Nuclear Coexistence

Rethinking U.S. Policy to Promote Stability in an Era of Proliferation

William C. Martel
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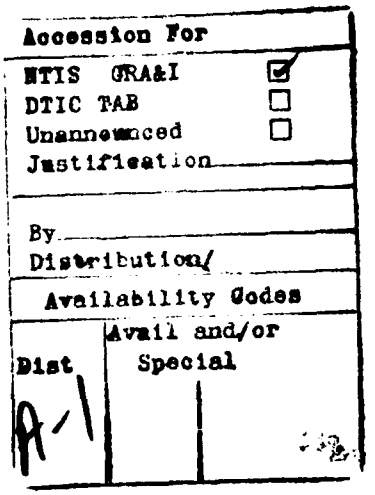

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Preface

This study seeks to address the emerging incongruence between the proliferation of nuclear weapons and the U.S. policy for managing this process. American society and its political leadership must accept the need to adapt its policy to the rapidly-changing circumstances in nuclear proliferation.

For at least two decades, the process of nuclear proliferation continued unabated, with the emergence of new nuclear powers, including India, Israel, and Pakistan. Since 1992, deep concerns about the emergence of North Korea as a nuclear power have provoked a protracted diplomatic crisis between the South Korean-United States alliance and North Korea. Further, the dissolution of the Soviet Union created three additional "instant" nuclear powers — Ukraine, Kazakhstan, and Belarus. Kazakhstan and Belarus[1] agreed to eliminate their nuclear weapons and accede to the Nuclear Non-Proliferation Treaty (NPT) as non-weapon states. Ukraine, however, has thus far steadfastly refused to relinquish its nuclear forces. It fears Russian revanchism and the nationalistic extremism reflected in the results of the parliamentary elections held in December 1993.

The United States increasingly finds itself in the midst of diplomatic crises over the proliferation of nuclear weapons into the hands of increasing numbers of states, both friendly and unfriendly. The problem is that U.S. policy is caught in a vise of historical origins between the desire to oppose nuclear proliferation and the desire to increase the effectiveness of non-proliferation efforts in the face of highly-publicized failures.[2]

Steadfast opposition to nuclear proliferation is a remnant of the Cold War when the prospect of a multi-nuclear world represented a direct threat to peace and stability. For decades, the United States marshaled the resources of the international community to decelerate the process of nuclear proliferation. There were efforts by the nuclear-armed powers of the United Nations Security Council to limit the spread of nuclear weapons and thus the number of nuclear-armed states. While those efforts were successful initially, the policy that was codified in the NPT is in peril today.

The reason for concern is that a host of political, strategic, and technological factors have placed nuclear weapons within the reach of many states. There is a fervent desire in some states to possess nuclear weapons, as manifested by the efforts of India, Iran, Iraq, Israel, North Korea, Pakistan, and South Africa. For these states, the possession of nuclear weapons comes only after great political and economic costs. Other states, such as Ukraine, are motivated by powerful incentives to retain nuclear weapons, despite the imposition of considerable diplomatic and economic pressure by Russia and the United States. Why, we ask, do these states strive to possess nuclear weapons? Do they feel the same pressure that the United States felt to have nuclear weapons for security? What should be the nature of U.S. policy for managing nuclear proliferation in light of these conditions?

This study addresses the need to redefine U.S. policy to fit the new dynamic of nuclear proliferation that will dominate politics throughout the 1990s and into the twenty-first century. The time has come for the United States to construct an international order within which it is possible for nuclear-armed states to coexist peacefully with one another. The challenge for the United States in coordination with other states and institutions is to shape a framework for policy that encourages the peaceful coexistence among the possessors of nuclear weapons. If the ideal of nuclear coexistence is to be achieved, where states live with one another in peace despite the existence of nuclear weapons, the United States has an obligation to develop policies that establish a basis for stable and orderly coexistence. The United States must ensure that its nuclear proliferation policy balances the necessities of coexistence with managing nuclear weapons in a safe and secure fashion. Simple opposition to nuclear proliferation is no longer a sufficient basis for U.S. policy.

While there are practical as well as theoretical steps to be taken, the first step is for the United States to acknowledge that there are stabilizing and destabilizing cases of nuclear proliferation. With that step it will be possible to understand that coexistence among all nuclear-armed states is more than an aspiration. This objective imposes obligations on all states. For the

United States and other members of the nuclear club, it means that the focus has to be on the twin objectives of averting destabilizing cases of proliferation, while assisting states whose nuclear arsenals have a stabilizing influence to manage those forces with caution and prudence. For states that want to possess nuclear weapons, it means that their policies and actions must reflect the highest levels of caution and prudence. The realities of nuclear coexistence cannot be achieved unless all nuclear states ascribe and adhere to the highest standards of state behavior.

This study describes the problems posed by nuclear proliferation, and policy approaches to managing them, in five parts.

Part I describes the anatomy of the problem of nuclear proliferation in the current international climate. From this analysis emerge several critical observations. First, the process of nuclear proliferation is driven by internal and external forces with a momentum of their own that is largely beyond the control of the United States. Those forces are so powerful that they exclude the possibility of preventing nuclear proliferation through declaratory policies and international regulatory regimes. The availability of critical nuclear materials and technologies, nuclear physicists and scientists, and design engineers gives states the ability to construct nuclear weapons, even in the face of determined opposition by the international community.

Second, these conditions limit the United States to three fundamental choices. The first choice is to maintain the current policy of attempting to slow or stop the proliferation of nuclear weapons. The continuing failure to dissuade Ukraine and North Korea, however, suggest that this policy is less tenable than it once was. The second choice is to adopt the view that stopping proliferation is a futile exercise. Yet, that policy is untenable because it means that the quest for a reasonably stable order with nuclear weapons is no longer a practical option. The third choice is to manage the stabilizing cases of proliferation to create reasonably safe and secure forces, while simultaneously dissuading states from acquiring nuclear weapons and seeking to avert proliferation in the destabilizing cases. This study is devoted to the third choice of establishing conditions of stable coexistence among nuclear states.

Part II examines the incentives and disincentives that shape decisions about nuclear proliferation. States base their decisions about nuclear ownership on imprecisely defined incentives and disincentives that include emotions, the desire for prestige, as well as societal and cultural norms. This section focuses on the forces that influence national decisions about nuclear ownership to broaden discourse in the United States about the legitimacy of motivations to possess nuclear weapons. Without a clear understanding and acceptance of the incentives and disincentives to nuclear proliferation, it is more difficult to shape an effective policy for managing the spread of nuclear weapons. The problem with current nuclear non-proliferation policy is the assumption that only the current nuclear-weapons states have justifiable reasons for possessing nuclear weapons, that decisions to possess nuclear weapons reflect a flawed understanding of nuclear realities, and that nuclear proliferation undermines international security. It is important to emphasize that, while it is not always in the U.S. interest to see the spread of nuclear weapons, there are instances of nuclear proliferation that do not threaten U.S. interests. Further, the United States has an interest in showing states the risks inherent in nuclear ownership, and providing assistance in assuring the safety and security of existing nuclear arsenals. These are the elements of a comprehensive policy for nuclear proliferation for the remainder of the 1990s and the twenty-first century.

Part III examines four cases in which states believe that the possession of nuclear weapons is consistent with their national interest. Three crucial points emerge from the discussions of Ukraine, Pakistan, North Korea, and Iran. First, states make the decision to possess nuclear weapons for rational and prudential reasons, even if their motivations do not accord with the status quo. We outline the competing incentives and disincentives in each case, focusing on the political, military, and economic desiderata that the leadership must consider. Second, states do not make decisions about nuclear ownership lightly, and consequently their leaders are not easily deterred from achieving the objective of nuclear ownership. Third, cases of nuclear proliferation are not automatically destabilizing, but must be evaluated in a systematic fashion. The debate about nuclear proliferation is in need of simplification.

To accomplish this, we outline criteria for judging individual cases of proliferation that takes into account the broader circumstances in the region and the world. Each national decision about nuclear ownership is evaluated on the basis of criteria for judging whether they have stabilizing or destabilizing effects.

Part IV begins from the proposition that the United States must redefine the intellectual foundation of policies for managing nuclear proliferation. At a time when the Clinton Administration has defined nuclear proliferation as a priority for American foreign policy, there are four principles that should guide U.S. policy choices about nuclear proliferation. First, nuclear ownership by any state is an open issue, contingent upon behavior that conforms to international standards. At the same time, the United States needs to reverse discriminatory norms, itself an artifact of cold war thinking and policies, to broaden access to civilian nuclear power and technologies. Second, the United States should seek to reduce the incentives that drive states toward nuclear ownership. U.S. policies and actions must be guided by the objective of diminishing the incentives that drive states to see nuclear weapons as fundamental to their security interests. Third, the United States must employ measures to avert nuclear ownership by states that manifest destabilizing behavior. It no longer is acceptable for the United States to use tough language about the unacceptability of nuclear proliferation without the will to use the commensurate political, economic, and military actions to stop such. Fourth, this less discriminatory policy on nuclear ownership places the emphasis on a state's international conduct and on establishing the security and safety of existing nuclear forces. The United States should take the lead in supporting nuclear states in their efforts to create safe and secure nuclear forces.

The purpose of these principles is to acknowledge that the United States cannot stop all cases of nuclear proliferation, but it can shape when and how proliferation occurs. The United States has an obligation to do what it can to prevent destabilizing proliferation given the perils of nuclear weapons in the wrong hands.

Part V outlines recommendations for actions in three categories that the United States Government should take to redefine its proliferation policy to promote nuclear coexistence and stability.

The first involves conceptual and bureaucratic steps for reforming the policy-making process in within the United States Government. The theme of these recommendations is to tighten the process by giving it a new focus. Second, we focus on the process of managing nuclear proliferation by states whose arsenals contribute to security. Third, we examine steps for focusing U.S. efforts to avert destabilizing cases of nuclear proliferation.

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Notes

1. In October 1993, Belarus' parliamentary leader Stanislav Shushkevich reaffirmed the commitment to make Belarus nuclear free, while he added that it "was difficult to say" how long it would take to return the remaining 63 SS-25 missiles to Russia for which Belarus already has received $59 million in U.S. aid. See Elaine Sciolino, "Christopher Praises Belarus on Nuclear Issue," *New York Times*, October 27, 1993, p. A5. In January 1994, however, Belarus' Parliament removed Shushkevich. See "Belarus Parliament Ousts Its Reformist Chairman," *New York Times*, January 27, 1994, p. A4.

2. To be fair, however, the United States has contributed to nuclear proliferation in various ways. The education of foreign nationals in universities in technology, the sales of dual-use technologies, the easy availability of sophisticated machinery spread our own technical knowledge to various societies. As an open society, the United States is arguably the largest supplier of advanced technical knowledge and materials. See National Academy of Sciences, *Finding Common Ground: U.S. Export Controls in a Changed Global Environment* (Washington, DC: National Academy Press, 1991).

Part I

Proliferation in the Emerging International Order

A. Anatomy of the Problem

The emergence of a new international order is an important phenomenon because it creates a vast expanse of territory unfamiliar to the policymakers and societies schooled in the thinking of the Cold War. The diminishing value of the assumptions that guided American foreign policy during the Cold War creates profound challenges for American policymakers in the realm of nuclear proliferation.[1]

American policymakers in the aftermath of World War II designed a policy for controlling the proliferation of nuclear weapons that was appropriate to the circumstances of the time. This policy, which opposed all proliferation and attempted to establish a universalist norm through the Nuclear Nonproliferation Treaty (NPT), served the nation well at a critical stage in history. It would be wrong to ignore the contribution which this policy made to global stability throughout the cold war period. However, while this approach was successful in the past, circumstances have changed, necessitating a new approach and a more forward-looking policy that reflects the reality of a changing international security environment.

The Clinton Administration, as did its predecessors, correctly identifies nuclear weapons as a significant challenge to the security of the international system. Nuclear conflict still remains a

serious threat to international security. The problem is that neither the Administration nor recent studies have gone far enough toward advancing new concepts for proliferation policy.[2]

Policymakers in the Clinton Administration have declared that nuclear proliferation is one of the cardinal problems for international security for the foreseeable future.[3] President Clinton said that his administration would work hard to stop the proliferation of weapons of mass destruction. In his speech before the U.N. General Assembly in September 1993, President Clinton warned that nuclear weapons "destabilize entire regions," and said that he has made "nonproliferation one of our nation's highest priorities."[4] This position is consistent with themes expressed during the 1992 presidential campaign and with the emphasis on proliferation during the Carter, Reagan, and Bush administrations. This view was reiterated by Secretary of State Warren Christopher in November 1993, when he identified nuclear proliferation as one of the core priorities of the Clinton Administration.[5] In December 1993, Secretary of Defense Les Aspin identified nuclear proliferation as one of "four chief threats to the United States" in a speech that unveiled a new Defense Counter-Proliferation Initiative.[6]

As argued in this study, there are several cardinal assumptions about the role of nuclear weapons in international relations that directly shape U.S. choices for managing the proliferation of nuclear weapons.

Nuclear weapons will be one of the enduring fixtures of international politics for the foreseeable future. As long as states believe that nuclear weapons serve to enhance their security, the permanent role of nuclear weapons is assured. Arguments that the number of nuclear weapons states should be limited reflect the hopes on the part of those who legitimately and fervently wish that nuclear weapons and delivery systems would fade away.[7] The world has lived with fear of nuclear conflict for nearly fifty years, despite the fact that the very first U.N. General Assembly resolution in January 1946 called for the elimination of nuclear weapons. There simply are no political or technological reasons that are likely to eliminate the existence of nuclear weapons.[8]

The second constraint is that nuclear weapons remain arguably the most dangerous weapon in human arsenals, with biological weapons a distant second on the scale of threats to societies.[9] Nothing so captures the human imagination as the vivid specter of devastation wrought by nuclear weapons. The nuclear accident at Chernobyl reemphasized the devastation inherent in the destructive power of nuclear technologies.

Third, the experience of the last two decades provides incontestable evidence that the process of nuclear proliferation continues.[10] Despite the best efforts of the United States and the international community to impede proliferation,[11] several states have developed nuclear weapons and more are close behind.[12] It is increasingly evident that there is very little states can do to stop, much less reverse, this process, although it can be slowed considerably and denied to a nucleus of states.[13]

Fourth, the United States must ensure that its policy fits the reality of gradual proliferation. While states should use policy as a mechanism for shaping a better world in accord with their interests, a policy that contradicts the underlying realities of international behavior is doomed to failure in democratic governments. We believe that U.S. proliferation policy must move to recognize that the world is based on the proposition that actors see value in the possession of nuclear weapons. Of course, in the case of rogue states, others have a legitimate security role in attempting to deny them nuclear-weapons status.

Fifth, a vital national interest of the United States is the creation and maintenance of a stable international order. An essential condition of this international order is coexistence among a growing number of nuclear weapons states. The deterioration of the Cold War provides no tangible evidence that nuclear weapons will fade away, and suggests that a non-nuclear world is an illusion on which neither the United States nor the world should waste time and hope. Any reasonable definition of stability is one which coexists with, rather than is defined separately from, the existence of nuclear weapons.

Sixth, while the United States possesses great power, its power is not great enough to reverse the logic of national interests. As long as states see value in nuclear weapons, for reasons enumerated, then the United States must adopt policies that permit coexistence in a world which has several nuclear powers.

This study rejects the thesis that all cases of nuclear proliferation are intrinsically destabilizing or that all cases are in diametric opposition to U.S. interests. But it remains true that some cases of nuclear proliferation will pose a fundamental problem for the United States. If the United States is to articulate a new policy for guiding its actions in the field of nuclear proliferation, it must transcend current thinking on three levels.

First, the shortcomings with the current U.S. proliferation policy cannot be addressed as simple engineering problems. The United States cannot fix its policy simply by reforming bureaucracies or altering the panoply of international regimes that deal with proliferation problems. Nor is the solution to proliferation generally found in the realm of more aggressive intervention.

Second, the most fundamental constraint on redefining U.S. proliferation policy is to change the attitude that defines nuclear proliferation as an aberration. Once the proposition that states have legitimate reasons for possessing nuclear weapons is accepted, then the challenge of nuclear proliferation becomes one of shaping, rather than resisting, an inevitable process.

Third, the partial denuclearization — or safety, security, and dismantlement (SSD) — of the former Soviet Union's nuclear arsenal is an important, but not sufficient, basis for U.S. proliferation policy.[14] The United States has pursued a nonproliferation policy since the early 1960s, which had little to do with the subsequent division of the Soviet arsenal in the 1990s. It is a limited component of a policy for shaping a more stable world, but not the *raison d'etre* for U.S. actions. Proliferation policy encompasses a broader array of concerns than managing the disintegration of the Soviet nuclear arsenal.

B. A Note on the Changing Nature of Proliferation

The collapse of the former Soviet Union signifies the onset of an international order that is less immediately dangerous to the United States. With the end of the threat of a nuclear war between the United States and the former Soviet Union, there is the danger of an era of uncontrolled nuclear proliferation. The end of the Cold War may make conventional conflict even more likely as ethnic conflicts flare up in an atmosphere not suppressed by common foes, a common government, or the Soviet Union. The relatively predictable times of the Cold War have been replaced by an era in which policymakers and societies are convulsed with the uncertainties that abound in revolutionary times. But the Cold War had its own uncertainties, including the unforeseen dissolution of the Soviet Union.

For better or worse, nuclear weapons continue to occupy a prominent position in international relations, influencing the policies of all states, large and small. There is no credible escape from the conclusion that nuclear weapons, despite the hopes of many, remain a permanent force in the constellation of powers that will shape the international security system for the foreseeable future. This is the reality of "nuclear ownership."[15]

Since the beginning of the Cold War, the debate on nuclear weapons alternated between two essentially contradictory views. The first is that the spread, or proliferation, of nuclear weapons is an unfortunate, but inevitable, consequence of the diffusion of nuclear technologies among the advanced states.[16] Advocates of this view believe that nuclear technologies cannot be cloistered among a few states, given the free flow of ideas that exists within the scientific communities in free societies. It is also argued that the proliferation of nuclear weapons can be a force for stability in international relations.[17] The second is the hope, historically disguised as policy, that it is possible to prevent the spread of nuclear weapons beyond a few states. This second precept is important because it constituted the core principle behind the policy of nonproliferation articulated by the United States since 1945. This was a policy that was largely effective during the Cold War, but is less credible for the future.

The problem is that Cold War nonproliferation policy is being undermined by the actions of several states. It now appears that an entirely new group of states will possess nuclear weapons, as well as the attendant delivery vehicles.[18] Most estimates project that within five years, the category of "potential threshold states" that could or are likely to possess nuclear weapons includes Algeria, Iran, Iraq, Libya, and Syria. There are several *de facto* nuclear states: India, Israel, North Korea, and Pakistan. Some states, such as Japan and Germany, have the technical and economic resources to build nuclear weapons, and occasionally discuss the policy implications of developing nuclear arsenals.[19] Furthermore, the dissolution of the Soviet Union has created the *de facto* nuclear states of Ukraine, Belarus, and Kazakhstan, in addition to Russia itself. The only case in history in which a state voluntarily gave up nuclear weapons is South Africa. Although South Africa had signed the NPT, it agreed to International Atomic Energy Agency (IAEA) safeguards inspections of its previously undeclared nuclear sites only after it had made the decision to relinquish nuclear weapons.

The cumulative effect of these developments is to increase the number of nuclear states. The United States should not find solace in the fact that the rate of nuclear ownership has not kept pace with estimates in the 1960s.[20] There are several profound ways in which the nature of nuclear proliferation has changed in the last decade.

First, the diffusion of technologies allows states to collect the skilled personnel and technologies that are necessary for the development of indigenous nuclear weapons programs.[21] It is necessary to remind ourselves that nuclear weapons technology is a half century old and is not confined to just a few laboratories and scientists. Second, the political penalty associated with the possession of nuclear weapons diminishes as individual states are added to the nuclear roster. Adding one more state to the nuclear roster is not as politically salient as it once was, and does little more than provoke mild diplomatic denunciations. Third, it is increasingly difficult for the United States, or any of the advanced industrial states, to prevent nuclear proliferation by states determined to

possess nuclear weapons — short of military preemption, or "counter proliferation" in the current jargon. The implicit bargain in the NPT between the nuclear powers and the "Have-nots" was that in selected cases the necessary information and technologies were provided so the "Have-nots" could become nuclear energy powers without nuclear weapons. Considerable resources and rhetoric were invested in a policy of nonproliferation whose success — 150 states or more do not possess nuclear weapons while only ten to fifteen do — can no longer be guaranteed.

The United States cannot afford the luxury of basing its nonproliferation policy on simple denial. It is no longer sufficient to base U.S. policy on threats to penalize states that attempt to possess nuclear weapons for legitimate security reasons. The United States no longer can afford to expend political capital railing against states which make attempts to possess nuclear weapons, regardless of U.S. protests to the contrary. Accordingly, the United States needs to rethink its policy of nonproliferation to deal with those cases that are deemed to be stabilizing should they acquire nuclear weapons. This study is devoted to assisting those who are tasked with reshaping U.S. policy.

