4 than like Figures 2 or 3. As implications of this objective, we would want leaders in proliferant states to note the following:

- Possessing WMD tends to make enemies of one's neighbors.

- Possessing WMD creates distinct first-strike instabilities, especially between nations that hate and distrust each other, and especially when the nuclear systems are not robustly survivable (as is the case, probably, with India, Pakistan, and Ukraine).

- Proliferation will worsen relations with the major nations of the world, which in turn will worsen economic development. It might even lead to political and economic sanctions.

- Instead of allowing it to become "part of the club," proliferation will tend to turn the nation and its leaders into pariahs. Instead of being regarded as among the "honorable" and "forward-looking" states, the nation will be viewed as troublemaking, backward-looking, and even reactionary.

- Instead of reducing the costs of defense, nuclear programs will raise the costs directly (the costs of the programs themselves) and will not lead to reduced conventional costs, because nuclear weapons are ultimately not usable except in the most extreme circumstances, thus necessitating continued conventional military strength anyway.
To be sure, some of this is "obvious," but the framework of trying to create a particular cognitive map provides a systematic checklist with psychological saliency. It also motivates a different way of evaluating certain policy options that the United States has now. For example:

- Even if the United States cannot disarm North Korea of its nuclear weapons, or even stop its nuclear program, it and its allies can change world perceptions about the acceptability and consequences of proliferation by punishing North Korea diplomatically, economically, and perhaps militarily. "Success" need not be destruction of North Korea's weapons or the bringing of North Korea to its knees, but rather the clear demonstration that proliferation does not pay—at least for "bad actors."20

- Similarly, even if the activities of the IAEA in Iraq are painful and less than completely successful, they demonstrate an international commitment and reinforce the downside to proliferation—in this case, continued violation of national sovereignty. So long as Saddam Hussein is not perceived as being "successful," these measures should be valuable.

- In dealing with countries such as Ukraine, it is essential to take their security concerns seriously and to do all that can be done to assist them, albeit without developing firm security commitments to every weak nation around the periphery of a strong state. There are other possibilities, which include (a) brokering better diplomatic relationships with their traditional enemies; (b) forging cooperative security arrangements; (c) assisting in development of inexpensive defense systems adequate to provide a level of deterrence; (d) highlighting the security dangers created by attempting to maintain nuclear capabilities (e.g., making oneself a likely target of preemptive attacks in a crisis).21

- If the opportunity presents itself, there may be substantial value in encouraging the community of nations to take military measures against a proliferating "bad actor" such as North Korea. Encouraging the image that "bad-actor proliferators" may get attacked in preventive-war or punishment-related contexts would be quite consistent with the aims of counterproliferation.

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20 We mention "bad actors" here because it is evident that proliferation policies are now, long have been, and will continue to be, highly differentiated. It is not just Israel's political influence that causes U.S. policy to be different for Israel's proliferation than for that of North Korea. The situations are objectively quite different.

21 A major theme of a new RAND book on defense planning is the challenge of deterring aggression against weak states that are not directly "vital" interests of the United States. See Davis (1994a) and Kelley, Fox, and Wilson (1994).
Organizational Factors

It is notoriously difficult for one nation to influence favorably the internal decision processes of another nation. Broadly speaking, however, the United States might

- encourage balanced civil-military relations\(^{22}\)
- seek ways to undercut beliefs that proliferation would enhance regime stability or the personal prospects of faction leaders (e.g., perhaps with

\(^{22}\)The Argentina-Brazil process of backing away from WMD is a good example of how democratization and improved civil-military relations can tone down regional rivalries that spur proliferation (Spector, 1992).
messages such as "The United States will hold you personally responsible if the program goes ahead, and we have a long memory")

- point out to leaders of opposing factions, and perhaps publicize, instances in which organizational compromises are illogically generating a proliferation that none of the parties actually seeks.

On the last item, we have in mind a situation in which, for example, one group prefers to have no WMD, another group prefers to have a survivable and usable nuclear capability that would provide a substantial deterrent to conventional invasion, and the "compromise" is to have a nuclear capability that is in fact highly vulnerable and ineffective. Such an outcome would be understandable organizationally, but would be paradoxical logically, because both parties might well prefer no nuclear capability to an ineffective and dangerous one.

Intuitively, we believe that much more should be done to understand and potentially influence proliferation-related organizational factors, but we were unable to look deeply into the matter in the current study.

**Psychological Considerations**

As discussed earlier, we are reluctant to claim that proliferation decisions to date have been strongly influenced by cognitive "errors." That, however, may be in part a matter of semantics. In any case, we can use the sources of cognitive errors as a checklist for things to consider in developing U.S. foreign and defense policies. In particular:

- **Prospect theory.** Improve nation's sense of its future well-being and perceived "virtue" if it avoids nuclear weapons. To the extent feasible, play up the "courage" and "leadership" of nations forgoing nuclear weapons, and treat their leaders with public respect. Play up the security-enhancing aspects of nonproliferation where that is credible. Seek to reduce inappropriate concerns about security that may be "compelling" drastic action such as proliferation.\(^\text{23}\)

- **Availability bias.** Greatly increase awareness of nation's elites and publics regarding the downside of proliferation.

- **Overconfidence.** Increase awareness of how the arguments for proliferation are weak. The nation may be made a pariah; there may be accidents; there

\(^{23}\text{In many cases, security concerns are legitimate, but in other cases they can be more nearly paranoid. For example, North Korean leaders may fear (or may in the past have feared) invasion by South Korea and the United States.}\)
could be “preemptive” or preventive first strikes by enemies; the weapons might not be very survivable (from attacks of special forces if not from missiles or bombers).

- **Thresholding.** Similar to above, except also address potential misconceptions about threats to nation’s security.

- **Dangerous leaders** (*narcissism, hubris-nemesis complex, etc.*). Deride and delegitimize such leaders through various communications media. Undercut the common notion that the leader is “effective, although not nice.” Encourage democratization.

- **Judgmentalism.** In dealing with more-responsible states, rework all U.S. and allied rhetoric to eliminate depictions of the potential proliferator nation that are threatening, demeaning, or insulting. Take nation’s security concerns seriously. Argue on basis of nation’s self-interest, not interest of United States.

### Countering Proliferation: A Differentiated Approach

Not all proliferators are “created equal.” Nor should they be treated as if they were, even though the U.S. goal of preventing the spread of WMD applies to all the various types. How, then, should the United States approach this problem of coping with a mixture of types of proliferator? Or differing levels of importance with relation to core U.S. interests? We contend that a “three-tiered” approach to categorizing proliferators will assist in strategy selection, particularly once the denizens of each tier have been “modeled.”

Those states that have not yet acquired WMD fall into three classes. First, there are those whose acquisition of WMD poses the gravest threats to U.S. security interests. At this level, we find North Korea, Iran, Iraq, Libya, and Cuba. Next are the proliferators whose WMD capabilities would displease or discomfit the United States, though they would probably not threaten U.S. national security directly. Japan and Germany are the prototypical members of this tier.¹⁴ Finally, there may be some cases in which proliferation would have little negative effect on U.S. interests and, indeed, might foster an improved security environment in some peripheral regions. Pakistan provides the best example of this third tier, as it has pressing strategic problems but lies outside the realm of explicit U.S. security guarantees. Thus, in this last case, improved Pakistani capabilities take

¹⁴ This, of course, is a controversial and subtle issue. If Japan or Germany gained nuclear weapons, it is very unlikely that they would then threaten the United States, but there would probably be a long string of consequences strategically, many of which would not be in U.S. interests.
the place of an “external balance of power” that might be provided by the United States.

In the first and most dangerous tier, it is crucial to understand correctly the potential reasoning of the relevant leaders. The previous discussion of the Iraqi case demonstrated that even a first-tier threat can be dealt with using “carrots” mixed in with carefully calibrated “sticks.” Of course, this finding rests on the assumption that, for the near-term future, Saddam Hussein is likely to remain preoccupied with regime maintenance chores, keeping him in the Model One mode. The same cannot be said of Kim Il Sung, who may behave like either a Model One or Two, and may move from one to the other in varying contexts.