C. Declining Ability to Control Nuclear Proliferation?

At the same time that states continue to see legitimate reasons for possessing nuclear weapons, the ability of the United States and the developed states to prevent the spread of nuclear technologies is in serious decline. There are several reasons that account for the difficulties of preventing nuclear proliferation.

Collapse of the Former Soviet Union. The collapse of the political and social system of the former Soviet Union has weakened the mechanisms for controlling nuclear technologies. There are numerous allegations of "leakages" of nuclear weapons, fissile material, and skilled personnel from Russia and the former republics.[22] The state-controlled process for ensuring the physical security of over 30,000 nuclear weapons remains in doubt.[23] This includes facilities in Russia and the former republics that produce or manage nuclear weapons, and which contribute to the drain of

human capital and technical materials essential to the development of nuclear weapons.

Growing International Demand for Nuclear Weapons. The uncertain security situation that many states face as a result of the collapse of the post-World War II international order generates international demand for nuclear weapons. Many states can no longer depend on the security relationships that emerged out of the major coalitions of the Cold War. Some states, such as North Korea, have lost their international support structure and face a future of strategic isolation. Other states, such as Ukraine, find that their nuclear guarantor of the Cold War — Moscow— is probably now their most realistic future threat. For other states, the nuclear umbrella of the superpowers was reasonably credible during the Cold War, but loses credibility in an emerging multipolar international order. Under such uncertain security conditions, it is natural for states no longer protected by a nuclear ally to seek to guarantee their own national security for the future, which many will define in terms of nuclear weapons.

Failure of International Regimes. The failure of international regimes to prevent the flow of technologies and materials necessary for the development of nuclear weapons has been well documented. The case of Iraq illustrates the limitations of policies that aspire to prevent the spread of nuclear weapons. Iraq was willing to invest tens of billions of dollars in a nuclear weapons program, while under the "watchful" eye of regular inspections by the IAEA. North Korea probably has developed nuclear weapons, or is quite close, despite membership in the NPT since 1985. The cases of both India and Pakistan demonstrate that not all nations adhere to international regimes. The universal condition is that states can acquire nuclear weapons despite the restrictions of international regimes that are designed to prevent nuclear proliferation.[24]

Network of Willing Suppliers. States interested in nuclear weapons find an energetic network of suppliers in all of the major industrialized states that are willing and able to provide access to the necessary technologies. The inescapable conclusion is that determined and well-financed states which want to possess nuclear

weapons will not be deterred by bureaucratic mechanisms for preventing exports of nuclear technologies and materials. This is not to say that the United States should not attempt to prevent nuclear weapons from being acquired by hostile states and exporters of international terrorism. Rather, as the number of nuclear states increases, there is an obvious increase in the potential availability of nuclear technology and materials. The spillover of technologies remains a continuing source of nuclear proliferation.

Dangers of Armageddon Overstated? The thesis that nuclear proliferation leads inevitably to a nuclear armageddon is not as widely accepted as it once was. The nuclear peace of the Cold War has led some to conclude that nuclear weapons may enhance security in many cases, while actually reducing the threat of hostilities. This study argues that nuclear proliferation, in some instances, is a force for international stability, and that proliferation is not an automatic prescription for cataclysmic wars.

D. Policy Choices for the United States

The emerging international reality weakens the rationale for an across-the-board U.S. nonproliferation policy based on the assumption that most cases of proliferation can be prevented. This fact alone compels U.S. policymakers to redefine the logic behind policies that seek to limit the spread of nuclear weapons and outlasts those weapons. The United States needs to define policies that permit proliferation that leads to regional and global stability and oppose it in instances when it does not.

All policy reflects choices among alternatives, and nuclear nonproliferation policy is governed by the same conditions. The current cast of policy makers in the United States essentially faces three choices about proliferation.

Oppose all Proliferation. The first choice for the United States is to continue to uphold the traditional policy of nearly absolute opposition to the proliferation of nuclear weapons. This choice is consistent with Clinton Administration policy, which argues that the United States has a practical obligation to resist the spread of nuclear weapons. This policy points to the success of

global nonproliferation efforts, citing the fact that the number of nuclear-armed states did not keep pace with earlier estimates that 20 or 30 states would possess nuclear weapons by the 1990s.

This policy is problematic, however, because it conflicts with the limited ability of developed states to prevent further nuclear proliferation. Furthermore, it makes no differentiation between a nuclear-armed Sweden or Iran, arguing that each case contributes to global instability. Finally, the current nonproliferation policy has a rhetorical element that is difficult to implement in a balanced fashion. The rhetoric of nonproliferation is losing credibility, as recently demonstrated when the United States engaged in a public debate about intervention against North Korea, but rapidly backed away from the threat. The perception that the United States is reluctant to use military force to halt proliferation further undermined the credibility of U.S. policy.

Accept Proliferation as Inevitable and Concentrate on U.S. Security. The second choice is to accept the inevitability of proliferation and concentrate on measures to increase the security of the United States in a world of many nuclear weapons states.[25] A policy of accepting proliferation leads to military solutions in a world in which more states will possess nuclear weapons, and to an acceptance of the futility of efforts to manage the process of nuclear proliferation. This policy choice translates into a greater emphasis on the development of U.S. defensive systems to protect the ability of the United States to protect its territory, its interests around the world, and U.S. forces that are deployed overseas.[26]

This choice is fraught with dangers because the prospect that nuclear states are vulnerable to U.S. defensive technologies will intensify efforts to develop their own defenses. Any doubts about effectiveness will result in self-generated restraints on the United States if it attempts to defend its interests abroad. The other danger is that it leads to U.S. isolationism and a decline in the willingness of the United States to work toward a stable international security system in which U.S. interests are protected.

Selective Approach to Nuclear Proliferation to Protect Global Stability. The third choice for American policymakers is

to accept the reality of a world in which nuclear proliferation will occur with or without the consent and approval of the United States. The time has come for the United States to adjust its policy to conditions when states that are determined to become nuclear powers, and when their membership in the nuclear club cannot be denied short of war.

This third option builds on positive elements of the previous two options to establish the basis for nuclear coexistence in the current international climate. It would focus opposition to proliferation on destabilizing cases, while seeking to deemphasize the role of nuclear weapons and limit their effectiveness. It simultaneously would seek to assure the safety and security of existing nuclear arsenals. The theme of this new policy is to accept that if nuclear proliferation will occur, the United States must distinguish between stabilizing and destabilizing cases of nuclear proliferation. As we explore later, in stabilizing cases the objective should be to help states manage their nuclear arsenals in safe, secure, and peaceful ways. In destabilizing cases, the United States should focus its efforts on impeding nuclear proliferation. If it is beyond the ability of the United States to prevent all cases of proliferation, then it is imperative to assist states manage their nuclear arsenals in ways that enhance, or at least do not detract from, international security. The implementation of this policy involves both conceptual and technical steps (see Part Five).

A Note on Sources

A study on nuclear proliferation depends on a variety of sources about current developments in states that are on the threshold of attaining nuclear status. In this study the concern is not with precise statements about whether or when states actually cross the nuclear threshold. Such judgments are the province of intelligence estimates produced by governments. While enormous efforts are made by a variety of states to measure the progress of indigenous nuclear programs, the exact nature of events within nuclear programs often are difficult, at best, to discern from outside, given the technical problems of assessing the status of nuclear programs. Iraq's nuclear program prior to 1990 is an excellent example of the

difficulties inherent in prediction. Nevertheless, the cases examined in this study do not concentrate on judgments of the precise nuclear status of states, but with the reasons why these states believe that nuclear ownership strengthens their security.

Notes

1. See McGeorge Bundy, William T. Crowe, Jr., and Sidney Drell, "Reducing Nuclear Danger," *Foreign Affairs*, Spring 1993, pp. 140-46, for arguments that the ending of the Cold War increases the dangers of nuclear proliferation. Also see John M. Deutch, "The New Nuclear Threat," *Foreign Affairs*, Fall 1992, pp. 120-135.

2. A number of studies have suggested that changes are necessary in nonproliferation policy, but these essentially articulate a refinement of the traditional approach to preventing nuclear proliferation. As examples, see Robert D. Blackwill and Albert Carnesale, *New Nuclear Nations* (New York: Council on Foreign Relations, 1994); Office of Technology Assessment, *Proliferation of Weapons of Mass Destruction* (Washington, DC: US Government Printing Office, 1993); Joseph S. Nye, Jr., "New Approaches to Nuclear Proliferation Policy," *Science*, May 29, 1992, pp. 1293-98.

3. See "Averting Nuclear Chaos: The Tasks Before Us," *US Department of State Dispatch*, October 11, 1993, p. 704, for the remarks by U.S. Negotiator on Safe and Secure Dismantlement of Nuclear Weapons James E. Goodby on measures to avert nuclear proliferation. See "Fact Sheet: nonproliferation and Export Control Policy," *US Department of State Dispatch*, October 4, 1993, p. 676, for a policy statement on U.S. efforts to bolster the emphasis on preventing nuclear proliferation.

4. See "President Clinton's Address to the U.N. General Assembly, September 27, 1993," *Foreign Policy Bulletin*, November/December 1993, p. 51.

5. See Elaine Sciolino, "Christopher Spells Out New Priorities," *New York Times*, November 5, 1993.

6. See Remarks by Honorable Les Aspin to National Academy of Sciences, December 7, 1993. *The Economist* argues that this policy acknowledges "that despite such efforts some nuclear weapons are likely to fall into dangerous hands." See "Cold War II," *The Economist*, December 17, 1993, p. 28.

7. See McGeorge Bundy, William J. Crowe, Jr., and Sidney D. Drell, *Reducing Nuclear Danger: The Road Away From the Brink* (New York: Council on Foreign Relations, 1993), for arguments about the dangers of nuclear ownership and steps for remedying this condition.

8. The counter-argument is that states are about to move to a new plateau of esoteric military technologies, which could make nuclear weapons obsolete as

the preferred deterrent for some states. In this world, attacks against nuclear reactors, rather than attacks with nuclear weapons, may be the more likely form of attack against major powers.

9. Nuclear weapons are the more dangerous weapon because, unlike biological weapons, they have the ability to destroy infrastructure as well as people on an historically massive scale.

10. See Rodman D. Griffin, "Nuclear Proliferation: The Issues," *Congressional Quarterly Researcher*, June 5, 1992, pp. 483-500.

11. See Patrick Glynn, "Bombs Away: The Nuclear Proliferation Boom," *The New Republic*, October 28, 1991, pp. 13-16, for the view that the non-proliferation system of controls does not work.

12. See Elizabeth A. Palmer, "Nuclear Powers Still Multiply, Woolsey Warns Congress," *Congressional Quarterly Weekly Report*, February 27, 1993, p. 472, for concerns that many states possess the ability to produce nuclear weapons and may sell them on the international arms market. However, some scholars argue that the rate of nuclear proliferation is slowing, as demonstrated by South Africa's "repentance" as well as the decision by Argentina and Brazil to stop their nuclear programs. See Leonard S. Spector, "Repentant Nuclear Proliferants," *Foreign Policy*, Fall 1992, pp. 21-44, for an overview of this position. We differ with this view because it ignores the ability of Pakistan, Iran, Iraq, South Africa, and North Korea to develop nuclear weapons, and the efforts of Ukraine to retain its inherited nuclear arsenal, despite the pressure on states to conform to nonproliferation standards.

13. See Paul L. Leventhal, "Plugging the Leaks in Nuclear Export Controls: Why Bother?," *Orbis*, Spring 1992, pp. 167-181, for the argument that states cannot prevent the increased production of nuclear weapons.

14. See Graham Allison, et. al., *Cooperative Denuclearization: From Pledges to Deeds*, CSIA Studies in International Security, No. 2 (Center for Science and International Affairs, Harvard University, January 1993), for a detailed study of the arguments about denuclearization and its implications for the nuclear arsenal in the former Soviet Union.

15. We use the term "nuclear ownership" to signify the gamut that ranges from the desire to achieve nuclear status to the actual possession of nuclear weapons.

16. See Dan Charles, "In The Beginning Was Uranium," *New Scientist*, October 24, 1992, pp. 301-307, for the argument that the diffusion of gas centrifuge technology suggests that nuclear proliferation cannot be prevented because states can obtain the uranium isotope.

17. See Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper No. 171 (London: International Institute for Strategic Studies, 1981), p. 28, for his elegant argument that "the slow spread of nuclear

weapons will promote peace and reinforce international stability." He also wrote that the "spread of nuclear weapons is something that we have worried too much about and tried too hard to stop." (p. 29) To compare the differences in behavior among new and old nuclear states, Waltz examines a range of factors that influence the stability of nuclear deterrence among new nuclear states. These factors include the effect of the spread of nuclear weapons on domestic stability and regional stability, the nature and credibility of deterrence when states possess small nuclear arsenals, the dangers of arms races among new nuclear states, the likelihood of war among these states, and the question whether great powers should help lesser powers "improve" its nuclear force. In the conclusion, Waltz correctly focuses on the larger question of, "What will a world populated by a larger number of nuclear states look like?" (p. 29) He concludes that a world "with more nuclear states will have a promising future" for six reasons: the evolving maturity of states that possess nuclear weapons; the indestructible balance of terror; the complexities of deterrence in a multi-nuclear world induce greater caution; the immense cost of nuclear war inhibits states from starting one; the inability to win fundamentally deters conflicts; and, the "new nuclear states will confront the possibilities and feel the constraints that present nuclear states have experienced." (p. 30) See Bruce Russett, "Away From Nuclear Mythology," in Dagobert L. Brito, Michael D. Intrilligator, and Adele W. Wick, eds., *Strategies for Managing Nuclear Proliferation* (Lexington, Massachusetts: Lexington Books, 1982), pp. 145-55, for criticisms of the Waltzian position on proliferation.

18. See Thomas W. Graham, "Winning the Nonproliferation Battle," *Arms Control Today*, September 1991, pp. 8-13, for a discussion of these states' nuclear programs.

19. See Charles A. Radin, "In Japan, Quiet Talk of Nuclear Arms," *Boston Globe*, September 19, 1993, p. 10, for discussions in Japanese policy circles about the value of nuclear weapons.

20. See Graham, "Winning the Nonproliferation Battle."

21. There is an extensive literature on the diffusion of technologies necessary for the development of nuclear weapons. For detailed analyses, see National Academy of Sciences, *Finding Common Ground: U.S. Export Controls in a Changed Global Environment* (Washington, D.C.: National Academy Press, 1991); William C. Potter, International Nuclear Trade and Nonproliferation (Lexington: Lexington Books, 1990); Leonard S. Spector, *Nuclear Ambitions: The Spread of Nuclear Weapons 1989-90* (Boulder: Westview Press, 1990).

22. See William C. Martel and Steven E. Miller, "Controlling Borders and Nuclear Exports," in Graham Allison, et. al., *Cooperative Denuclearization: From Pledges to Deeds*, CSIA Studies in International Security, No. 2 (Center for Science and International Affairs, Harvard University, January 1993), pp. 201-203, for a discussion of the "leakage" of nuclear scientists, technologies, and materials from the former Soviet Union.

23. See Kurt M. Campbell, et. al., *Soviet Nuclear Fission: Control of the Nuclear Arsenal in a Disintegrating Soviet Union*, CSIA Studies in International Security, No. 1 (Center for Science and International Affairs, Harvard University, 1991), for a detailed examination of the problems associated with the fragmentation of the nuclear arsenal in the former Soviet Union.

24. While we disagree, some argue that international regimes have been quite successful in preventing the proliferation of nuclear weapons. See, for example, Thomas W. Graham, "Winning the Nonproliferation Battle," for the argument that there has been far less proliferation in the past two decades than previously predicted and some notable successes in rolling back proliferation.

25. The assumption in proliferation debates is that the spread of nuclear weapons involves individual states whose interests and policies are not unified in alliances or coalitions. There is, however, the prospect that the United States could face a coalition of nuclear-armed states that issue security guarantees for each other. Such a coalition would pose challenges for the United States in defending its regional security interests.

26. See Campbell, et. al., *Soviet Nuclear Fission*, p. 128, for a discussion of heightened interest in strategic defenses in an era of nuclear proliferation.

Part II

Nuclear Proliferation Incentives and Disincentives

A. Note on Deterrence and Shifting Security Calculus

The cold war model of nuclear deterrence reflected the unique structure of international diplomacy in three ways. First, nuclear diplomacy was conducted by two states which devoted roughly equal power and resources to military competition. The presumption was that if one side achieved a military capability, the other would equal or counter that achievement. The relatively equal power and stature of the superpowers lent considerable stability to diplomacy and to deliberations governing nuclear weapons.

Second, the cold war international system strengthened political and military stability because two actors shaped the fundamental discourse on nuclear weapons and thus simplified diplomacy.[1] While some states, such as Britain and France possessed independent nuclear arsenals, they had a decidedly minor role in deterrence calculations. The implication is that nuclear deterrence evolved within the confines of a relatively stable environment.

Third, the risk-averse outlook and actions of nuclear-armed states meant that the role of nuclear weapons in diplomacy was extremely limited given the enormous risks of conflict. Nuclear weapons forced states to integrate the catastrophic nature of

nuclear conflict into the relatively simple model of deterrence in a bipolar world. The recognition that nuclear weapons profoundly increased the consequences of war compelled states and their allies to act with great caution, and thus helped to preserve the "nuclear peace."

The point that nuclear weapons have become the province of ten or more states has important consequences for security. This expansion of the nuclear club leads to two conclusions that the time is right for the United States to revise its nuclear proliferation policy. The first is that the United States should concede that, in many cases, the acquisition of nuclear weapons can improve rather than retard regional stability. Second, this reasoning should force the United States to reexamine the incentives and disincentives that persuade states to build or refrain from nuclear weapons.

B. Proliferation Incentives: New Currency of Power?

Historical Proliferation Incentives

Before turning to the motivations of states in the contemporary era, there are several incentives that motivated states to develop nuclear weapons during the Cold War.[2] The first threshold of nuclear proliferation, which was instituted by the original generation of nuclear states, was shaped by a number of motivations.

Opening Pandora's Box. There were powerful incentives during World War II for the United States to develop a nuclear weapon, despite the fear that it would open a chain of events with unpredictable consequences.[3] The development of nuclear weapons by the United States ultimately was driven by two factors.

The first incentive that encouraged the United States to develop the first nuclear weapon was the knowledge that Nazi Germany was pursuing a similar atomic bomb project. Although there was no prior scientific evidence about the effectiveness of nuclear weapons, the United States was motivated by the prospect of revolutionizing warfare and obtaining a decisive edge by possessing this technology first. The belief that nuclear weapons could not be allowed to fall first into the hands of Germany drove the United

States to spend its research resources in the development of the first nuclear weapon.[4] Germany, however, apparently became discouraged in 1942 and redirected its priority toward the nuclear reactor or engine as it was then called.

The second incentive was the American tendency to solve political problems through the application of military technology.[5] Although the capabilities of nuclear weapons were unknown, the prospect was that the development of nuclear weapons would create the next generation of a vastly more powerful and lethal military technology. As a revolutionary weapon system, the United States leadership hoped that atomic weapons would lead to an early end to the war and radically decreased casualties for the United States and its allies. The decision by President Truman to use the atomic bomb against Japan stemmed from the simple and pragmatic judgment that ending World War II in the Pacific would not otherwise be possible without a costly invasion of Japan.

Bipolar Confrontation and Equality. The revolutionary effect of nuclear weapons was not lost on other states once the immense power of those weapons was demonstrated at Hiroshima and Nagasaki. While states without nuclear weapons downplayed their significance, the Soviet Union, Britain, and France gave the development and production of nuclear weapons high priority in their post-war reconstruction plans. For all practical purposes, the period immediately after World War II should be seen as the first major period of proliferation. It was confined to the major allied nations of World War II as they endeavored to establish their relative positions of power in the postwar era. Britain and the Soviet Union were quick to seek nuclear forces, followed shortly by France and later still by China.

The nuclear weapons development programs of these states illustrate the role of various incentives. For the Soviet Union under Stalin's leadership, the major incentive clearly differed from that of Britain and France. Moscow was entering a period of serious and protracted ideological and military confrontation with the United States. While the Soviet Union possessed an overall advantage in conventional military forces on the Eurasian landmass, which it maintained at great cost, the rational model of strategic

thought implies that Stalin felt threatened by the prospect that the United States alone would possess a monopoly on nuclear weapons.[6] It is likely that Stalin believed that nuclear weapons were essential to dealing with the United States on an equal footing.[7] While Soviet propaganda under Stalin condemned nuclear weapons and de-emphasized their importance, the Soviet state accelerated their development through all possible means, including extensive espionage efforts in the United States and Britain. Whether history judges the motivation of Soviet policymakers in the Cold War to be offensive or defensive is less relevant than the fact that nuclear weapons represented the new currency of power.

Redefining Great Power Status. In the post-war era, nuclear weapons represented an instrument for redefining the status of great powers. Britain and France were allies in the cold-war struggle with the Soviet Union and relied primarily on the power of the United States for their defense. Neither Britain nor France could resume their prewar positions as major powers on a global scale. Not even nuclear weapons could reverse their decline as major powers given the heavy toll in lives and fortune extracted by World War I and II. Nuclear weapons, as the new currency of power, did however become the symbolic replacement for colonial empires by states that sought to maintain their status as major power.