The possibility of confronting a Model Two leader in the first tier implies a need to diminish his best-case estimates of the outcomes of policy options. It is not sufficient simply to employ a “bigger stick,” unless such a measure serves to reduce the potential best-case outcome of one’s opponent. This is so because a Model Two leader tends to discount worst-case estimates of potential outcomes. He cannot simply or easily be bullied. In practical terms, how can one go about reducing Model Two’s potential “upsides”? Details will vary across cases; but, in general, the most effective measures would concentrate upon limiting this opponent’s ability to engage in faits accomplis, or to generate other quick gains. On the Korean peninsula, for example, this might result in shifting the local balance of forces (with ground troops or air power) so that the prospects for the success of even limited conventional attacks are diminished considerably. Another measure would include the exemplary use of preventive force, to signal resolve and, in the worst case, to prevent proliferation activities from continuing.

In the second tier, where the relevant actors are more likely to be of the Model One variety, and where political and other practical limitations require the application of dissuasive diplomacy rather than coercive means, the most effective approach lies in increasing the potential proliferator’s downside risks. In this realm, the “sticks,” when used, would consist primarily of economic measures (sanctions, tariffs, and other non-tariff barriers to trade, for example).

The third tier, which engages American interests only marginally, may nevertheless require close monitoring. In this regard, analyzing these states by means of constructing alternate models of their leaders should provide an early warning of developments that might, if crisis escalation were to occur, prove inimical to U.S. interests. For example, in the Indo-Pakistani case, rising tensions between the two rivals might have the potential for escalating from crisis to inadvertent, or deliberate, nuclear use. If one understood that both actors were Model One–type decisionmakers, then it might be possible for a third party to
mediate in a dispute, or at least to point out the very high worst-case risks of conflict for both parties. Apparently, an approach of this sort was taken by the Gates mission during the most recent serious Indo-Pakistani crisis (Bhimaya, 1994), and it succeeded in defusing the crisis. This sort of undertaking, however, could require much greater efforts if one or both of the disputants were of the Model Two variety. In these latter types of cases, diplomatic mediation would have to revolve around reducing the expected best-case outcome that the Model Two side(s) could expect.
4. Conclusions

Findings

Decision modeling generates insights into the hitherto very limited view of the "demand side" for proliferation. The analysis shows that, for many states, proliferation of WMD will be extremely attractive, thus making efforts to prevent the spread of WMD problematic.

The decision-modeling methodology points out that, depending upon the relevant image of the proliferator, the appropriate solution will vary from increasing the worst-case risks to reducing best-case potential. Ironically, it is the seemingly less threatening Model One decisionmaker who is more likely to respond to "tough" measures aimed at increasing downside risks. Model Two optimists and visionaries will be resistant to pure threats unless they are accompanied by measures or events that also reduce the perceived desirability of his best-case outcome (for the action we seek to deter).

Recommendations

U.S. policy must become much clearer, in some instances get much tougher, and in still other instances be less hypocritically or sanctimoniously expressed. Establishing a three-tiered approach to dealing with proliferators, and providing insights through decision modeling, should go a long way toward improving the coherence of U.S. counterproliferation policy. At the policy level, this suggests the need for explicit adoption of the multiple modeling evaluative methodology for understanding the reasoning of proliferators. It also suggests the need to begin training American intelligence analysts and policymakers (civil and military) in decision modeling.

Future Research

At this point, the theory of decision modeling by alternative imaging must be tested experimentally. This could take many forms, though the best prospects for fruitful research likely lie in gaming and simulation of proliferation crisis and noncrisis scenarios, and in employing professional analysts, as well as
government and military officials as subjects. Theoretical work is also needed to enrich discussion of organizational phenomena, because those could sometimes be significant in influencing strategy.

Although more research is needed, we also believe that the methodology is already useful enough, and understood well enough, to be applied in a practical way within government organizations concerned both with understanding and describing the reasoning of potential proliferators, and with developing concrete strategies—some of them long-term—for influencing those nations. Despite its limitations, the methodology has several major advantages: (a) it can free analysis from the straitjacket of best-estimate thinking; (b) it provides a framework helpful in developing comprehensive strategies; and (c) it can be very useful in group discussions.
Appendix

PARTICIPANTS IN RAND WORKSHOP ON DECISIONMAKING OF PROLIFERATORS, 23–24 MARCH, 1993

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