For France, the possession of nuclear weapons also was motivated by its troubled relationship with the United States. The asymmetry in the power of the United States and France strengthened France's resolve to seek the means to exercise a more independent national policy, while remaining confident of its own security in Europe.[8] The *force de frappe* was justified as a response to the lack of confidence in the U.S. extended deterrence, or "nuclear umbrella." The possession of an independent nuclear deterrent force was seen as a necessity for France under the leadership of Charles DeGaulle if it was to guarantee its security and independence.

While China was relatively late in its development of nuclear weapons, it also chose to develop nuclear weapons once the means

were available. After more than a century of weakness and exploitation at the hands of other powers, China developed nuclear weapons, and established a minimum deterrence force that would confer its acceptance as a great power.

The two primary incentives that originally motivated states to possess nuclear weapons after World War II remain pertinent today. The first is to use nuclear weapons as a counter-weight to the often greater military power of opposing states. The second was the belief that nuclear weapons were the modern currency of power by which states legitimized their status as great powers. These incentives are an expression of a state's most fundamental instinct for ensuring its survival and protecting its image as an independent, sovereign state. Inherent in the possession of nuclear weapons is a strong nationalist belief about the states right to ensure its survival through any possible means.

Why Nuclear Weapons are Important to States Today

When states made the decision during the Cold War to possess nuclear weapons, they confronted the same fundamental choices that contemporary states must address. While there are several incentives that remain particularly relevant today, a word of caution about incentives is in order. These incentives animate the motivations behind nuclear ownership, but often are not reducible to simple cost-benefit analyses.[9]

The Ultimate Deterrent. The dominant incentive that motivates states to possess nuclear weapons is the belief that they represent the ultimate deterrent against aggression. For some states, nuclear weapons are a deterrent to nuclear attack against the homeland or regions in which they have vital interests. This logic applied to the United States and the former Soviet Union. For other states, such as Pakistan, nuclear weapons are the ultimate deterrent that assures their survival in the face of overwhelming military forces in the hands of a nearby state.

Israel exemplifies the case of a state surrounded by hostile forces that might develop the conventional capability to overrun it at some future point. Israel saw itself as an enclave with its back

to the sea, surrounded by hostile neighbors, and thus feared that the combined might of the Arab world might overwhelm Israel. While Israel had a close strategic relationship with the United States, Israel worried that the countervailing pressures of critical oil reserves in the Arab states limited the ability of the United States to protect it. For such a state, nuclear weapons were a logical answer to strategic insecurity.[10]

Yet there are cases in which the search for the ultimate deterrent leads to a rejection of nuclear weapons. South Africa is the most prominent case. In 1993, South Africa announced that it would dismantle its nuclear weapons program which it started in 1974. While this example of denuclearization is important, it does not diminish South Africa's reasons for seeking nuclear weapons, which are as important as the decision to eliminate the weapons. South Africa historically feared the resurgence of the black nations of Africa, which were united in their opposition to the policies of apartheid and supported by the Soviet Union. The South African Government saw itself as an enclave in Africa surrounded by unfriendly and unruly states whose numerical superiority always would outnumber South Africa's military forces. South Africa could not count on any external support. For states in an insecure strategic position, nuclear weapons offered an obvious answer to the prospect of numerical inferiority. While the decision is controversial within the councils of the African National Congress,[11] with the end of apartheid South Africa's government voluntarily disbanded its nuclear weapon program in 1993.[12]

The argument that nuclear weapons offer the ultimate deterrent against aggression is an historically persuasive incentive for nations that feel besieged by surrounding nations and are outcasts within their own regional neighborhood. One could argue that North Korea's current nuclear weapon program reflects this incentive more than any other. This was true for Israel, Pakistan, and South Africa.

Regional Stability and Supremacy. It is not surprising that states are inclined to believe that nuclear weapons offer the hope and provide the instrument for creating stability in regions prone to hostility and conflict. In the case of South Asia, this incentive

led to the possession of nuclear weapons by India and Pakistan, as we will examine later.

The incentives for proliferation on the South Asian subcontinent fit into this traditional category. India always has defined its national self-interest in terms of geopolitical competition with China. This view was encouraged during the days of the Sino-Soviet Bloc, when the West widely nourished comparisons between China and India as the great competition between democracy and communism in the developing world's most populous nations. The Soviet Union counted India as a counter to China. But as India fell increasingly behind China in an economic sense, India's pursuit of its nuclear weapons program acted as a counter-weight to China's greater military and economic power. India's leadership continues to believe that India is the major power in the region, and recognizes that nuclear weapons provide one more element in its desire to achieve recognition as a major power.

Pakistan faces a much larger and potentially more powerful India since the independence of Bangladesh in 1971. It is not surprising that Pakistan sought nuclear weapons as a deterrent to India's nuclear capability and conventional superiority. Given the outstanding territorial issues between India and Pakistan, as well as their Hindu-Moslem religious rivalry, this nuclear competition could become quite unstable and dangerous. India and Pakistan, however, are protected by the nuclear bipolarity that deters aggression.

In Latin America, the incentive to achieve regional stability has yet to lead to nuclear weapons. The incentive to achieve regional dominance certainly was relevant when Argentina and Brazil actively sought to develop nuclear weapons in the 1980s. The announcement of Brazil's abandonment of a program in 1988, the establishment of the Argentine-Brazilian Agency for Accounting and Control of Nuclear Material (ABACC), and the signing of the four party agreement (Argentina, Brazil, ABACC and IAEA) in Vienna in December 1991[13] — all indicate that the incentive to achieve regional stability and dominance was not adequate. A major reason for the failure of the incentive was that the transition to democratic governments in Argentina and Brazil defused the

quest for regional military dominance. A less important reason was the great economic costs of a nuclear weapons program for states whose economies in the 1980s were suffering high inflation and budget deficits.

Civilian Nuclear Power and the Bomb. The desire to use civilian nuclear power to support economic and industrial development historically has been a powerful incentive. Nuclear power is an essential tool for developing states that aspire to create a modern industrial and technological infrastructure that lessens their dependence on external powers. The prospect of the wide availability of nuclear fuel and forecasts of the diminishing availability of fossil fuels, strengthens the conviction of developing nations that nuclear power is an important source of energy in their drive to modernization. States also derive obvious technological gains — in skilled scientists, engineers, and technologies — from programs for the development of nuclear power.[14]

The problem which complicates matters is that this incentive is unacceptable to the developed states because it often is interpreted as the first step toward the development of nuclear weapons. Developing states view efforts by the developed states to control the spread of nuclear weapons as obvious attempts to maintain their monopoly on nuclear weapons. The developing states also believe that efforts to control access to civilian nuclear power fundamentally represent an effort to deny the technologies that are essential to modernization and industrial competition. For the rest of the world, however, attempts to deny access to some kinds of peaceful nuclear technology, which are justified by efforts to halt nuclear proliferation, are seen as evidence of economic and technological discrimination.[15] The language of the NPT reaffirms the suspicion that nuclear power is the province of the developed states to be rationed to the developing states.

The nuclear energy and technology incentive is the most manageable because there are ways to increase access to nuclear power without spreading the fissile materials that fuel nuclear weapons programs. While there obviously are cases in which nuclear power programs provide a convenient cover for hiding the development

of nuclear weapons, not all demand for civilian nuclear power is necessarily a cover for the bomb.

Weapon of the Weak? The incentives for nuclear ownership are being strengthened by the addition of a new motivation. An interesting phenomenon of the 1990s is that smaller states feel greater pressure to develop nuclear weapons to counter-balance the power of nuclear-armed states. This is occurring as the incentives to possess nuclear weapons are diminishing for more powerful non-nuclear weapon states because these weapons are not usable in a practical sense. The original concept was that nuclear weapons were viewed as useful because they deterred other developed states and intimidated weak states, and thus reinforced international stability.[16] As the weapons of the strong, they served the dual purposes of intimidating the weak and deterring the strong.

The strategic climate in the 1990s has begun to reverse this logic. Nuclear weapons increasingly are valued as the weapon of choice for weaker regional powers that seek to deter stronger states through nuclear intimidation. Nuclear ownership offers more than the ultimate deterrent against regional neighbors, because it constitutes an extraordinary insurance policy against intervention by major powers. The Persian Gulf War reinforced this incentive in two ways.

First, it is interesting to speculate whether the United States would have been restrained (if not totally deterred) from military intervention if Iraq had possessed a nuclear arsenal. It is easy to believe that the outcome of the debate in the Congress in 1991 would have been different under those circumstances. Given debates about the effectiveness of stopping random Scud attacks launched from Iraq,[17] even with undisputed air superiority, the United States might be less confident about its ability to intervene against a nuclear-armed nation. The recognition that nuclear weapons weaken the ability of the United States to protect its freedom of action in support of its national interests abroad provides a powerful incentive to regional powers that want to change the political balance without fear of U.S. intervention.

Second, in an interesting reversal of cold war thinking, nuclear weapons provide an effective counterweight to the conventional forces of the United States or any other adversary. The high level of technological sophistication in conventional warfare displayed by U.S. forces in the Persian Gulf War cannot be achieved by most nations that might confront the United States or other nuclear-weapons states. For the radical leaderships in Libya, Iran, or Iraq, Operation Desert Storm may well provide a new incentive to develop nuclear weapons. Nuclear weapons are a particularly useful deterrent if these states seek to overthrow the conservative regimes of the Middle East which will bring them into direct confrontation with the United States. While it is debatable whether nuclear weapons would deter the United States given the sensitivity of the American people to casualties,[18] it is probable that the use of nuclear weapons against the United States would provoke a devastating counterblow. The fact remains that nuclear weapons provide one means for restoring the balance destroyed by advanced conventional forces.

Summary. The prospect is that the already strong incentives for nuclear proliferation will increase the value of nuclear weapons in the emerging international security environment. As long as nuclear weapons deter other nuclear powers, equate with the achievement of regional or global major power status, balance potentially overwhelming regional military odds, maintain a state's freedom of action by deterring intervention by major powers, and contribute to economic development and modernization — states may well feel powerful incentives to possess nuclear weapons.

The paradox is that the United States strengthens these incentives by its rhetoric and actions at a time when it should reduce the incentives that drive states to nuclear ownership. The pattern in U.S. diplomacy is to emphasize the importance of states, such as Ukraine and North Korea, that contemplate becoming nuclear-weapons states. When this emphasis is combined with the absence of non-nuclear weapon states from permanent membership in the UN Security Council, it reinforces the perception that nuclear weapons are the modern currency of power — even in the face of strong evidence that economic strength may well be the currency

of the future. There are ways to reverse this state of affairs (see Part V).

C. Proliferation Disincentives: Weighing the Costs

In contrast to the complex array of incentives that encourage nuclear ownership, there also are significant disincentives that dissuade states from possessing nuclear weapons.

Risk of Preemption and War. A prominent disincentive is the military risk of preemption and war that nuclear weapons programs create. There are no guarantees that neighboring nations or major powers will abstain from preemptive military strikes to ensure that a nuclear weapons program cannot be completed. Nor can states assume that neighboring states and other concerned states will acquiesce to dramatic changes in the military balance of a region, without taking appropriate military action to protect their interests. Potential nuclear states must understand that embarking on a nuclear weapon program carries great risks of preemption by developed states which are concerned about the destabilizing impact of nuclear weapons on the region. That risk is significant unless a state feels secure from attack by neighbors in its own region, or believes it can effectively conceal its weapons program.[19]

There are several examples of preemptive attacks against nascent nuclear weapon programs in the Persian Gulf region during the last decade.[20] Israel's attack against Iraq's nuclear reactor at Osirak in June 1981 is a much-heralded example of a preemptive action that crippled Iraq's nuclear weapons program for several years. Less than a year earlier, Iran had launched an unsuccessful attack against the Osirak reactor.[21] In a reversal of roles, in 1985 and 1987 Iraq launched attacks against Iran's nuclear reactor at Bushehr.[22] A major result of the U.S.-led military coalition action against Iraq in 1991 was not simply the restoration of Kuwait's independence, but the destruction of Iraq's nuclear weapons and ballistic missile programs. United Nations resolutions and inspection, actions three years after the war, continue efforts to impose a forcible denuclearization on Iraq.[23] In

the present climate, the high levels of alert and the constant drilling of the military forces deployed around its nuclear facilities clearly indicates that North Korea is motivated by concerns that the United States or South Korea will unilaterally or jointly destroy the Yongbyon facilities.

Weaken Regional Stability. The prospect that the presence of nuclear weapons will disrupt regional stability is an important disincentive to nuclear ownership. When a state undertakes a nuclear weapons program, it must accept that the United States and other states will condemn the move as destabilizing or provocative. States also should understand that a period of isolation with the attendant risk of economic, political or, even military reprisals will follow the decision to possess nuclear weapons.

States must understand that in some instances nuclear weapons may add to regional instability.[24] They also understand that nuclear weapons historically are generated by uncertainty and insecurity. Whether nuclear weapons exacerbate regional instability is a function of the motivations of the states involved. States that have designs on the regional balance of power are likely to develop nuclear weapons, and neighboring states probably are more likely to see nuclear weapons as an indicator of regional instability. Nations which are not threatened by their neighbors normally are not interested in nuclear weapons.

The symbol of the threat to regional stability posed by nuclear weapons are the efforts in Southeast Asia and the South Pacific to establish nuclear-free zones, whose purpose is to codify opposition to nuclear weapons and highlight the problems that nuclear weapons pose for regional stability. While the United States historically has expressed opposition to these zones, they are an important disincentive to nuclear proliferation that must be strengthened if the United States is to reduce the incentives for nuclear ownership. They symbolize a regional consensus and moral opprobrium against nuclear ownership, but more importantly express the view that nuclear weapons pose dangers for regional stability in some cases.

Bombs or Butter? A compelling disincentive to nuclear ownership is the extraordinarily high economic costs that a nuclear weapons program entails for a state. A successful nuclear weapons program requires a large commitment of the state's economic resources, which are measured in the billions of dollars. A society that wants nuclear weapons must be willing to devote a significant portion of resources that are desperately needed for a wide range of competing economic and social programs. Furthermore, the development of nuclear weapons is capital intensive, requiring a unique infrastructure made more expensive by the necessity to disguise the effort. It is estimated, for example, that Iraq spent in excess of $10-20 billion on its nuclear program.[25]

The development of nuclear weapons involves choices among economic options. Nuclear weapons programs require skills and resources that cannot be used for many other purposes. These programs require highly qualified technical personnel, who usually are trained at the better universities and more advanced laboratories in other states. In addition, there are high costs involved in purchasing or producing weapons grade material. While some of these costs can be distributed among other economic priorities, as in the case of nuclear power reactors, most of the costs — for reprocessing facilities, test complexes, bomb fabrication sites, among others — are sunk costs with little civilian applicability.

The frightfully expensive nature of these facilities, though less than that of building a conventional deterrent, often proves daunting for developing countries.[26] The combination of high economic costs and the absence of the necessary scientific expertise in these societies probably has been the most effective disincentive to nuclear proliferation. This constraint explains why the initial developers of nuclear weapons were major powers with the large economies necessary to support such efforts.

Nuclear weapons programs, however, have the benefit of creating the intellectual capital and physical facilities necessary for the development of civilian nuclear power.[27] Because nuclear power programs often are interpreted as the precursor to the development of nuclear weapons, the United States and others must accelerate their efforts to assist states openly in their efforts

to develop civilian nuclear power programs in ways that will not be interpreted as a cover for nuclear weapons. Iran may be using civil power as a cover for a weapons programs, as did South Africa, Argentina, Brazil, Pakistan, and India. Previous IAEA safeguards inspection efforts were not effective in the case of Iraq's nuclear program, and require major improvements, if credibility is to be restored.[28] There are cases in which states legitimately want nuclear power to support purely economic development. The United States should expand its support for these states if they are to create equal opportunities for states that want nuclear power as part of a strategy of economic modernization.

International Opprobrium. The prospect that a state will acquire nuclear weapons almost immediately raises the threat of facing condemnation by other states. This threat is significant only insofar as it can be the first step toward the imposition of economic sanctions against the state. There is evidence that states can live with the opprobrium that nuclear weapons programs generate, as the examples of North Korea and Iran demonstrate. The real penalty is that condemnations might lead to imposition of economic and trade sanctions that can have devastating effects on the ability to conduct international commerce. The problem, however, is that sanctions rarely materialize beyond the point of discussion.

International Sanctions. States that develop nuclear weapons may find that developed states will impose political and economic sanctions against the society. The experiences of Iraq and Pakistan suggest that this disincentive can have potentially serious consequences. Although there are no previously-codified international sanctions for states which violate or abrogate the Nuclear Nonproliferation Treaty, there are formal sanctions that can be imposed by national legislation, as in the Pressler Amendment in the United States,[29] and international restrictions on the transfer of technology.

The importance of this disincentive is demonstrated by the measures that states take to hide their nuclear programs and the vigor with which states deny the existence of nuclear weapons programs. For states that want to interact in the modern international economy, the threat of economic sanctions imposes

fearfully-high costs well beyond the economic price of the weapon program itself. When developing states contemplate nuclear ownership, they must be confident in their ability to either conceal the program or absorb the international penalties which will follow any disclosure or suspicion. This is rarely the case when international sanctions that are generated in response to nuclear weapons programs have the ability to impose considerable political and economic pain on states over a span of years.

The origin of sanctions against nuclear aspirants can be traced to initial post-World War II Baruch Plan to establish international controls on nuclear materials, eliminate nuclear weapons, and halt the proliferation of nuclear weapons programs. Restrictions against nuclear ownership through threats of international sanctions are implicit in the Nuclear Nonproliferation Treaty[30] and in the U.N. sanctions against Iraq that began in 1990.

Export Control Restrictions. The imposition of export control regimes on international commerce theoretically restricts the availability of technology essential to a nuclear weapons program, but these have not been an effective disincentive for many states. One reason for their ineffectiveness is that export controls affect a state regardless of whether it has a nuclear program. When there is irrefutable evidence of the existence of a nuclear weapons program, it often is too late for export controls. The historical record suggests that states are clever enough to circumvent export controls as long as they are willing to expend the appropriate amount of effort and resources for the purchase of the desired technologies. There is no evidence that states forego nuclear weapons programs based purely on the threat or practice of export control regimes.

The nuclear weapons states established international institutions to deny the necessary technology to states that are potentially interested in nuclear weapons.[31] In principle, such organizations were valuable because they delayed nuclear weapons programs, increased the difficulties of completion, and increased the cost of such programs, as Iraq's experience exemplifies. Export controls slow the process by which states acquire nuclear weapons. There is evidence, however, that by increasing the real costs and time

that it takes to develop nuclear weapons, export controls give developed states more time to derail nuclear programs.[32]

Summary. This discussion has focused on nuclear incentives and disincentives for states which have the capability to develop nuclear weapons. It is easy to underestimate the effectiveness of disincentives to nuclear ownership when we concentrate on states, such as North Korea and Iraq, that are determined to possess nuclear weapons. There are other instances, however, in which these disincentives acted as a powerful deterrent to the state. The most noteworthy cases in this regard are the states in South America and Scandinavia, as well as South Africa and Japan, which were persuaded that nuclear weapons would not increase their security.

These disincentives are not always sufficient to dissuade states. There are bound to be instances in which the incentives are more compelling to states which seek to alter the regional or international balance, by whatever means, to enhance their position in the international system and protect their legitimate security interests. If they cannot maintain the conventional capability necessary to guarantee their security, nuclear weapons will be seen as the instrument of choice. The question arises, however, whether these are the important cases. As long as there are states that want nuclear weapons, the developed states should focus their efforts on strengthening the disincentives. The missing element in the international system is perhaps the most important disincentive, which is a demonstration that there are positive benefits for states that remain non-nuclear. The challenge for the United States and other states is to strengthen the disincentives to nuclear ownership.

D. A Note on Stabilizing and Destabilizing Proliferation

The assumption in the proliferation policies of the United States and developed states has been that all forms of nuclear proliferation are contrary to the interest in international peace and security. For nearly fifty years, the international community rejected as illegitimate the aspiration of states to possess nuclear weapons,

and marshalled considerable political, economic, and military resources to support that policy.

The explicit principle behind nonproliferation policy has been undermined by events. It was a valid precept during the Cold War for the nuclear-weapons states that were motivated by the belief that any proliferation of nuclear weapons was inherently destabilizing. According to this logic, any increase in the number of nuclear-armed states was inimical to the security interests of all states, regardless of whether they possessed nuclear weapons. However, the language of nonproliferation needs now to distinguish between two fundamentally different types of stabilizing and destabilizing nuclear proliferation.

Destabilizing Nuclear Proliferation. The article of faith for the United States, and hence the defining principle of nonproliferation policies throughout the Cold War, was that any expansion of the ranks of "nuclear ownership" constituted a profound threat to the stability of the international system.[33] President Clinton reiterated this view in his address before the U.N. General Assembly in September 1993.[34] The belief that most cases of nuclear proliferation are destabilizing rested on the calculation that the probability of nuclear weapons being used in anger or by accident was related to the number of nuclear-armed states. The simple-minded calculation was that even a slight increase in the number of nuclear-armed states would magnify the risks of nuclear war.[35] The logic was that because the risks of nuclear war are too great to contemplate, any nuclear proliferation is *ipso facto* an undesirable action because it incrementally increases the risk of war.

The argument that nuclear proliferation has destabilizing consequences reflects the perceptions that existed during the Cold War, but there are three fundamental flaws in this reasoning. The first is the assumption that the number of nuclear-armed states somehow influences the likelihood that states will make the decision to use nuclear weapons. It is worth noting that the only time when nuclear weapons were used occurred when only one state possessed nuclear weapons. Nor did the existence of two, later four, and finally five nuclear powers lead to nuclear war.

The second is the cold-war principle which rejects the argument that some states have legitimate reasons for possessing nuclear weapons to increase their security. This, however, begs the question of whether only certain states are entitled to nuclear weapons. If this justification is open to debate, then there is support for the argument that other states should be able to manage the possession of nuclear weapons in peaceful ways. If true, this proposition weakens the recommendation that the United States has to support efforts to restrain the number of nuclear-armed states.

The third is the argument that the stability of the bipolar relationship between the superpowers was an historical anomaly which is not likely to repeat itself. There are no guarantees that the relatively stable relationship between the United States and Soviet Union will repeat itself. Unlike many nuclear-armed states today, the superpowers did not share the common border that can exacerbate tensions and lead to hostilities. In the absence of common historical and geographical tensions, the superpowers experienced a nuclear peace that might be unique. The presumption is that the United States and Soviet Union were uniquely qualified to manage nuclear weapons without resort to war,[36] or supremely lucky in their peaceful stewardship of nuclear weapons. Even the United States faced a number of nuclear accidents with nuclear weapons.[37] The reasoning is that if other states are not so lucky, there might be a nuclear crisis or war through accident or miscalculation. This danger is so great that the developed states have an obligation to limit the spread of nuclear weapons.

The principal factor that motivates international nonproliferation efforts is the judgment that some states pose a threat to international security, while others do not. The proponents of nonproliferation policy argue that the behavior of "rogue"[38] states — such as Iran, Iraq, North Korea, and others — exemplify the kinds of states in whose hands nuclear weapons could have a destabilizing influence.[39] There are sound reasons for raising the prospect of instability: the actions of Iran and Iraq, for instance, in their decade-long war; the premeditated actions of Iraq that provoked the 1991 Persian Gulf War; the animosity between North and South Korea; or the crisis in April 1990 between India and Pakistan.

While the behavior of India, Pakistan, Iran, and Iraq stems from quite different sources, the behavior of these states certainly raises concerns about the potential instability of a multi-nuclear world. But the unresolved question is whether these states as nuclear powers will be guided by the same level of caution that the United States, Soviet Union, China, and their allies exercised for nearly a half century. The problem is that one exception can equal nuclear war and the unprecedented slaughter of hundreds of thousands or millions of people.

It is important to acknowledge that imprecision is inherent in the language of proliferation. This exists when referring to states as destabilizing cases of nuclear ownership, when it is the leadership of a state, rather than the state itself, that is destabilizing.[40] The problem is that the condition of instability is subject to change as the leadership changes over time. The case of Iran provides an illustration of this point. Iran under the Shah was deemed stabilizing even if Iran had possessed nuclear weapons, but nuclear weapons in the hands of the present regime in Tehran is seen as destabilizing. There are, however, no guarantees about the future behavior of states that can be influenced by policy.

In the absence of convincing evidence that the new nuclear states will behave responsibly with nuclear weapons, the prudent action is to make the risk-averse assumption that they will not. From this conclusion follows the prescription in nonproliferation policy that it is prudent to deny access to nuclear technologies. This is the reasonable course of action. Nevertheless, the problem is the resulting inference about all forms of nuclear proliferation. There are difficulties with making the logical leap from the principle that *some* states may not manage nuclear weapons with care, to the principle that *all* new nuclear-armed states represent a destabilizing influence in international relations. But this is precisely what occurred.

Stabilizing Nuclear Proliferation. The alternative proposition that the United States, as well as the rest of the developed states must incorporate into their proliferation policies, is that some cases nuclear proliferation can have a stabilizing effect on the international system. This principle is controversial, in part

because it contradicts the nearly fifty year-long convention of resisting nuclear proliferation by most states, and because it would require a revolution in U.S. thinking about nuclear proliferation.

To be precise, nuclear proliferation can serve as a force for stability in international relations in several fundamental ways. First, nuclear weapons in the hands of an adversary may be the most efficient mechanism for restraining the impulses of states that historically led to war. The United States and the Soviet Union, for instance, managed their highly-antagonistic spheres of influence for fifty years without resorting to war. If nuclear weapons provided the major reason for their caution, then nuclear restraint might be imposed on the next generation of nuclear states once they realize that the consequence of diplomatic blunders is the annihilation of their state. By this reasoning, the original act of nuclear "proliferation" in the waning months of World War II by the United States, and the subsequent Soviet development of nuclear weapons, had profoundly stabilizing effects on international relations. Nevertheless, the politics of global confrontation did not escalate into a war in large measure because states were deterred by the possession of nuclear weapons.

Second, nuclear weapons reduce the incentive to allow regional disputes to escalate into major wars. An excellent contemporary example is provided by India and Pakistan in the spring of 1990, when they nearly were embroiled in a conflict over the Kashmir region in Pakistan.[41] Some observers credit the deescalation of the crisis to the realization in New Delhi and Islamabad that their status as nuclear-armed states conveyed the immediate danger of nuclear war. After the deescalation of the crisis, India and Pakistan initiated bilateral negotiations to establish security and confidence-building measures for preventing an outbreak of nuclear war on the subcontinent.[42] This is precisely the kind of caution induced by nuclear weapons that serves to avert war and thus increases international stability.

Third, nuclear weapons provide an effective instrument for stabilizing the politics of the breakup of the former Soviet Union. By almost any standard, many of the successor states of the former Soviet Union are embroiled in conflicts with various national

groups. Moreover, the frictions between Russia, Ukraine, and Belarus are contained by the existence of nuclear weapons in these states. As long as uncertainty about Ukraine's nuclear capabilities recreates a form of "existential" deterrence, Russia is effectively deterred from attacking Ukraine because of fears of public condemnation, war, and in an extreme sense, nuclear reprisal.[43] Whether carried by missiles or aircraft, nuclear weapons free Ukraine, Kazakhstan, and Belarus from fears about the territorial ambitions of Russia and their neighbors.

Fourth, the act of nuclear proliferation is no longer as politically symbolic of international instability as it once was. With the end of the Cold War there is no longer an inherent reason for the United States to restrict the possession of nuclear weapons to a select fraternity of states. The growing number of NPT signatories, additional adherence to the IAEA, nuclear-weapon free zones, the Chemical Weapon Convention, and the Biological Weapon Convention provide growing support to stop the proliferation of weapons of mass destruction. The formal instrument of this exclusionary principle is the Nuclear Non-Proliferation Treaty, which since its inception was criticized as an exclusionary and discriminating policy exercised by the great powers to restrain the impulses of others.[44] The obstacle to this movement has not been joined by those states which want nuclear weapons, and as long as some states remain adamant about nuclear ownership the traditional policy of non-proliferation will continue to hemorrhage support.

Fifth, the emerging reality is that there is precious little the developed states can do to prevent nuclear proliferation on the part of the very few states, such as North Korea, which are determined to enter the ranks of nuclear ownership. While these represent only a handful of the 184 states in the United Nations, India, Pakistan, and South Africa developed independent nuclear arsenals, despite the best efforts of the nuclear-weapons states. North Korea and Iran are moving along the same path toward nuclear ownership, and North Korea already may have nuclear weapons.[45] There is little merit to a policy that does not command respect and credibility. The successful efforts of many states to violate various non-proliferation regimes, as the case of Iraq illustrates so vividly

and poignantly, weakens the credibility of the fundamental principle that nuclear proliferation can be prevented.

The intellectual proposition that animates this study is the need to rethink the premise that all cases of nuclear proliferation are inherently destabilizing. Of course it is true that some states will pose fundamental challenges to international security whether or not they possess nuclear weapons. This implicit linkage between nuclear ownership and instability needs to be re-examined as evidence emerges that not all instances of nuclear proliferation merit condemnation as destabilizing and require the automatic opposition of the United States.

Finally, and most importantly, the notion of stabilizing nuclear proliferation makes a virtue out of necessity. The United States needs a more carefully modulated response to nuclear proliferation that narrows the gap between rhetoric and reality. The United States has not opposed all cases of proliferation, notwithstanding its rhetoric to the contrary. Great Britain and Israel are the most notable cases in which the United States accepted that nuclear ownership was consistent with U.S. national interests. The steps toward a more balanced nuclear proliferation policy include a reexamination of the criteria for identifying destabilizing cases of proliferation, an articulation of the elements of a new policy for the United States (Part IV), and specific recommendations for implementing this policy (Part V).

E. Criteria for Distinguishing Between Stabilizing and Destabilizing Proliferation

The ability to manage nuclear proliferation requires a systematic approach to distinguishing between stabilizing and destabilizing cases. To accomplish this, U.S. policymakers must rely on criteria that guide efforts to identify the worrisome cases of proliferation. This section examines several criteria which help to identify destabilizing cases of proliferation. The following list of criteria define cases of nuclear proliferation that are destabilizing from the perspective of many states, including the United States. While this list of criteria is not exhaustive, it illustrates the concerns that

must be brought to bear as the United States shapes a new policy for nuclear proliferation.

There are, however, several caveats about the use of criteria. The first is that there are no perfect examples of stabilizing or destabilizing proliferation, and neither are there any objective means for measuring the destabilizing consequences of proliferation. The process is an imprecise one and is meant to be, as are all instances in which leaders must make political judgments about the consequences of developments in international politics. There is no substitute for leaders who can make sound judgments and communicate those to the public.

Second, there is no science of proliferation. The thesis is not that precise, scientific judgments about the effects of nuclear ownership are possible or desirable. It is natural that the merits of individual cases of nuclear proliferation are bound to engender disagreements and disputes in the political system among policymakers, bureaucracies, and the public about the soundness of such judgments. This is a natural consequence of a condition in which there are no objective criteria for distinguishing among proliferation cases. But the absence of perfect criteria by which to measure destabilizing proliferation is not an adequate reason for paralysis in the policymaking arena.

Third, the larger objective of defining criteria is to stimulate a debate in which the political system explicitly acknowledges that not all cases of nuclear proliferation are equally dangerous or worrisome. Instead, it is to emphasize the critical need to broaden the debate about proliferation. By this it is meant that the United States has an obligation to make the case clearly and directly for distinguishing between types of proliferation, and defend that policy to minimize disagreement and paralysis in governmental policymaking circles.

Threaten Global or Regional Security. The universal characteristic of destabilizing cases of proliferation is that they threaten or harm global or regional security. The judgment that a particular case of nuclear ownership is destabilizing and hence, is not conducive to international security, should trigger systematic

evaluations of the effects of nuclear ownership on the region, allies, and overall stability. By contrast, non-proliferation policies during the Cold War traditionally defined the emergence of all cases of nuclear ownership as threats that must be opposed. For future proliferation cases, this judgment should apply to only a select few.

Threaten Regional Stability. The risk of destabilizing cases of nuclear proliferation is that they increase the political, economic, and military tensions in a region. These cases create inchoate fears among states that nuclear ownership raises the risks of aggression, or provoke fears that the political balance in a region will be dominated by radical states, ideologies, or movements. In the future, U.S. policymakers must analyze the effects of nuclear ownership using far broader criteria than fears of war. The greater risk may be the deterrent effect that nuclear weapons have on allies that are intimidated by regional hegemons. In the 1990s, there are no blanket formulae for demonstrating that all cases of nuclear proliferation are an inherent threat to regional stability. In those cases when national leaders draw this conclusion, it is clear that the United States will need to build support against nuclear proliferation.

Engender Climate of Terror. The possession of nuclear weapons by radical states or movements is destabilizing if it encourages a climate of fear and terror among other states. Nuclear weapons in the hands of states that profess support for radical ideologies, fervently oppose the rough status quo, and are capable of unpredictable, despotic actions, will engender fear among neighboring states. When it is evident that nuclear weapons may fall into the hands of states or non-state actors which use terror to achieve their political aims, the United States and the international community must generate policies — ranging from sanctions to intervention — that are designed to avert this prospect.

Threaten Friends and Allies. A core principle in American foreign policy is to assure U.S. allies, friends, and neutral states that the United States has a mutual interest in stability and will come to their assistance in times of trouble. The belief that the emergence of a nuclear-armed rogue state committed to interests contrary to those of U.S. allies provides a sufficient basis for

judging that a case of nuclear ownership has potentially destabilizing consequences. This criterion also poses hidden dangers however when two states, both of whom are allied with the United States, head toward the nuclear ownership that each considers destabilizing.

Hegemonical Ambitions. Nuclear weapons in the hands of states that aspire to establish regional hegemony provide a classic case of destabilizing nuclear ownership. The perception that nuclear weapons are an instrument of aggressive or hegemonical ambitions almost certainly shifts the policy debate to the conclusion that the United States confronts a destabilizing case of proliferation. While this case is easy to state, it is difficult to express in concrete terms because states rarely express hegemonical ambitions in a public or direct way. Nevertheless, the developed states can use their best judgment to identify cases in which a state appears to have hegemonical ambitions.

Increase Risk of Intervention. The United States must be capable of maintaining its ability to protect friends and allies by the threat of military intervention. The concern for the United States is that the need to conduct military operations in defense of a regional ally will be at severe risk at the hands of a nuclear-armed opponent. The objective is not to make the world safe for intervention, but to diminish the chances of regional war by minimizing the likelihood that states which contribute to regional instability will get their hands on nuclear weapons.

No Simple Solutions to Proliferation Policy. The United States needs to be alert to the danger of the political process transforming these general criteria into rigid formulae for guiding proliferation policy. The intention of these criteria is to steer the debate and U.S. policymakers toward identifying the truly destabilizing cases of nuclear proliferation that require a careful focusing of government action. They are not meant to be used in a strict fashion, but as general guides to action. As such, this is not a formula for proliferation policy that reduces policy choices to simple responses. Policymakers will find these criteria useful only if they elucidate the dangers of nuclear proliferation in select

instances amidst the background of proliferation activities, and act to avert the cases that require policy responses.

The presumption is that the emerging generation of policymakers will demonstrate the acumen necessary for identifying the cases that are stabilizing and managing those cases in ways that increase international stability. The hope is that the ability of policymakers to identify the destabilizing cases of nuclear proliferation will allow them to focus their political, economic, and military resources on the truly worrisome cases of nuclear proliferation.

Notes

1. The term "bipolar" must be used with a fair degree of caution and precision. For at least two decades, in many areas the concept of bipolarity was passe' because it did not encompass various regional events, including conflicts in the Middle East. These wars occurred without the direct control of the United States or the Soviet Union, and thus diminished the relevance of bipolar models of international relations. But bipolarity is relevant, however, in the narrow military sense of a competition between two nuclear-armed superpowers, and the resulting tensions between the East and West. It was only in this narrow sense that bipolarity still existed until the end of the cold war.

2. See William C. Potter, *Nuclear Power and Nonproliferation: An Interdisciplinary Perspective* (Cambridge: Oelgeschlager, Gunn & Hain, 1982), for a detailed outline of the incentives and disincentives that influence states's decisions to possess nuclear weapons. See also Mitchell Reiss, *Without the Bomb: The Politics of Nonproliferation* (New York: Columbia University Press, 1988), pp. 247-69, for additional background on disincentives.

3. See Barton J. Bernstein, "Crossing the Rubicon: A Missed Opportunity to Stop the H-Bomb?," *International Security*, Fall 1989, Vol. 14, No. 2, pp. 140-41, for J. Robert Oppenheimer's concerns about the dangers of the development of thermonuclear weapons.

4. The letter from Albert Einstein to President Roosevelt urging the development of the atomic bomb is one of the significant events in the politics of the twentieth century. See Richard G. Hewlett and Oscar E Anderson, Jr., *The New World, 1939-1946* (Philadelphia: Pennsylvania University Press, 1962), pp. 16-17 and pp. 44-52.

5. Some scholars argue that the United States has a peculiar tendency to use technology to solve problems that are strategic in nature. For example, see Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington, IN: Indiana University Press, 1977). For arguments about the influence of technology on war, see Russell F. Weigley,

"Book Review: War and the Paradox of Technology," *International Security*, Vol. 14, No. 2 (Fall 1989), pp. 198-202.

6. Some argue that the U.S. strategy has relatively little influence on the conduct of Soviet policy. See Marshall D. Shulman, *Beyond the Cold War* (New Haven: Yale University Press, 1966).

7. For overviews of the evolution of Soviet strategic thinking about nuclear weapons in the conduct of foreign policy, see Honore M. Catudal, *Soviet Nuclear Strategy From Stalin to Gorbachev: A Revolution in Soviet Military and Political Thinking* (Atlantic Highlands, N.J.: Humanities Press International, 1988); Raymond Garthoff, *Deterrence and the Revolution in Soviet Military Doctrine* (Washington, D.C.: Brookings, 1990); Stephen Shenfield, *The Nuclear Predicament: Exploration in Soviet Ideology*, Chatham House Papers No. 37 (London: Routledge and Kegan Paul, 1987).

8. See Roger Cohen, "France Tells U.S., 'I Oppose, Therefore I Am'," *New York Times*, January 30, 1994, p. E1, for a contemporary example of French independence.

9. There is an extensive literature on game theory approaches to solving the problems of the proper strategies for multiple actors. See Martin Shubik, *Game Theory in the Social Sciences* (Cambridge: MIT Press, 1982), for an introduction to the more important ideas.

10. See Seymour M. Hersh, *The Samson Option* (New York: Random House, 1991), for a description of Israel's development of nuclear weapons.

11. See J.W. de Villiers, Roger Jardine, and Mitchell Reiss, "Why South Africa Gave Up the Bomb," *Foreign Affairs*, November/December 1993, pp. 98-109, for a discussion of the ANC's opposition to South Africa's denuclearization. As the authors argue, "The ANC believes that a major objective of this unilateral restructuring is to place these institutions beyond the reach of an ANC-led government, and heading off this restructuring by the apartheid government sits high on the ANC's domestic agenda."

12. South Africa appears to be the first nation to give up nuclear weapons voluntarily after the successful completion of its program prior to the transition to majority rule in South Africa. See F.W. De Klerk, *Speech by the State President to a Joint Session of Parliament on the Nuclear Non-Proliferation Treaty*, March 24, 1993, in which he said that "South Africa did, indeed, develop a limited nuclear deterrent capability. The decision to develop this limited capability was taken as early as 1974, against the background of a Soviet expansionist threat in Southern Africa, as well as prevailing uncertainty concerning the designs of the Warsaw Pact members. The build up of the Cuban force in Angola from 1975 onwards *reinforced the perception that a deterrent was necessary and the fact that it could not rely on outside assistance, should it be attacked.*" (emphasis added) For additional material on the decision within the South African Government, see J.W. de Villiers, Roger Jardine, and Mitchell Reiss, "Why South

Africa Gave Up the Bomb," *Foreign Affairs*, November/December 1993, pp. 98-109.

13. See "Brazil and Argentina: IAEA Safeguard Accord," *US Department of State Dispatch*, December 23, 1991, p. 907; Jean Krasno, "Brazil, Argentina Make It Official," *Bulletin of the Atomic Scientists*, April 1992, pp. 10-22, for background on the nuclear safeguards agreement.

14. See William C. Potter, *Nuclear Power and Proliferation*, for a comprehensive survey of the relationship between civilian nuclear power, proliferation, and the means to regulate proliferation.

15. The NPT's classic bargain between the nuclear "Haves" and the nuclear weapon "Have-nots" is that the latter will receive free access to nuclear energy technology in return for their willingness to forego the bomb. The "haves" attempted to steer the "have-nots" away from the breeder reactors and other reactors that can produce weapons-grade fissile material. See Joseph R. Pilat and Robert R. Pendley, *Beyond 1995: The Future of the NPT Regime* (New York: Plenum Press, 1990).

16. A classic example is Israel's nuclear weapons program, which sought to offset the greater resources of the Soviet Union and the Arab world. But it was the lack of economic and technological resources that held back the weak states rather than the fact that they were unaware of the value of nuclear weapons.

17. See Theodore A. Postol, "Lessons of the Gulf War Experience with Patriot," *International Security*, Winter 1991/92, pp. 119-171.

18. This argument may hold for both high and low casualties. In the case of high casualties, it is interesting to speculate on the U.S. willingness to fight against a nuclear-armed Iraq. On the other hand, the loss of 18 soldiers in the Somalia in October 1993 provoked a national uproar that led to President Clinton to impose a March 31, 1994 deadline for the withdrawal of U.S. forces from Somalia. See Ruth Marcus and Ann Devroy, "Clinton to Double Force in Somalia," *Washington Post*, October 8, 1993, p. A1.

19. Sweden is an excellent example of a state wherein the risks persuaded it to forgo nuclear weapons. For the argument that Sweden decided that while nuclear weapons would increase its military strength, its overall security would be reduced, see Mitchell Reiss, *Without A Bomb: The Politics of Nuclear Non-proliferation*, pp. 37-77, 252.

20. The fact that preemptive attacks against nuclear weapons programs have been confined to the Persian Gulf region raises the question whether this represents isolated and situation-dependent phenomena.

21. See Jed C. Synder, "The Road to Osiraq: Baghdad's Quest for the Bomb," *The Middle East Journal*, Autumn 1983, p. 580.

22. Ibid.

23. In the summer of 1993, the United States launched cruise missile attacks against Iraqi facilities in response to allegations that Iraq attempted to assassinate former President Bush.

24. It should be noted, however, that the existence of nuclear weapons can strengthen regional stability. In the case of the Middle East, Israel's putative nuclear program has made the region more stable. See Shai Feldman, *Israeli Nuclear Deterrence* (New York: Columbia University Press, 1983), for insights into the effects of Israel's nuclear weapons on regional stability.

25. See David Albright and Mark Hibbs, "Iraq's Bomb: Blueprints and Artifacts," *Bulletin of Atomic Scientists*, January/February 1992, pp. 31-40.

26. As costly as nuclear weapons programs are, nuclear deterrents are less costly than a conventional deterrent, as the United States argued throughout the Cold War. Further, while nuclear weapons are very costly, they are not nearly as costly as the major war that nuclear weapons can prevent. In this context, the decision to acquire nuclear weapons can be seen as both rational and cost effective.

27. See Ann Marie Cunningham, "Wanted: An Astute Nuclear Detective," *Technology Review*, October 1993, p. 13.

28. See Cunningham, "Wanted: An Astute Nuclear Detective," p. 13, for criticisms about the IAEA's contradictory goals of promoting nuclear energy and preventing nuclear proliferation.

29. The Pressler Amendment stipulates that the President of the United States must provide an annual certification to the Congress that Pakistan does not possess a nuclear device. If the President cannot so certify, then U.S. economic and military aid to Pakistan must be terminated.

30. The Nuclear Non-Proliferation Treaty represented a major initiative to discourage nuclear proliferation, even though it was a voluntary association with extremely weak enforcement mechanisms. It enshrined the notion of a "nuclear club" that was reluctant to accept new members and which used the threat of sanctions to dissuade states from nuclear ownership. The fundamental weakness of the NPT is the guarantee to non-weapons states that they will have access to nuclear power technology as compensation. The result is that the "Atoms for Peace" programs ultimately train states to produce "atoms for war." See Joseph F. Pilat and Robert E. Pendley (eds.), *Beyond 1995: The Future of the NPT Regime* (New York: Plenum Press, 1990), for the text of the NPT and various documents.

31. These regimes include Information Controls, NPT Suppliers Controls (Zangger Trigger List), London Nuclear Suppliers Guidelines, International Atomic Energy Agency, and the Nuclear Non-Proliferation Treaty. See Lewis A. Dunn, *Containing Nuclear Proliferation*, Adelphi Paper No. 263 (London: International Institute for Strategic Studies, Winter 1991), p. 29, for a useful discussion of these regimes.

32. See Kathleen Bailey and Robert Rudney (eds.), *Proliferation and Export Controls* (Fairfax: National Institute for Public Policy, 1993), for a discussion of the role and limits of export controls in preventing nuclear proliferation.

33. There are two opposing views on the extent to which nuclear weapons were a force for stability during the cold war. John Lewis Gaddis, "The Long Peace: Elements of Stability in the Postwar International System," in Sean M. Lynn-Jones, ed., *The Cold War and After: Prospects for Peace* (Cambridge, Mass: MIT Press, 1991), pp. 22-25, argues that nuclear weapons significantly increased the stability of the international system. For the opposite view, see John Mueller, "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World," in Lynn-Jones, *The Cold War and After*, pp. 45-69, for the argument that nuclear weapons was not the fundamental force for stability.

34. See "President Clinton's Address to the U.N. General Assembly, September 27, 1993," *Foreign Policy Bulletin*, November/December 1993, p. 51.

35. See Solly Zuckerman, "Nuclear Time Bomb," *Science Digest*, Vol. 90, August 1982, pp. 12-14, for an analysis of the assertion that the number of nuclear weapons influences proportionally the probability of nuclear use. The intellectual origin of this work is that of Lewis Frye Richardson, *The Statistics of Deadly Quarrels* (Pittsburgh: The Boxwood Press, 1960), who argued that wars occur with a predictable regularity.

36. See Steven E. Miller, "Assistance to Newly Proliferating Nations," in Robert D. Blackwill and Albert Carnesale (eds.), *Coping with New Nuclear Nations* (New York: Council on Foreign Relations, 1993), for the argument that it is far from clear whether the new nuclear states will be able to assure the security of their nuclear weapons.

37. See Scott D. Sagan, *Organizations, Accidents, and Nuclear Weapons* (Princeton: Princeton University Press, 1993), for background on organizational accidents that the United States confronted during its stewardship of nuclear weapons, thus highlighting skepticism about the ability of new nuclear states to safeguard nuclear weapons.

38. The problem with the use of the word "rogue" to describe state behavior is its implicit approval or disapproval of actions on the basis of whether they conform with U.S. or Western standards. The use of "rogue" also tends to be linked to states that are considered hostile to the interests of the writer.

39. For versions of this argument, see Dunn, *Containing Nuclear Proliferation*; Leonard Spector, *New Nuclear Nations* (New York: Vintage Books, 1985).

40. The classic formulation in international relations theory is to dismiss the relationship between the nature of the domestic regime and the foreign policy actions of the state. For an alternative view, see Raymond Aron, *Peace and War—A Theory of International Relations* (Garden City, N.Y.: Doubleday, 1966; Stanley Hoffmann, *The State of War: Essays on the Theory and Practice of International Politics* (New York: Praeger, 1965).

41. See Seymour M. Hersh, "On the Nuclear Edge," *The New Yorker*, March 29, 1993, pp. 56-73, for a detailed review of the role of nuclear weapons in the 1990 Kashmir crisis, and the mutual Indo-Pakistani agreement not to escalate future crises by preemptive strikes against the others nuclear facilities.

42. See Michael Wines, "New Strategies to Stem Proliferation of Weapons," *New York Times*, September 30, 1990, p. A13.

43. For a discussion of uncertainties about Ukraine's ability to retarget the SS-19s and SS-24s, and whether Ukraine ultimately will get the capability to employ the air-launched cruise missiles and gravity bombs, see Part III.

44. See K. Subramanyan, "An Equal-Opportunity NPT," *Bulletin of the Atomic Scientists*, June 1993, pp. 37-40, for criticisms about the discriminatory nature of the NPT.

45. Press reports at the end of 1993 indicated that the current CIA assessment concurred in by most U.S. intelligence agencies concluded that North Korea already has a nuclear weapon. Only the State Department appeared to dispute this assessment, while the White House attempted to downplay the report during ongoing negotiations with North Korea. See Steven Engelberg with Michael R. Gordon, "Intelligence Study Says North Korea Has Nuclear Bomb," *New York Times*, December 26, 1993, p. A1.

Part III

Emerging Nuclear States: Thinking Through Issues and Options

This section examines four current examples of nuclear proliferation — Ukraine, North Korea, Pakistan, and Iran — that challenge the traditional conceptions of proliferation. The focus of this section is the motivations that drive these states toward the possession of nuclear weapons. The objective is to illustrate why the United States needs to adjust its policies to coexist within a truly multi-nuclear world in which proliferation has the twin effects of both enhancing and degrading international stability.

A. Post-Soviet Disintegration: Ukraine's Nuclear Deterrent

1. Background

The case of Ukraine's nuclear deterrent is of importance because it exemplifies the emergence of a nuclear arsenal from the disintegration of a nuclear superpower. As the first case of the political and military collapse of a nuclear state that spawned nuclear successor states, Ukraine offers insights into the decisions of states that inherited the former Soviet Union's nuclear arsenal. Ukraine also merits attention because it symbolizes opposition to the denuclearization of the nuclear successor states of Kazakhstan and Belarus.

January 1994 Summit. The visit of President Clinton to Russia and Ukraine in January 1994 is a critical element in the disposition of Ukraine's nuclear weapons. The United States, Russia, and Ukraine signed a deal in Moscow in which Ukraine agreed to dismantle its nuclear arsenal.[1] The United States pledged $176 million to dismantle the weapons and $155 million in economic assistance. Ukraine also will receive roughly $1 billion in the form of fuel rods for its nuclear energy program from the sale of uranium that is removed from the warheads in Ukraine's possession.[2]

The fate of this accord will remain in doubt for months, if not years. This agreement-in-principle will not be submitted to Ukraine's Parliament (Rada) until after the parliamentary elections in March 1994. Members of the Rada expressed profound reservations if not opposition about the accord,[3] as indicated by reports that some parliamentarians are "not too enthused about the whole process."[4] Recent attacks against President Kravchuk for weakness and betrayal[5] complicate his already vague legal powers to sign and enforce treaties.[6] The strength of Crimea's secessionist movement fuels fears in Ukraine that Russia might interfere in the affairs of the Soviet successor states,[7] though Kravchuk dismissed this concern.[8] In February, the Rada cast two contradictory votes on the agreement signed by Kravchuk, which leaves Ukraine's pledge to denuclearize in doubt. Those votes supported adherence to the Lisbon Protocol and START-1, but leave accession to the NPT in doubt.[9] Finally, there are indications that Kravchuk will not run for re-election in June, casting further doubt on Ukraine's pledge to relinquish its nuclear weapons to Russia.[10]

Origins. Since the disintegration of the former Soviet Union in 1991, Ukraine continues to move toward an independent foreign policy[11] and the possession of an independent nuclear deterrent. Ukraine's President Leonid Kravchuk and other Ukrainian officials often declare that Ukraine's intention is to become a nuclear-free state.[12] In December 1993, President Kravchuk said that "Our state is going toward and will reach nonnuclear status."[13] Ukrainian Parliament Chairman Ivan Plyushch stated

that "Ukraine still intends to become a nuclear-free state."[14] These statements, however, probably represent "half-hearted attempts" in view of declarations by Ukraine's legislators that they want to declare Ukraine as an interim nuclear weapons state.[15]

By late 1993, Kravchuk argued that Ukraine planned to keep some of the nuclear weapons on its soil,[16] because in his judgment Ukraine had no alternative but to keep nuclear weapons to protect its security.[17] Ukraine's Rada rejected non-nuclear status on numerous occasions until steps are taken to protect its security. The nuclear policy of Ukraine continues to be dominated by nationalist groups in the Parliament that fervently want to possess nuclear weapons.[18] At the time of this writing, there remain powerful divisions in the Rada over the nature of Ukraine's nuclear policy.[19]

Pronouncements on a non-nuclear status, however, are in fundamental conflict with Kiev's deliberate steps since 1991 toward acquiring functional control over the weapons that it inherited from the former Soviet Union. While Ukraine signed an agreement with the United States in May 1992 (Lisbon Protocol) to relinquish its nuclear weapons and become a non-nuclear state,[20] it has taken steps to cement control over the nuclear weapons on its soil. In early 1994, only the technical barriers of its inability to circumvent Russian Permissive Action Links (PALs) and international treaty constraints obstruct Ukraine's ability to exercise full operational control over the nuclear weapons on missiles and bombers deployed on its soil. It is increasingly likely that the Ukrainian rhetoric in support of denuclearization is simply an interim tactic to buy time until they decipher the retargeting codes that control the missiles.

Ukraine's Nuclear Forces. In 1994, Ukraine's nuclear forces consist of remnants of the former Soviet Union's strategic nuclear arsenal.[21] This force consists of Ukraine 176 multi-warhead intercontinental ballistic missiles (ICBMs), which includes 130 six-warhead SS-19 missiles and 46 ten-warhead SS-24 missiles, for a total of 1,240 nuclear warheads. Ukraine also possesses 564 nuclear weapons on cruise missiles and gravity bombs that are deployed with long-range bombers.[22] There are reports that

Ukraine has established effective custody, but not operational control, of the cruise missiles and gravity bombs.[23]

The case of Ukraine's 176 ICBMs is more complicated and subject to considerable uncertainty. It is clear, as most reports allude, that Ukraine is working vigorously to establish operational control over its forces. At the time of this writing (February 1994), Ukraine has achieved "administrative control," but apparently has not established operational control. By most accounts, Kiev steadfastly continues to take steps toward complete control of the ICBMs. The process by which Ukraine establishes control over these nuclear forces, and thus becomes a formal nuclear-weapons state, has several components.

Physical Custody. Ukraine must establish physical custody over the weapons. This means that military personnel loyal to Kiev must guard the weapons sites — in this case, ICBM silos, bomber bases, and nuclear weapon storage depots. The implicit logic of control means that the political authorities must have confidence that the soldiers who man the weapons will follow orders from Ukraine's leadership to redeploy or use those weapons.

Ukraine has taken a number of steps to establish custody over the forces. In June 1992, Ukrainian Defense Minister Morozov declared administrative control over the Strategic Nuclear Forces based in Ukraine. In conjunction with this decree, Morozov declared that all former Soviet troops on Ukrainian territory, many of whom are Russian, must swear allegiance to Ukraine. He also demanded a declaration of political loyalty from the 43rd Missile Army, which is responsible for all ICBMs in Ukraine. The preponderance of evidence is that the personnel in the former Soviet strategic bomber units based in Ukraine, who are responsible for guarding the cruise missiles and gravity bombs for these bombers, have sworn their allegiance to Kiev. The troops guarding the area surrounding the 176 ICBM silos pledged their loyalty to Kiev.

The problem, however, is that the missile launch control officers in the silos remain under Ukrainian "administrative" control while still under Russian operational control.[24] There are reports that all missile launch officers refused to take an oath of loyalty to

Ukraine.[25] While Ukraine's custody of nuclear weapons on its territory is inchoate, it is likely to change as Kiev puts pressure on missile officers to accede to Ukraine's demand for their loyalty.

Operational Control. Ukraine must establish and maintain clear operational control over nuclear weapons, including the ability to launch and deliver weapons to appropriate targets. To do so, Ukraine must have the ability to enable, or render inert, the Russian PAL mechanisms that allow the arming and firing of the weapons. Ukraine's leadership also must have the appropriate targeting information and guidance data to control the missiles and warheads.

In terms of operational control, all guidance systems for cruise missiles were removed by military personnel loyal to Russia prior to their return to Russia in 1992. Reports indicate that the PALs on these weapons remain intact, and that Russia controls the launch codes. The same applies to the gravity bombs for which PALs reportedly are intact along with Russian control over the codes, and various protective mechanisms to prevent unauthorized use.[26] Similarly, Ukraine's 176 ICBMs cannot be armed or launched without the codes and authority that reside in Moscow.

While President Kravchuk theoretically retains a veto on launches,[27] he still cannot initiate a launch on his own authority, precisely because Ukraine does not possess the necessary codes — despite the ongoing efforts of Ukraine's military to decipher them. There are reports that U.S. and Russian intelligence analysts believe that Ukraine will crack the codes by the spring of 1994.[28] Ukraine, however, consistently denies that it is attempting to establish operational control over nuclear weapons.[29]

To circumvent the possibility of Ukrainian control over ICBMs, Russia is pursuing other options. To degrade the effectiveness of Ukraine's nuclear warheads, Russia refuses to supply them with fresh tritium and replacement neutron generators, which are critical elements of nuclear warheads.[30] Russia argues that re-supplying these items would be a violation of Russia's obligations under the Nuclear Nonproliferation Treaty not to help other states acquire nuclear weapons. Russian officials hope that this approach

ultimately will make Ukraine's nuclear weapons inert well before Ukraine establishes complete control and the requisite skills to maintain the warheads.[31] Russia's Foreign Minister Andrei V. Kozyrev warned Ukraine that the possession of deteriorating nuclear warheads could lead to an accident.[32]

Sovereign Control and International Jurisdiction. Ukraine must establish international jurisdiction over the nuclear weapons on its soil. There are several mechanisms by which Ukraine could do so, including formal statements about control and membership in the Nuclear Nonproliferation Treaty. However, because nuclear weapons from the former Soviet Union are located physically on Ukraine's territory, Ukraine can make the argument that its rights of ownership are self-evident in the process of inheritance.[33]

Sovereign control over Ukraine's nuclear weapons continues to be a subject of dispute in the formal legal sense. Ukraine has not asserted an absolute claim of ownership because Russia still maintains operational control. Moscow remains resolute in its view that Ukraine has no right to possess weapons inherited from the former Soviet Union, insisting that any deviation from this position would be a *de facto* transfer of a nuclear capability prohibited by the NPT.

Negotiations with Russia. In the midst of these nuclear machinations, Russia and Ukraine are involved in regular negotiations on the possession of the former Soviet nuclear arsenal.[34] There are constant claims by Russian officials that Ukraine seeks control of nuclear weapons.[35] Russia remains obdurate with respect to Ukraine's claim to sovereign control and ownership demands, but Moscow agreed to negotiate Ukraine's unyielding demands for security guarantees and $3 billion in financial compensation for the dismantlement of nuclear weapons.[36] Russia has agreed to provide security guarantees to Ukraine "in accordance with international norms" along with other nuclear powers, notably the NPT depository states of the United States and the United Kingdom. The tentative guarantees, still not formal, include assurances of the non-use of force and guarantees of the inviolability of Ukraine's borders.

Russia also offered to reimburse Ukraine for uranium resulting from weapons transferred from Ukrainian territory and dismantled in Russia.[37] Moscow proposed to destroy the strategic missiles and warheads remaining on Ukrainian territory, and to continue to negotiate arrangements for the verification of the destruction of the tactical nuclear weapons repatriated to Russian in 1991 and 1992.

The fate of Ukraine's nuclear arsenal remains very much in doubt. While Russian officials are optimistic that these issues will be settled amicably and that further Ukrainian progress on creeping possession can be prevented, the domestic political equation in Ukraine almost completely precludes such an outcome. The dominant Russian belief is that Kiev is using nuclear weapons as a bargaining chip to obtain financial benefits from Russia and the developed world. As a result, Moscow believes Ukraine is playing a "dangerous game."

Ukraine's position on its nuclear status is directly influenced by political and economic instability in the nascent democracy. Kravchuk yields to pressure from nationalist groups that are united in their view that Ukraine's political leadership cannot acquiesce to Russian pressure. The success of the extreme nationalist Liberal Democratic Party in Russia's parliamentary elections in December 1993 strengthened Ukraine's resolve to possess a nuclear deterrent. The head of the Ukrainian Parliament's Foreign Affairs commission issued a stark, "I told you so," in reference to keeping a Ukrainian nuclear arsenal.[38]

2. Nuclear Incentives

The decision to possess nuclear weapons involves a complex array of incentives and disincentives. In Ukraine's case, there are several prominent factors that shape its decision to become a nuclear-armed state.

Deter Adversaries. The deterrence of adversaries is the first, and perhaps most compelling, imperative behind Ukraine's decision to retain the remnants of the Soviet nuclear arsenal. Various elements of Ukrainian society have articulated, since its inception as an independent state in December 1991, that Russian

aggrandizement and intimidation demonstrate a fundamental contempt for Ukraine's independence.[39]

Ukraine's political leadership consistently states that nuclear weapons are a nearly absolute guarantee of Ukraine's sovereign territory and independence.[40] As one parliamentarian wrote, "these weapons do defend Ukrainian sovereignty."[41] The leadership uses remarkably consistent language to express concerns that the re-emergence of Russian "imperialist"[42] ambitions is a possibility Ukraine cannot afford to discount. The consensus in Ukraine's political and military leadership is that against the background of the highly uncertain future of democratic reform in Russia,[43] nuclear weapons provide an explicit security guarantee for Ukraine.[44] To buttress Ukraine's strategic position of independence, Ukraine established security relationships with Hungary,[45] Turkey,[46] and Slovakia,[47] proposed a new collective security system for Europe,[48] and has established "good" relations with Iraq.[49] Delegations from Ukraine and North Korea met in Kiev for what might evolve into an unofficial nuclear alliance.[50]

Domestic Politics. With the emergence of Ukraine's independence in 1991, Ukrainian national politics has been dominated by a schism between the eastern and western regions. Public opinion polls show stronger support in the East for the elimination of nuclear weapons in Ukraine, while those in the western and central regions of Ukraine favor preserving nuclear weapons as a guarantor of security.[51] The population in the East has a more benign view of the danger posed by Russia, opting for economic cooperation with Russia and the return of nuclear weapons to Russia. The people in the west, however, are more virulently nationalistic, reflecting an endemic distrust of all things Russian. In the summer of 1993, there was slightly more support for eliminating nuclear weapons than for retaining them.

The nationalists vehemently support the development of Ukraine's nuclear arsenal to protect Ukraine's independence and security. They see nuclear weapons as the ultimate guarantee of Ukraine's independence, and reject various political (treaties) and economic (trade relationships) forms of cooperation as

inherently unsafe. The National Conservative Party, which exercises considerable power in the Rada and clearly commands the attention of President Kravchuk, believes that Ukraine should be a full member of the nuclear club.[52] Ukraine also has a powerful anti-nuclear movement, which is fueled by concerns about nuclear weapons and technologies and animated by fears that are derived from the Chernobyl incident.[53]

Political and Military Leverage. Perhaps the second most powerful incentive on the part of Ukraine focuses on the political and military leverage afforded by nuclear weapons. Ukrainian officials argue that this falls into two categories. The first is the political leverage that allows Ukraine to draw the attention of the United States and Europe to the strategic position of Ukraine. The very nature of nuclear weapons is such, the argument goes, that the United States and Europe cannot ignore threats to Ukraine, regardless of the source. While the United States could watch the dismemberment of a non-nuclear Ukraine, it could not remain aloof if a nuclear-armed Ukraine dragged Europe into the fray.[54] For Ukraine, nuclear weapons are a political symbol of its desire to prevent a political reconsolidation into Russia, and of its determination to deter any such actions.

The other component is military leverage in the form of a guarantee of Ukraine's security. Nuclear weapons, most Ukrainians believe, provide the only true guarantee of Ukrainian security because more than any other weapon they put Russia's survival at risk. The Russian leadership, according to this argument, understands with nearly absolute certainty that any attempt to coerce or reintegrate Ukraine into Russia will pose unacceptably high risks for the survival of Russia. The prevailing view in Ukraine is that all other forms of security guarantees are inferior to that of a nuclear deterrent. The tenacity with which Ukraine holds to this position is the best indication of the validity of the argument in Ukrainian eyes. It is evident that the inability of the United States or Russia to dislodge Ukraine from this view underscores the strength of conviction that unifies Ukraine's civil society and political leadership.

3. Nuclear Disincentives

There is an obviously powerful struggle in the Ukraine's government and society over the decision to retain nuclear weapons. Ukrainian hesitation to retain nuclear weapons reflects the disincentives to nuclear ownership that have been considered by Ukraine's political leadership during the last two years.

Military Disincentives. The term "military disincentives" is a none-too-felicitous phrase for preemptive attack. Ukraine's leadership clearly worries about the prospect of a Russian preemptive strike against Ukraine's nuclear forces with nuclear or conventional forces. The Russian General Staff inevitably plans such attacks,[55] as the Ukrainians are obviously aware. There is no doubt that Ukraine's leadership clearly understands the fact that the possession of nuclear weapons increases the risks of Russian preemption in a crisis. With the promulgation of its new military doctrine, Russia carefully phrased its doctrine to include the threat from Ukraine's nuclear forces.[56]

Economic Disincentives. The economic disincentives for Ukraine to retain nuclear weapons fall into two categories. First, Russia threatens to withhold economic goods, such as oil[57] and electric power, if Ukraine fails to relinquish nuclear weapons. The explicit threat is that Russia will impose trade restrictions against Ukraine until the nuclear weapons are relinquished. Second, the United States and Europe have linked economic aid to Ukraine's cooperation on nuclear matters. Specifically, the Clinton Administration has said repeatedly that the United States will provide economic aid to help Ukraine dismantle its ballistic missiles and place weapons' grade plutonium in an international storage site provided that Ukraine relinquishes its nuclear weapons.[58]

Russia's economic disincentives pose a significant threat to Ukraine's economy, which President Kravchuk warned is "on the brink of an economic catastrophe."[59] Ukraine depends on Russia for 90 percent of its gas and oil. It also suffers from hyper-inflation of roughly 80 percent per month, a decline in industrial production, and experiences shortages of electricity and coal.[60] Ukraine established trade relationships however with Turkmenistan, Iran, and

the Gulf States to reduce its energy dependence on Russia.[61] In addition, Ukraine faces the monumental costs of cleaning up environmental disasters of an unprecedented magnitude.[62] In this climate, U.S. economic aid could help a great deal. If Ukraine chooses to forego such aid, it will put Ukraine's government at risk in the event that popular support for economic reform disappears in the face of an economic collapse.

Unrelenting U.S. Pressure. The unifying theme in U.S. policy toward Ukraine is the need to pressure Ukraine to surrender its nuclear arsenal to Russia, and become a non-nuclear state as defined by the Nuclear Nonproliferation Treaty. The Bush Administration viewed a non-nuclear Ukraine as an important objective, and applied diplomatic pressure toward this end.

The Clinton Administration has reiterated its view in unambiguous terms that Ukraine must surrender its nuclear arsenal to Russia if it is to be accepted as a willing participant in efforts to denuclearize the former Soviet arsenal.[63] To strengthen that policy, several requests by President Kravchuk to meet with President Clinton were rejected by the United States in the spring of 1993. To increase pressure on Ukraine, the United States delayed the normalization of relations with Ukraine, amidst a stream of veiled diplomatic threats, until Ukraine relinquished its nuclear weapons. The Clinton Administration clearly established the principle that a non-nuclear Ukraine is a fundamental interest of the United States. Ukraine, however, consistently resists these overtures while strengthening the conditions under which it would dismantle the nuclear arsenal.[64]

Russian Pressure. The Russian Government, under the stewardship of President Boris Yeltsin, has maintained unremitting pressure on Ukraine to relinquish its nuclear weapons.[65] Russia has issued numerous serious warnings to Ukraine that its failure to return nuclear weapons will have dire consequences for Ukraine's political and economic security — threats which Ukraine has interpreted as actions best deterred by nuclear weapons.

A constant theme in Russian foreign policy pronouncements is that Ukraine should renounce nuclear weapons and become a

nuclear-free state to preserve international stability.[66] Russia's new military doctrine implicitly threatens Ukraine by its pledge not to attack signatories of the NPT, which Ukraine has refused to sign.[67] Nevertheless, from the perspective of Article 6 in the NPT, any delay in the ratification of START-1 that is caused by Ukraine's reluctance to rid itself of nuclear weapons, threatens to undermine efforts to extend the NPT in the 1995 Review Conference.

Russia continues to warn Ukraine that the resolution of the nuclear weapons issue remains absolutely fundamental to the establishment of normal relations. Ukraine's leadership also fears that Russia's policy on nuclear weapons reflects a "START gambit." Ukraine's presidential advisor on foreign policy accused Russia of "wanting to carry out" START-1 force reductions at Ukraine's expense.[68] The perception in Ukraine is that the United States and Europe are supporting Russia's "START gambit" by its policy of pressuring Ukraine to surrender its nuclear weapons.[69] This *entente* at Ukraine's expense is interpreted as a sign that others will acquiesce to Russian attempts to use intimidation and pressure to isolate Ukraine over the nuclear issue.[70] Perhaps worse, Ukraine would have to deal with Russia from the inferior position as a non-nuclear state if it relinquished its nuclear weapons.

Various European powers, most notably Germany, have encouraged Ukraine to relinquish its nuclear weapons to Russia. The German Chancellor Helmut Kohl[71] and the Defense Minister Volker Ruehe suggested that Ukraine's relationship with Germany would be enhanced if Ukraine signed the NPT and formally became a non-nuclear state.[72] Germany offered financial assistance to help Ukraine dismantle its nuclear weapons.[73]

4. A Stabilizing Case

On balance, Ukraine's possession of a nuclear deterrent is a force for stability in the post-Soviet security environment in Eastern Europe. This judgment is independent of whether Ukraine has operational control over the nuclear weapons on its soil. Ukraine's leadership continues to reiterate the validity of the decision to retain nuclear weapons because the incentives outweigh the

disincentives. Ukraine's decision to retain nuclear weapons is stabilizing in two fundamental ways.

First, the unavoidable fact is that Ukraine's nuclear arsenal serves to deter Russian adventurism with an absolute degree of finality.[74] Russia's leadership surely realizes that any attempt to "reconsolidate" Ukraine into Russia, or similarly coerce Ukraine, immediately raises the risk of hostilities. The existence of Ukrainian nuclear forces creates an "existential deterrent" that vastly complicates the potential for escalation in a crisis, and creates risks that neither Russia nor Ukraine could willingly accept. This is true even though Ukraine's ICBMs cannot be used as theater weapons. At the same time, discussions about uncertainties — Ukraine's ability to control nuclear forces, Russia's incentives to destroy those forces, among the more prominent — assume a fanciful quality.[75] National leaders do not play these academic games of deterrence. As long as Ukraine has a nuclear arsenal, Russia will not threaten Ukraine's sovereignty because it would entail profoundly dangerous risks.

Second, Ukraine's diplomatic pronouncements since 1991 suggest that it sees nuclear weapons as a political symbol of enormous significance to Europe and the United States. The United States and Europe simply cannot remain aloof in the face of a Russian-Ukrainian crisis. Ukraine's leadership has made the pragmatic decision that, despite U.S. and European pressure to relinquish its nuclear weapons, those weapons provide an implicit, if partial, security guarantee of Ukraine's sovereignty. Neither the United States nor Europe could avoid involvement in a crisis given the risks that nuclear weapons pose for all sides. While Europe and the United States offer benefits to Ukraine through the "Partnership For Peace,"[76] which Ukraine has accepted, it steadfastly refuses to grant Ukraine membership in NATO. Ukraine elicits *de facto* involvement in its affairs because its nuclear arsenal compels U.S. and European attention in a crisis. Neither an American President, British Prime Minister, nor German Chancellor could declare diplomatic non-involvement in a Russo-Ukrainian crisis given the threat posed by nuclear weapons. Once any conflict began, either as a result of irredentist conflicts or border clashes,

others might well attempt to stay out of military quagmire, and thus leave Ukraine's fate in its own hands.

Ukraine's actions since 1991 are evidence of a lucid understanding of the political relationship between Ukraine and the U.S.-European bloc that the leaderships in the United States and Europe have rejected. The cynical argument is that the leaders in Europe and the United States recognize the relationship between Ukraine's independence and the preservation of European security, but choose to remain aloof. One suspects that many observers hope that the return of Ukraine's nuclear weapons to Russia will sever that relationship so that Ukraine's ultimate fate is no more entwined with the United States and Europe than that of Georgia or Armenia. Ukraine's strategem thus frustrates other states, and contributes to U.S. and European intransigence on an issue of fundamental importance to Ukraine's security. The problem is that relinquishing nuclear weapons and implementing START-1 is seen as a fundamental U.S. security interest that Ukraine is doing its best to obstruct.

Nevertheless, Ukraine's incentive is to use nuclear weapons as a political instrument to intertwine its security with that of states in Europe. This policy is evidence of the conviction that nuclear weapons are fundamental to the interests of Ukraine.

There are, however, several destabilizing aspects of Ukraine's decision. First, Ukraine has elevated the status of nuclear weapons in the dialogue between Ukraine, Russia, and European capitals. Ukraine's actions place nuclear weapons at the center of relations with Russia. This is occurring at a time when many observers hoped that the demise of the Cold War would diminish the importance of nuclear weapons in diplomacy.[77] Ukraine, along with the actions of North Korea, has guaranteed nuclear weapons a prominent place on the "political map," which is not to say that nuclear weapons ever were considered unimportant. Ukraine, however, elevates the role of nuclear weapons at a time when societies are hoping that the opposite will occur.

Second, Ukraine's nuclear policy is a symbol of an antagonistic relationship with Russia that traces back hundreds of years.

Nuclear weapons presently are the most prominent feature of the hostility in Russia-Ukrainian diplomacy, and are likely to remain so for the foreseeable future. For Russia, nuclear weapons pose a threat to its security and limit its freedom of action. For Ukraine, the salient question of why Russia worries so much about the nuclear arsenal is seen as a veil for imperial ambitions, at least until the parliamentary victory of Vladimir Zhirinovsky led to the public articulation of the expansionist aims of the Liberal Democratic Party.[78] Ukraine could not miss the implications when Zhirinovsky said that the "Liberal Democratic Party supports the restoration of the borders of the former U.S.S.R."[79] Antagonism between Russia and Ukraine is not conducive to stability, and in that equation nuclear weapons simply may be the most concrete expression of a permanent strategic distrust between Russia and Ukraine. Indeed, the vehement Russian reaction to Ukraine's policy reinforces the view that this strategic relationship is not likely to improve, even in the unlikely event that the nuclear issue is resolved.

Third, Ukraine's nuclear policy clearly influences the policies of other states in the region. Kazakhstan,[80] for instance, watches Ukraine's nuclear actions with considerable care, and the same is true for Belarus,[81] whose leader was removed by the parliament shortly after a visit with President Clinton.[82] Both might decide to retain nuclear weapons if Ukraine succeeds in doing so. On the periphery, states such as Iran and Iraq, among others, are certain to note the success of Ukraine's ability to use nuclear weapons as a way to engage the United States and Europe in the diplomatic dialogue. If Ukraine's actions were to accelerate nuclear proliferation throughout the region, then Ukraine's actions would be destabilizing. But we are skeptical of such reasoning. While both Iraq and Iran have their own motivations for nuclear weapons programs, other peripheral states have not shown any predilection toward obtaining nuclear weapons.

Fourth, there are worries that Ukraine's inability to sustain and maintain nuclear forces is destabilizing. If Ukraine's leadership believes that the nuclear forces are becoming inert, thus closing the nuclear window of opportunity, Ukraine might decide

to use those forces in an adventurous fashion to put pressure on other states. This concern seems misplaced in the context of Ukraine having territorial designs on it's neighbors, notably Poland, Belarus, Georgia, or Russia.

Finally, the retention of nuclear weapons can exacerbate Ukraine's economic plight if the United States and European states withhold economic assistance until Ukraine relinquishes those forces. The possession of nuclear weapons forces Ukraine to divert scarce economic resources from the modernization of its domestic economy, and leads to a further weakening of Ukraine's economy. The resulting economic collapse of Ukraine could contribute to instability in a nuclear state. While the economic argument is important, Ukraine's leadership argues that security concerns are the dominant consideration. This prospect also strengthens the argument that the United States and Europe should help Ukraine with economic modernization, rather than subordinating all issues to nuclear weapons. It would be unfortunate if the withholding of economic assistance precipitated an economic crisis in Ukraine and the destabilization of the region.

5. Problems and Prospects

The challenge for Ukraine is to establish a nuclear arsenal that enhances stability in the region. Toward that end, there are several problems that Ukraine's leadership must resolve.

First, the incorporation of Ukraine into security regimes remains the central, and yet most difficult, problem for Ukraine. Until Ukraine is assured that it is not alone — that Ukraine stands as a protected member of the international community, with appropriate security assurances — it will view calls for nuclear disarmament as the misguided and duplicitous efforts of powers to "act in tune with their own interests and ambitions."[83] NATO provides one mechanism for solving this problem, yet European capitals are determined to keep Ukraine out of NATO principally because they fear that this will antagonize Russia, despite Ukraine's professed desire to join.[84] The success of nationalists in Russia's December 1993 elections further slowed the process.[85]

Second, it is unrealistic to believe that Ukraine ever will relinquish all of its nuclear forces given the powerful incentive to restrain Russian imperialism. The diplomatic frenzy surrounding this question blurs the fundamental incentive to possess nuclear weapons. Put differently, the disincentives are no match for the incentive to retain nuclear weapons to protect Ukraine's sovereignty.

Furthermore, it is extremely unlikely that the United States will be able to "purchase" Ukraine's nuclear arsenal, regardless of the price. It is likely that there will be constant increases in the price, whether in economic aid or in funds for dismantling nuclear forces, that Ukraine demands in exchange for relinquishing each unit of its nuclear arsenal. Moreover, Ukraine demonstrated the ability to ensure that selected elements of the arsenal, such as SS-24 ICBMs, always will remain outside any current agreement. Finally, the reluctance of the United States and Europe to incorporate Ukraine into security regimes diminishes Ukraine's willingness to risk its security without nuclear weapons.

Third, Ukraine must establish operational control over its nuclear forces given the dangers that incomplete or partial control pose to security. Over time, Ukraine is likely to establish control, owing in part to Ukraine's indigenous nuclear weapons and ballistic missile industries.[86] The problem of command and control is one in which the United States, and perhaps, even Russia in its own self-interest can assist.

Fourth, constant American pressure on Ukraine to relinquish its nuclear arsenal is counter-productive. Ukraine sees its policy on nuclear weapons as a pragmatic choice that is necessitated by its vital interests.[87] Diplomatic pressure, whether by the United States or Russia, is seen by Ukraine as indistinguishable, because both strive to eliminate Ukraine's nuclear weapons. Ukrainians continue to ask why the United States supports a Russian nuclear arsenal, but not a Ukrainian one, and why the United States acts as a slave to Russian interests.[88] The tendency of the United States to submit to Russian pressure on the matter of inclusion in NATO must cause Ukrainians to wonder how resolute Europe and the United States would be in coming to Ukraine's defense in a crisis.[89]

Fifth, Ukraine needs to establish a stable doctrine for governing its nuclear forces. Until that happens, Ukraine's political and diplomatic actions, while quite sophisticated in peacetime, are uncertain in a crisis. Given the primitive state of defense and security planning in Ukraine,[90] the leadership has no clear conception of the rules or logic that govern nuclear forces, with the exception of the idea that nuclear weapons are of immense significance in a diplomatic sense. Nor has Ukraine's political or military leaders engaged in detailed thinking about the nature of a Ukrainian deterrent posture beyond that of simple deterrence.[91] Ukraine also needs to broaden its thinking about nuclear deterrence to increase the element of subtlety in its national policies and diminish the visibility of nuclear weapons in its politics.

B. Pakistan: The Islamic Bomb?

1. Background

Pakistan's development of nuclear weapons must be considered in the context of India's nuclear capability. The importance of Pakistan's nuclear weapons is underscored because it symbolizes a regional, bipolar relationship in which nuclear weapons play a central role in managing mutual hostility between India and Pakistan.

Origins. The history of Pakistan since independence in 1947 has been scarred by three conflicts and significant reversals at the hands of India. The decision to establish two separate and independent states on the South Asian subcontinent started a chain of confrontation and conflict that continues today. The bloodshed of partition, the unsettled border issues, and the religious antagonisms spread throughout the subcontinent underscores the prominent role of hostility as the hallmark of Indian-Pakistani relations. It is not surprising that Pakistan would turn to nuclear weapons as a way to balance the greater military and economic power of India, its historic rival and primary antagonist.

The motivations for Pakistan's nuclear program are found in its hostility to India. The Indo-Pakistani War in 1971 that led to the independence of Bangladesh was the most significant post-

independence reversal for Pakistan. The outcome of that conflict increased the visibility and support for the development of Pakistan's nuclear weapons program. With East Bengal permanently severed from western Pakistan, Pakistan's leadership permanently discounted the possibility that Pakistan would have the power to deter or defeat India in a conventional war without dependable outside assistance or a nuclear deterrent. During the 1971 War, Pakistan could not count on timely or decisive outside military assistance or on an independent nuclear arsenal, despite pressure on India from China and the United States (via the deployment of the aircraft carrier USS Enterprise). A serious commitment to develop a nuclear arsenal was born in the defeat which Pakistan suffered in 1971 at the hands of India. The interesting historical parallel with Pakistan's nuclear program is that India's nuclear weapons program was spawned in border conflicts with China.[92]

Nuclear Reactors and Materials. Pakistan made major efforts in the 1970's to establish the facilities that would support a weapons program. It simultaneously avoided any acknowledgment of the program that would create pressures for the imposition of international sanctions. A necessary step for Pakistan was to create the capability to enrich uranium. This was begun in 1976,[93] when Pakistan secretly set up the Engineering Research Laboratories, later renamed the A.Q. Khan Research Laboratories in 1981. The name change reflected belated recognition of the metallurgist A.Q. Khan's key role in obtaining centrifuge designs from Europe.

The initial Pakistani centrifuges most likely were based on first-generation designs stolen from Ultra-Centrifuge Nederland (UCN), the Dutch partner in the trilateral Urenco consortium.[94] Later improvements were based on German designs obtained both from UCN, where A.Q. Khan translated the classified German documents and from Pakistani intelligence efforts in Germany. Centrifuges of this same design were a part of the Iraqi program uncovered by the International Atomic Energy Agency after the Persian Gulf War in 1991.[95] By 1984, A.Q. Khan announced that the Kahuta facilities were producing enriched uranium, though it was claimed at the time that they would not enrich uranium above

the five percent level. Later, in 1986, U.S. intelligence analysts concluded that Kahuta was producing weapons grade uranium (enriched over ninety percent) and not merely uranium enriched to the five percent level,[96] thus completing a major step in Pakistan's nuclear weapons program.

During this process, Pakistan sought to maintain its close relationship with the United States and foster better relations with China. The strategic judgment in Pakistan was that both of these relationships would be vital in a confrontation with India. Pakistan's task was simplified because India's relationship with Moscow was warming, while China's relationship with Washington continued to strengthen. In the cold war calculus of U.S. strategic relationships, Pakistan was judged to be on the right team, while India was increasingly viewed as leaning toward the wrong side.

There were, however, occasions when the United States voiced strong concerns about Pakistan's nuclear program. The U.S. reaction was consistent with its historic opposition to nuclear proliferation. In late 1977, the United States cut off economic and military aid for a year, and persuaded France to suspend a contract to build a plutonium-producing plant in Pakistan. These actions by France and the United States contributed to Pakistan's decision to choose the alternative route of constructing its own gas centrifuge uranium enrichment plant, as described above.[97] Once again, in May 1979, the United States severed economic and military aid in compliance with the Symington Amendment of 1976, which denied aid to non-nuclear countries that imported enrichment technology without safeguards.

The Soviet invasion of Afghanistan in December 1979 enhanced Pakistan's strategic value to the United States because its support was critical to U.S. efforts to expel the Soviet Union from Afghanistan. President Carter promptly offered assistance to Pakistan, but General Zia rejected the $400 million offer. This marked the end of U.S. Government counter-proliferation efforts with Pakistan for over a decade. With the inauguration of President Reagan, the United States increased the offer to a six-year program of $3.2 billion, while Congress granted a six-year waiver from the provisions of the Symington Amendment. These actions

effectively ended U.S. nonproliferation actions against Pakistan, and thus encouraged Pakistan to continue its development of nuclear weapons.

Despite intelligence warnings the previous year on Pakistan's rapid progress in obtaining weapons-grade material, in December 1987 the Congress appropriated another $480 million in aid and waived the Symington Amendment for another two-and-a-half years. During this same period President Reagan declared in the annual certification, required by the 1985 Foreign Assistance Act, that Pakistan did not possess a nuclear explosive device.

Throughout the period when the United States was committed to resisting Soviet efforts in Afghanistan, Pakistan was free to pursue its weapons program with indirect assistance from the United States. The United States had made the choice for strategic objectives to look the other way at the efforts of a friendly state to develop nuclear weapons. Pakistan is a clear case of cold war objectives moderating U.S. nonproliferation policies.

Estimating Nuclear Capability. Pakistan probably developed nuclear weapons in the late 1980s.[98] A Pakistani official confirmed that Pakistan has had nuclear weapons since 1987.[99] Prime Minister Benazir Bhutto voiced support for Pakistan's nuclear weapons program,[100] and reiterated in 1993 that Pakistan will not relinquish that program.[101] Pakistan was immune to coercive actions by the United States during the 1980's, and thus was able to make rapid progress in its nuclear weapons program. By 1986, many observers believed that Pakistan had produced weapons-grade material. The level of output from Kahuta was thought to be sufficient to produce two to three nuclear weapons per year. Additionally, there are persistent reports that Chinese information from its 1966 Lop Nor tests provided the design for a missile warhead, which represents an advance over first-generation bomb designs.[102] There were reports that Pakistan acquired, through Germany, a tritium purifying plant which was shipped and established between 1985 and 1987.[103]

Throughout the development of the Pakistani nuclear weapons program, there has been concern about the delivery vehicle that

could be used for such weapons. The U.S. program of selling F-16 aircraft to Pakistan was criticized by some as providing such a delivery vehicle,[104] which ironically was the aircraft used in the Israeli raid against Iraq's nuclear reactor at Osirak in 1981. This criticism was countered by Senator Richard Lugar in Senate Foreign Relations Committee hearings on July 30, 1992, when he stated that "Pakistan does not have the option to modify these planes so that they can deliver nuclear weapons and we have access to them which verifies that no such modifications have been made."[105] There are frequent reports that the sale of M-11 missiles by China to Pakistan was in violation of commitments made by China's leadership to Secretary Baker in 1991. These missiles would provide Pakistan with a nuclear delivery vehicle with a range of over 600 miles in addition to aircraft in its inventory.[106]

When, by 1990, the Bush Administration could no longer certify that Pakistan did not have nuclear weapons, and with the Cold War over and the Soviet Army defeated in Afghanistan, the United States again severed economic and military aid to Pakistan. This represented a severe blow to Pakistan, as illustrated by the statement of Pakistan's Finance Minister that U.S. military aid amounted to approximately 10 percent of the defense budget. Yet in February 1992, Pakistan's Foreign Secretary Shahryar Khan admitted that Pakistan had the components to assemble at least one nuclear bomb.[107] While the United States turned its attention to other issues, Pakistan had made good use of the 1980's to develop a nuclear weapons capability.

2. Nuclear Incentives

There are several incentives that figure prominently in Pakistan's decision to develop nuclear weapons.

Deter Adversaries. While its position was not as severe as the strategic situations of other states that turned to nuclear weapons, Pakistan desperately needed an effective deterrent to Indian aggression. The only truly effective deterrent would be nuclear weapons, as only nuclear weapons would be credible to the Indian leadership which might seek to destroy the Pakistani state.

Deterrence of India is the primary incentive behind Pakistan's decision to develop nuclear weapons.

Pakistan moved to develop nuclear weapons relatively late, as a result of the defining moment in its international experience when it lost East Bengal in 1971. This event symbolized the subsequent erosion of Pakistan's strategic position and imposed a condition of permanent conventional military inferiority in relation to India. Pakistan realized that it needed an independent nuclear arsenal because it could not depend on direct military support from any major power, despite efforts to maintain and foster relations with both China and the United States.

Prestige. It is evident that other incentives were involved as well in Pakistan's nuclear decision. Pakistan is a proud nation which strives to achieve a position of leadership in the Islamic world and the international community. Its contribution of troops to various Gulf States and to U.N. peacekeeping efforts has brought financial benefits, but also adds to the international prestige of Pakistan. Pakistan's development of nuclear weapons, as claimed by its leadership, gives it the distinction of being the first Islamic nation to join the nuclear club. This capability adds to Pakistan's prestige within the Islamic world, and enhances its leadership role within the international community. As long as the possession of nuclear weapons brings with it special attention and prestige from the major powers of the world, nuclear ownership will remain a powerful incentive to states such as Pakistan.

Islamic Bomb? Much has been written about the prospect of an "Islamic Bomb." While there is always the possibility that nuclear weapons technology will be shared by ideologically sympathetic states, there is little evidence that this is relevant in Pakistan's case. Obviously, the scientists and engineers who work in the Pakistani nuclear weapons program might sell or give information to radical Islamic states or organizations out of ideological or religious fealty, but the sharing of nuclear technology historically has been extremely rare. While it might be the case that Pakistan would choose to assist selected Islamic states in developing nuclear capability, it strains the imagination to believe that a major incentive for Pakistan's development of nuclear

weapons was the quest to share that technology with others who are searching for an "Islamic Bomb."[108] This sharing would weaken Pakistan's leadership in the Islamic world because its power would diminish in the face of other nuclear-armed Islamic states.

Nuclear Energy. For Pakistan, an important incentive is the desire to develop nuclear energy and technology. Pakistani officials have said that Pakistan needs nuclear power to support its economic development and modernization.[109] There are reports that Pakistan is accelerating its civilian nuclear power program.[110] The problem is the thin line between a peaceful nuclear energy program and a weapons program, given the degree of overlap among the technologies. Moreover, a peaceful nuclear energy program often serves as a cover for developing nuclear weapons. Nuclear weapons programs also interfere with civilian power programs because developed states try to limit access to the needed technologies.

At a dedication for a nuclear research reactor near Islamabad, President Ghulam Ishaq Khan stated that it would be "unfair and unrealistic to expect Pakistan to unilaterally forego the development of its peaceful nuclear programme and capabilities in response to so-called nonproliferation pleas. It must be a sovereign right of the nations to develop the entire gamut of nuclear technology for peaceful purposes."[111] The irony is that observers knew that Pakistan was developing nuclear weapons under the guise of a power program.

Summary. It is manifestly clear that the major incentive behind Pakistan's development of a nuclear weapons capability was its military defeat by India in 1971, and the need to put in place a deterrent to offset India's conventional military superiority. Pakistan is a proud nation that obviously recognizes the international prestige and special status that are accorded to nuclear-weapons states.

3. Nuclear Disincentives

There are several prominent disincentives that influenced Pakistan's decision to develop nuclear weapons. While less compelling

than the incentives, these factors nonetheless entered into Pakistan's nuclear calculus.

Risk of Preemption, War. A significant disincentive was the risk of an Indian preemptive attack against Pakistan's nuclear weapons program. After all, India's nuclear program was more advanced than Pakistan's, and India clearly occupied the more advantageous military position in the interval when it alone possessed nuclear weapons. An obvious possibility was that India would contemplate a preemptive strike to destroy Pakistan's nuclear facilities before its nuclear program could be completed.[112] There was even the possibility that India would provoke another conflict to defeat Pakistan and extract conditions to ensure that Pakistan could not reemerge as a threat to India.

Pakistan benefitted from the fact that India was distracted by internal problems during this time, and probably harbored equal concerns that Pakistan might attack Indian nuclear facilities. There appears to have been some measure of mutual deterrence, which was recognized implicitly by the 1991 agreement between Prime Ministers Bhutto and Ghandi not to attack each others' nuclear facilities.[113] While Pakistan could not be confident that India would refrain from an attack against its nuclear facilities, it knew that such an attack would put India's facilities at risk.

Since Pakistan's nuclear program was undertaken in response to the prospect of a permanent condition of regional instability and Indian dominance, regional instability was not a significant disincentive. In fact, one could argue that after the Indian test of a nuclear device in 1974, many in Pakistan believed that Pakistan had no choice but to develop its own nuclear weapon. Some even advanced the thesis that Pakistan's nuclear weapons program was essential to regional stability.

Economic Costs. It is evident that a major disincentive for Pakistan was the potential economic costs of the program and the related economic damage caused by the loss of aid and investment. But this disincentive was weakened by the strategic position which Pakistan enjoyed during the Afghanistan War. Pakistan also

sought to avoid some of the economic consequences through the usual denials and attempts to conceal the program.

It is easy to understand why economic costs are important to Pakistan. It is a relatively poor country with many demands on its resources. With a GDP which only reached $40 billion in the 1990's and a low per capita income, there are serious restrictions on the economic resources Pakistan could devote to the development of a nuclear weapon. This economic burden has been compounded by the necessity of maintaining a large conventional military force of approximately half a million men requiring an annual defense expenditure that will reach over $3 billion or over 7 percent of GDP in 1993.[114] The expense of Pakistan's nuclear weapons program is increased by the need to conceal it in a society far less closed than that in Iran, Iraq, or North Korea.

A nuclear weapons program carries the added economic risk of the loss of external economic and military aid, which is quite significant for Pakistan. External military aid was important to underwrite the modernization of Pakistan's conventional military forces. Economic aid partially subsidized the development of Pakistan's economy. The threat of the loss of aid was real, as the United States demonstrated when it twice suspended aid to Pakistan in response to the development of nuclear weapons. Pakistan's nuclear weapons also carry the risk of sanctions. Yet these factors did not deter Pakistan from making the economic investment in a nuclear weapon program. A Pakistani leader once said that "his people would go hungry or eat grass in order to build a nuclear bomb."[115]

Economic disincentives are always a factor for developing nations when they wrestle with the decision to undertake a nuclear weapons program. For that reason, Pakistan went to great lengths to deny the existence of such programs and conceal them from the outside, even though such efforts add to the expense of the program.[116] There is no doubt that Pakistan paid an economic price for its weapon program and continues to pay a price today.

International Opprobrium. Pakistan experienced occasional periods when the international community, in particular the United States, criticized its nuclear program. While these

outbursts were noteworthy at the time, they obviously were not sufficient to persuade Pakistan to terminate its program. India's nuclear program greatly reduced the normal inclination to avoid international opprobrium because the penalties associated with regional inferiority were too great for Pakistan to contemplate. It is difficult to condemn Pakistan for its nuclear program given its perception of the threat posed by India and the Indian nuclear program. In defense of its program, Pakistan has sought to deflect international condemnation through its support of the highly unrealistic proposals for five-nation nuclear guarantees and negotiations that have proven unacceptable to India.

4. A Stabilizing Case of Proliferation

While it is possible to speak of Pakistan as a stabilizing case of proliferation, Pakistan's nuclear arsenal must be viewed in the context of India's nuclear weapons. To the extent that nuclear proliferation on the South Asian subcontinent is stabilizing, it must reflect the actions of these two states.

There is little doubt that Pakistan possesses nuclear weapons, despite the continuing stream of denials that are not terribly credible. CIA Director R. James Woolsey testified that both India and Pakistan can assemble nuclear weapons "on short notice" with components that are kept separate for security reasons.[117] The strategies and policies of India and Pakistan, as well as their responses in crisis situations, have to be based on the assumption that each state has nuclear weapons and the ability to deliver them against the other. This is the critical assumption that influences the judgment that Pakistan's (and India's) nuclear arsenal is a stabilizing force on the subcontinent. By this logic, the presence of nuclear weapons has forced these two states to show greater caution and prudence in their policies. There is also the hope that the coercive power of nuclear weapons will force these states to display greater moderation in any future confrontation. The events in the spring of 1990 provide empirical evidence of this caution. On balance, nuclear weapons represent a force for regional stability, but this directly hinges on the security of

Pakistan's nuclear forces and the associated command and control systems, which cannot be guaranteed today.

It is sensible to be concerned with the presence of nuclear weapons in a highly-charged situation that is characterized by intense religious hostility and a history of conflict. Nevertheless, Pakistan's development of nuclear weapons has restored the military situation in South Asia to a condition of rough equilibrium, and has eased Pakistani concerns about India's regional ambitions. The premise is that if a crisis were to emerge, then the possession of nuclear weapons is a reasonable guarantor that India and Pakistan will moderate their military objectives. There is, of course, no guarantee that India and Pakistan will not be the first states to initiate a two-sided nuclear war.

Much as it was hoped during the Cold War, the presence of nuclear weapons may serve to deter future wars on the subcontinent and perhaps force an ultimate resolution of India's and Pakistan's longstanding political disputes. By the standard of nuclear bipolarity, the nuclear politics on the subcontinent are largely a mirror of the U.S.-Soviet nuclear balance that served as a model for restraint on the part of the superpowers during the Cold War. In retrospect, the hope is that the nuclear balance of terror which stabilized great-power politics for almost half a century will have the same success in South Asian politics.

5. Problems and Prospects

The fundamental problem with nuclear proliferation in South Asia is that it exists in an environment that is suffused with political and military confrontation and deeply rooted religious and ethnic rivalries. The danger inherent in these causes of confrontation is the prospect of a military conflict which escalates into the first regional nuclear conflict.[118] The absence of any solution to outstanding problems such as the border dispute between India and Pakistan over the Kashmir and, probably more importantly, guarantees for the rights of Muslims throughout India, raises the risks of a military confrontation. There is also the danger that each side will be tempted to launch a preemptive strike against each

others nuclear facilities. The limited size of Pakistan's nuclear facilities and their relative vulnerability to attack simplifies the problem for military planners. This constraint applies with equal force to India's nuclear program.

While it is debatable whether arms races generate conflicts, arms races clearly reflect an increase in the level of tension in unstable regions. This concern fuels worries in India and Pakistan that the failure to reduce the tensions in Indo-Pakistani relations, as exemplified in the Kashmir, increases the likelihood of nuclear war. The reasoning that India and Pakistan are candidates for involvement in a nuclear war explains the intensive efforts by the United States to reduce tensions in the spring 1990 crisis over the Kashmir.

Another problem with Pakistan's nuclear weapon program is the fear that Pakistan will be the source of the "Islamic Bomb." While this threat has been exaggerated, there is nonetheless a danger that a future government might provide nuclear weapons technology to other Islamic states or organizations based on ideological sympathy or a history of previous economic support. For the present, there are no indications that Pakistan will transfer the technology, although Libya, Saudi Arabia, and other Moslem states reportedly did help finance the Pakistani nuclear project. Indeed, Muammar Khaddafi supplied both financial assistance and uranium yellowcake to Pakistan.[119] The Israeli Government apparently believed there was enough substance to the prospect of an "Islamic Bomb" coming from Pakistan that it queried the Indian Government about using India as a refueling stop enroute to a 1982 Osirak-type airstrike against Pakistan's Kahuta facility.[120] The Indian Government refused.

While this form of spreading nuclear technologies would pass a new threshold in nuclear proliferation, there is little evidence that the United States needs to invest considerable resources to combat the problem. This fear is far more consistent with concerns about North Korea's nuclear weapons program and North Korea's arms sales relationships with Iran, Syria, and Libya. Although this prospect is less credible in the case of Pakistan, Pakistan's overtures

to Islamic nations in its effort to achieve "strategic depth" in the absence of support from the United States, have elevated concerns.

Any effort to turn back Pakistan's nuclear program runs into the problem of India's insistence that China must be a full partner in any efforts to denuclearize the region. It is not likely that China will accept any reduction in its nuclear armaments. There is an equally slim chance that China would eliminate its nuclear weapons capability. India's use of the "China card" in any discussions of nuclear disarmament strengthens Pakistan's case for the pursuit of nuclear weapons. India's opposition to the NPT, five power negotiations, and a nuclear weapons-free zone in South Asia have allowed Pakistan to use these issues to political advantage. The result is that Pakistan's nuclear position is quite secure.

The proliferation of nuclear weapons to India and Pakistan weakens the credibility of the NPT and the international norm against nuclear proliferation. Neither Pakistan nor India are parties to the NPT, though Pakistan has stated that it would adhere to the treaty if India did so. With the future of NPT clouded by its ineffectiveness in Iraq and North Korea, the attitude taken by India and Pakistan will be influential in the decision to extend the NPT in the 1995 Review Conference. It is even possible that one or both will seek to adhere to the treaty as a nuclear nation, thus reinforcing the role of the treaty, but this is unlikely at this writing. The larger reality is that the role of the NPT or a successor regime and the success of international nonproliferation efforts will be shaped by the still uncertain roles of India and Pakistan.

There is no realistic hope for nuclear disarmament on the subcontinent, but there is the possibility of agreements on the security of nuclear weapons and confidence-building measures for preventing accidental escalation. It is in the area of efforts to construct a more reliable and stable balance in South Asia that may prove most productive. A first step in this direction was taken with the Bhutto-Ghandi agreements in 1991. In this regard, Prime Minister Benazir Bhutto indicated during her 1993 campaign that a mutual arms reduction treaty with India would be a priority for her new government.[121] If built on the progress of previous agreements between Pakistan and India, such negotiations might

provide the basis for an expansion of the confidence-building measures required in South Asia. Until that time, however, the politics on the subcontinent rest on the nuclear equilibrium established by India and Pakistan.

C. North Korea: A New Threshold in Proliferation?

1. Background

The importance of North Korea's nuclear program is measured by its involvement in a geographic region in which the United States deploys over 36,000 troops as part of a formal military alliance with South Korea. The significance of North Korea's nuclear weapons program is multiplied by the risk that a war would involve Americans and the devastation of the Korean peninsula. The broader dangers are that North Korea will share either the weapon or the necessary technologies with other destabilizing regimes, and that U.S. policy options for preventing the crossing of this new threshold in proliferation are extremely limited.

Origins. Since the early 1990s, North Korea's efforts to develop nuclear weapons have been a prominent feature in the daily headlines. It is useful to focus on several elements of North Korea's decision to develop nuclear weapons.

Nuclear Reactors and Materials. North Korea's nuclear program commenced in the 1960's with the building by the Soviet Union of a small research reactor in Yongbyon. A number of North Korean scientists and research personnel were trained in the Soviet Union as part of a cooperative program that continued until the final days of the Soviet Union. Other personnel reportedly received training in China and Pakistan.[122]

The nuclear program in North Korea continues to expand with the five-megawatt power reactor, eight-megawatt research reactor, and a fifty megawatt reactor at Yongbyon that is still under construction.[123] In 1984, they commenced construction of a larger (50-200 megawatt) reactor at Taechon.[124] In addition, a plutonium reprocessing facility collocated at Yongbyon was reported by North Korean officials in 1989 to be 80 percent complete and 40 percent

equipped.[125] There also is a nuclear fuel-rod fabrication plant. None of the nuclear reactors have attached power lines, thus strengthening the argument that there are no power generation plants in the vicinity of Yongbyon, where all known nuclear facilities are located. In addition, a nuclear power plant at Sinp'o, is under construction.[126] The facilities are heavily defended with anti-aircraft installations and military guards.[127]

During the 1980's and early 1990's, North Korea developed the annual capability to produce roughly 15 pounds of plutonium from its 5-megawatt reactor, which is more than enough for one Hiroshima-sized bomb per year. When the 50 and 200 megawatt reactors are completed, North Korea will have the capability to produce several nuclear weapons per year. The fuel for North Korean reactors is available from a uranium mine in North Korea whose output can be reprocessed into weapons-grade material at the Yongbyon reprocessing facility. By late 1993, the United States hinted that North Korea may possess one or two nuclear weapons.[128]

North Korea's nuclear developments were monitored for years, but did not receive any significant attention until recent years. Latent anxieties were reduced when North Korea initialed the Nuclear Nonproliferation Treaty in 1985. But indications in 1989 that North Korea was building a plutonium-reprocessing facility led to a resurgence of anxieties in developed states, most notably the United States, South Korea, Japan, and China, as well as many smaller states in the region. North Korea's leadership attempted unsuccessfully to placate international concerns through repeated denials that this was a reprocessing facility or that North Korea was pursuing a nuclear weapons program.

Ballistic Missile Development. During this same period, North Korea maintained an active research and development program that focused on producing an export-variant of the Soviet SCUD missile.[129] These efforts culminated in the test firing of the *Nodong 1* into the Sea of Japan on May 29, 1993. This missile's reported range of 1,000 kilometers gives it the ability to cover all of South Korea and much of Japan. More recent reports have indicated that work has begun on a longer range *Nodong 2* in cooperation with Iran. Little information is available on the newer

missile, whose existence North Korea has denied. In operational terms, a completed nuclear weapon deployed on *Nodong 1* or delivered by aircraft in the current North Korean inventory, gives North Korea the ability to deliver nuclear weapons throughout most of Northeast Asia in the 1990's.

Escalating Tensions. North Korea signed the Nuclear Nonproliferation Treaty in 1985, but its ratification in 1986 did not initiate safeguards inspections by the International Atomic Energy Agency (IAEA). North Korean officials later stated that North Korea had signed the NPT to create conditions that would allow the United States to withdraw its nuclear weapons from South Korea. They further insisted that North Korea would not allow the IAEA to inspect its facilities until U.S. nuclear weapons were removed from the Korean Peninsula and the "nuclear threat" to North Korea ended. Additional demands for written security guarantees, the cancellation of the annual U.S.-South Korean Team Spirit Exercises, and the withdrawal of U.S. troops from Korea, were periodically substituted or added in public statements and interviews with visiting delegations and groups. Thus an effective stalemate on safeguards inspections remained in place until late 1991.

The period between 1989 and 1991 was a very frustrating experience for North Korea. This was a period of great success for South Korea's policy of *Nordpolitik*, or of reducing tensions with North Korea. North Korea was stunned when South Korea opened diplomatic relations with the Soviet Union after the historic Gorbachev-Roh meeting in San Francisco. Pyongyang also witnessed the opening of special trade offices by China and South Korea in their respective capitals and a concomitant increase in trade relations and friendly contacts that would lead to full diplomatic relations. South Korea's rapprochement with Russia and China occurred against the backdrop of the collapse of the Berlin Wall and the fall of communist regimes throughout Eastern Europe. These events amounted to the effective dismantling of North Korea's external sources of support, and a simultaneous increase in the power and prestige of South Korea and its allies. North Korea faced increasing isolation and strategic vulnerability at a time when its discredited economic and political

systems were proving inadequate to meet the basic needs of its population.

During the collapse of the former Soviet Union and Eastern Europe, the United States focused its attention on the future control of the Soviet arsenal. In this context, President Bush's September 27, 1991 announcement that the United States would eliminate all overseas deployment of tactical nuclear weapons was particularly important. While the policy was driven by attempts to assure control of those weapons in the former Soviet Union, the President's declaratory policy had a positive effect on North Korea and the role of nuclear weapons on the Korean peninsula. By postulating that the United States planned to remove all nuclear weapons based outside the United States, including those in South Korea, the United States effectively eliminated North Korea's major rationale for denying full compliance with IAEA safeguards inspections that are incumbent upon membership in the NPT. To encourage Pyongyang to change its position on confrontation and terrorism, the Bush Administration authorized the import by North Korea of food, medical, and humanitarian equipment up to a value of $1.2 billion in 1991.[130]

The period between late 1991 and early 1992 represented a time of intensive diplomatic activity by North and South Korea and the United States. One result of the South-North dialogue was the signing on December 13, 1991 of an agreement on reconciliation and cooperation, which included a pledge of non-aggression, establishment of committees to negotiate exchanges, and an agreement to build a more cooperative relationship and pursue arms control measures. This was followed quickly by the signing on December 31, 1991 of the Joint Declaration on the Denuclearization of the Korean Peninsula. This declaration has special importance because it went beyond a pledge to "not test, manufacture, produce, receive, possess, store, deploy or use nuclear weapons." Paragraph Three specifically includes a further pledge "not to possess nuclear reprocessing and uranium enrichment facilities." This declaration was ratified by both parties and entered into force on February 19, 1992. It also mandated the creation of a South-North Joint Nuclear Control Commission

which would determine the procedures for inspections that verify the denuclearization of the Korean Peninsula.

As a result of progress on the nuclear issue, the United States and South Korea cancelled the annual Team Spirit exercise for February 1992. The United States also agreed to a high-level meeting with the North Koreans in New York, which was conducted on January 22, 1992. On January 31, 1992, North Korea signed an agreement with the IAEA providing for inspections of nuclear facilities in North Korea. After ratification of the safeguards agreement on April 10, 1992, North Korea promptly submitted the required facilities list on May 4, 1992 ahead of the required date. This list surprised many observers because it was so complete, even including the suspected plutonium-reprocessing facility at Yongbyon. On July 2, 1992, President Bush announced that all U.S. tactical nuclear weapons deployed overseas had been returned to the United States. This announcement was welcomed by Pyongyang in a Foreign Ministry statement. With the actual scheduling of an IAEA inspection in June and President Bush's subsequent announcement, the high point in progress on the North Korean nuclear weapons issue had been reached.[131]

Nuclear Deadlock. For reasons that remain clouded in obscurity, sometime during the summer and early fall of 1992, North Korea backed away from the recent progress made on nuclear inspections.[132] Cooperation with the IAEA during the course of six inspections steadily eroded.[133] No progress was made on negotiating the required bilateral inspection regime within the South-North Joint Nuclear Control Committee.[134] Despite the signing of three additional protocols in Pyongyang in September 1991, there was a lack of progress on the implementation of all matters included in the agreements negotiated in December 1991 that addressed more than the nuclear issue.[135] In October 1991, South Korea announced the uncovering of a large North Korean spy ring in the South.

At the October 1992 meeting between the U.S. Secretary of Defense and the Defense Minister of South Korea, the United States and South Korea decided to continue planning for the 1993 Team Spirit exercise in the absence of significant progress on the

nuclear issue. Most of the exchanges for the remainder of the year were dominated by North Korea's insistence that Team Spirit be cancelled. South Korea, meanwhile, was determined to conduct the Team Spirit exercise unless there was progress on bilateral nuclear inspections.[136] There was no subsequent progress and Team Spirit was held as scheduled.[137]

Efforts by the IAEA to break the deadlock with North Korea over the inspection of two suspected nuclear waste storage sites were unsuccessful in February 1993. On February 25, 1993, the IAEA Board of Governors passed a resolution which gave North Korea one month to provide access to the two sites where inspection was determined to be "essential and urgent." IAEA Director General Blix was instructed to continue talks with Pyongyang and report back by March 25, 1993.[138]

On March 8, 1993 North Korea declared a state of semi-war that put its military forces at a state of full combat readiness. On March 12, 1993 North Korea announced that it was leaving the Nuclear Nonproliferation Treaty.[139] While there has been broad speculation concerning the reason for North Korea's renunciation of the NPT, there are several prominent factors: concern with the level of the 1993 Team Spirit Exercise, underestimation of the intrusiveness of IAEA safeguards inspections, fear of the consequences of a loss of face when the full extent of its reprocessing efforts are described in public, efforts to test the strength of the new Clinton and Kim Young San administrations, or simply a decision to proceed with a legal nuclear weapons program outside the jurisdiction of the NPT.[140]

To be consistent with the provisions of the NPT, North Korea's withdrawal would be effective at the end of a ninety-day notification period. The North Korean Government made an effort in the statements accompanying its announcement to establish a cause for withdrawal that was consistent with the provisions of the NPT. North Korea's withdrawal from the NPT generated instant condemnation and a flurry of activity in Washington, Seoul, Tokyo, Vienna, and New York. North Korea's departure from the treaty would damage nonproliferation prospects in Northeast Asia and

set an undesirable precedent on the eve of the 1995 NPT Review Conference.

In the period since North Korea's announcement on March 12, 1993, the United Nations and the IAEA encouraged North Korea to reverse its decision and to maintain the safeguards inspections.[141] After debate within the Clinton Administration and intense consultations with South Korea and Japan on a diplomatic approach,[142] the reopening of direct bilateral U.S.-North Korean negotiations on June 2, 1993 marked a significant change in U.S. policy toward dealing directly with North Korea on the nuclear issue.

North Korea agreed in bilateral negotiations with the United States to defer its withdrawal from the NPT during ongoing negotiations. The United States in turn gave security guarantees consistent with those contained in the United Nations Charter and the Nuclear Nonproliferation Treaty. While North Korea has continued periodic discussions with the United States, South Korea, and the IAEA, there is no evidence of substantive progress.[143] North Korea continues to dangle the prospect for inspections and compliance with the safeguards regime but has drawn out the process of negotiation. There has been no resolution of the key issues and no progress on special inspections of the two suspected nuclear waste disposal sites at Yongbyon that generated the initial crisis with the IAEA.

At this writing in early 1994, North Korea continues to hamper IAEA requests to conduct routine safeguards inspections. While in February 1994 North Korea reportedly offered to open seven main nuclear sites to IAEA safeguards inspections, this appeared primarily to be a tactic designed to avoid action by the IAEA Board of Governors to refer the nuclear issue to the U.N. Security Council for action.[144] When inspections actually were conducted in March 1994, the IAEA announced that North Korea had broken a seal placed by the IAEA in the reprocessing area at Yongbyon. During the March inspection, North Korea refused to allow the IAEA to take measurements which would determine whether and how much nuclear reprocessing may have taken place. This is an act of outright defiance of the IAEA safeguards inspection regime. By not maintaining safeguards in effect, North Korea rejects a key

U.S. precondition for continuation of bilateral discussions. If its objective has been to appear sufficiently responsive to the demands of the international community to avoid sanctions, North Korea's approach has been extremely effective. It has done this, however, while continuing to develop its nuclear weapons program outside any inspection regime.

2. Nuclear Incentives

In the case of North Korea, a number of incentives are relevant to the decision to pursue a nuclear weapons program. It is difficult, given the closed nature of the North Korean society and constant efforts by the leadership to manage or manipulate news from North Korea, to specify with precision the mix of incentives or disincentives that drive North Korea to nuclear weapons. This caveat must be kept in mind in the following examination of several elements of North Korea's approach to nuclear weapons.

International Prestige. North Korea consistently seeks to build a position of leadership in the developing world to increase its international and regional prestige. North Korea achieved significant results in Africa and Asia during the late 1960's and 1970's. Prior to the traumatic events in Eastern Europe and the Soviet Union in 1989, North Korea's international position underwent a steady erosion, largely as a result of the collapse of its decrepit economic and political system. When contrasted with the extraordinary economic progress made by Singapore, Taiwan, Hong Kong and, more painfully for North Korea, by South Korea, *Juche*[145] — North Korea's policy of self-reliance simply is not a credible model for economic development. South Korea's ascent to the ranks of one of the economic miracles, in contrast with North Korea's accelerating state of economic collapse, increases the antagonism between the two states.

North Korea clearly understood that South Korea's policy of *Nordpolitik* eclipsed the prestige of North Korea. This process increased the pressure on North Korea to compromise on key issues to maintain even a semblance of its former international position. North Korea was forced to reverse its long-held position on United Nations membership when it agreed to enter separately,

but simultaneously, with the South, or accept the fact that South Korea alone would represent the Korean Peninsula in the United Nations.[146] North Korea simply does not possess the ability to restore its sagging international prestige. As its economy continues the process of rapid disintegration, it increasingly cannot sustain economic growth, meet its international financial obligations or afford development programs in Africa and Asia. While it has developed a military industry, it needs customers paying with hard currency to finance its economy.

While North Korea's international and regional prestige was rapidly falling, South Korea's political and economic fortunes were on the rise. With the nature of politics on the Korean Peninsula since the 1950's, this situation had to be totally unacceptable to the North. These conditions strengthen the argument that the development of nuclear weapons was an element of a North Korean strategy to reverse the downward trend in North Korea's fortunes.

Political and Military Leverage. Nuclear weapons provide far greater practical benefits than the intangible element of prestige. Even a casual observer of international politics understands that states which possess nuclear weapons gain considerable political and military leverage over their adversaries. Negotiations with Japan for the normalization of relations, initiated to gain economic assistance and investment, were going nowhere even after North Korea submitted to IAEA inspections.[147] North Korea's leadership probably calculated that Japan's interests would change and dictate a more forthcoming approach in the face of a North Korean capability to deliver nuclear weapons against the Japanese home islands. This calculation applies equally well to South Korea, despite its security ties to the United States. It is likely that key leaders in North Korea argued that Pyongyang was not making progress in negotiations with Japan and South Korea because it was negotiating from a position of weakness.

With the decline in North Korean power, the argument is that nuclear weapons would allow the North to negotiate from a position of strength. Further, North Korea's leadership probably hoped that concessions on military exercises could be extracted from the

United States once there was convincing evidence that North Korea was committed to developing nuclear weapons.

Political leverage is inherent in the possession of nuclear weapons since their first use at Hiroshima. It is reasonable to assume that North Korea was not blind to this reality. At a time of relative weakness, the political leverage offered by nuclear weapons is evidently a strong incentive for North Korea in view of its tactics with all the major players since the March 12, 1993 announcement of its planned withdrawal from the NPT.

Military leverage is limited by the geographic range of North Korea's delivery capabilities, as well as by its inability to conduct military operations on a sustained basis after any nuclear strike.[148] North Korea's military leverage is limited to South Korea, but its effectiveness is mitigated by the U.S. nuclear capability.

The major powers commonly attribute military designs to third world nations that seek nuclear weapons, even though the nations themselves probably have less developed plans for their employment. North Korea probably hopes that nuclear weapons will be sufficient to deter the United States and can be used politically for leverage with Japan, the United States, and South Korea. While the Korean People's Army no doubt supports the development of nuclear weapons, its planning for employment of such weapons is probably not terribly sophisticated.

There is always the possibility that the North Korean nuclear weapons program, if open and declared, could backfire if South Korea, Japan, or Taiwan started nuclear weapons programs in response to the North Korean program. North Korea could assume, however, that the United States would react to any new South Korean program as it had in the 1970's to the nuclear program started by Park Chung Hee, which was cancelled due to U.S. pressure. Thus South Korea could not initiate a weapons program and effectively maintain its alliance with the United States. Additionally, domestic and international pressure could be counted on to discourage any Japanese weapons program.

Deter Adversaries. A significant incentive for North Korea is to deter other states in the region. Because North Korea has faced the United States as an adversary since its birth in 1949, this has been a decisive incentive since the defeat of North Korean efforts to forcefully unify the Korean Peninsula in 1950-53. Throughout the subsequent period, North Korea simply did not have the economic or technological capability to build nuclear weapons. Today, North Korea lacks its former strategic allies, and now faces a much stronger opponent in the emerging economic giant of South Korea. Moreover, South Korea's military is steadily improving, and it is moving toward a more democratic political system that commands the support of the South Korean people.

The desire to deter the United States and South Korea was reinforced by the technical capability employed by the United States in the 1991 Persian Gulf War, and the willingness to pressure Grenada, Libya, and Panama. One of the lessons learned by potential opponents of the United States was that they could not match the United States in a conventional conflict where the United States could bring advanced technologies to bear. The only limitation, however, would be hesitation by the United States public and Congress to make commitments that might involve high American casualties or a conflict. A proven nuclear weapons delivery capability that held out the potential for such casualties might well be the ultimate North Korean deterrent against the United States.

Ideology and Nationalism. A final incentive is the dominance of ideology and nationalism in North Korean political culture. *Juche* is at the core North Korea's ideology of extreme nationalism and autarky which rejects foreign interference, involvement, or dependence. A nuclear weapons program which established self-reliance in national security would be the definitive demonstration of *juche*. Nuclear weapons could ensure the survival of the state and the Kim Dynasty at a time when outside support is disappearing rapidly.[149]

Summary. The incentives for North Korea's nuclear weapons program are best understood in the context of Pyongyang's sense of isolation and irrelevance in the midst of the collapse of commu-

nism in Eastern Europe and the Soviet Union that unfolded during the late 1980s. In the years prior to 1989, North Korea's leadership did not face compelling incentives to develop nuclear weapons. While North Korea has lived with constant confrontation with the United States since 1953, and has witnessed the growing strength of South Korea, this was offset with strategic alliances with the Soviet Union and China. With the revolutionary changes of 1989-1991, North Korea witnessed a fundamentally adverse shift in the global balance of power that led to the collapse of its strategic support and the deterioration of their domestic economy. The strategic isolation faced by North Korea and the concomitant collapse of Eastern Europe and the Soviet Union highlighted the issue of North Korea's long-term prospects for survival. To complicate the already bleak picture, the United States had demonstrated a willingness to act decisively, either unilaterally or multilaterally, with overwhelming military force against regimes which challenged its interests. The 1991 Persian Gulf War reinforces the belief that the United States will respond with force. Thus, an additional incentive for the North Korean leadership to possess nuclear weapons was the dramatic change in the international security environment that greatly reinforced the tendency of a paranoid regime to ensure its survival by any means.

3. Nuclear Disincentives

There are several prominent disincentives that affect North Korea's decision to seek nuclear weapons. Some will argue that it is impossible to surmise North Korea's disincentives because the regime in Pyongyang is not rational, but the opposite argument is more persuasive. North Korean actions, while often unconscionable, appear irrational only to observers who do not make the conscious effort to view an event or issue from Pyongyang's perspective. In fact, a very strong argument can be made that North Korea has a methodical decision-making process that has allowed the regime to play a weak hand very effectively throughout the Cold War and especially during the current crisis over its nuclear weapons program.

Economic Costs. A nuclear weapons program is bound to impose significant economic costs for a nation which has endured *de facto* sanctions since 1950. North Korea's domestic economy is shrinking now that it no longer receives concessions on prices for oil and other commodities from China and the Soviet Union or the successor state of Russia.[150]

The North Korean initiatives of late 1991 and early 1992 may well have been driven by the advice of China that improved relations with South Korea, Japan, and the United States might resolve North Korea's economic situation. It is conceivable that North Korea was prepared to give up its nuclear weapons program during this period in exchange for progress on economic issues.[151]

There is evidence that North Korea's leadership understands the magnitude of its economic crisis.[152] There have been intensive efforts to interest South Korean business leaders in development projects in Nampo and other regions in the North, but these have been singularly unsuccessful. Kim's relative, Kim Dal-hyon, in his conversations in Seoul, stressed the North's desire for economic development.[153] Additionally, there has been extensive North Korean legislation to facilitate development of the Tuman River Project. There have been increased efforts to sell arms abroad and to broker deals for weapons from the former Soviet Union. Most endeavors are designed to gain hard currency to support economic development and especially for oil imports to meet energy requirements.[154] Other economic initiatives are designed to gain technology and development resources. But North Korea wants to preserve highly controlled conditions to minimize the openness that China has experienced, and which the current regime in North Korea probably could not endure.

Obviously, the deterioration of the economic conditions in North Korea constitutes a disincentive to nuclear ownership. The paradox, however, is that nuclear weapons are likely to push the developed states toward additional economic sanctions at precisely the moment when North Korea desperately needs economic assistance and investment. It can be argued that North Korea terminated its efforts in late 1991 and early 1992 to satisfy the demands of South Korea, Japan, and the United States when it concluded that economic

assistance and investment were not forthcoming. In any event, economic disincentives were not sufficiently compelling to dissuade North Korea from developing nuclear weapons or announcing its withdrawal from the NPT on March 12, 1993.

Regional Stability. North Korea has displayed remarkable immunity to charges that nuclear weapons will destroy regional stability and lead to international sanctions. North Korea watches as South Korea benefits from the relative stability in Northeast Asia to develop into a major economic power. Since 1953, North Korea has sought to foster instability in South Korea through propaganda and terrorism. North Korea has not welcomed the emergence of political stability in South Korea, as exemplified by the inauguration of a civilian president who commanded an 80 percent public approval rating. Moreover, throughout its brief history as a nation, North Korea has perpetuated acts of terrorism and defiance of the international community, including the assassination of the South Korea cabinet in 1983. There is no significant evidence that the prospect of regional instability is a significant disincentive to the current North Korean regime.

Risk of Preemption, War. The military installations and defensive reactions observed at Yongbyon clearly indicate that North Korea is concerned about the possibility of U.S. or South Korean preemptive strikes against its nuclear weapons program. North Korea probably hopes that the United States and South Korea are deterred by the belief that a preemptive attack might provoke a North Korean invasion or lead to the use of any surviving nuclear weapons. The obvious risk is that North Korea will pose a threat to Seoul that ultimately escalates to the point where the Korean Peninsula is plunged into a new war. The danger of war in this context may prove more of a disincentive to Seoul and Washington to undertake a preemptive strike than a disincentive to Pyongyang to pursue a nuclear weapons program.[155] In the end, North Korea can claim that its nuclear weapons program is a minor change in the status quo, thus putting the United States and South Korea in the position of starting a war. The burden thereby falls on the United States and South Korea, rather than North Korea.

North Korea also may be confident that the dispersion and concealment of its nuclear weapon program lessens its vulnerability to preemptive strikes, particularly if it has developed alternative underground reprocessing and weapons fabrication facilities. Still, North Korea cannot escape the fact that its major nuclear facilities, particularly the nuclear reactors at Yongbyon, remain vulnerable even if the location of nuclear weapons remains uncertain. That vulnerability, however, puts the United States and South Korea in the difficult position of potentially starting a war to destroy North Korean nuclear facilities. As the debate in the United States, South Korea, and Japan attests, it is easier to accept the status quo than it is to plunge into the uncertainties of war. This reasoning explains why the risk of preemption is not a major disincentive to North Korea.

Summary. In summary, other than economic concerns, the disincentives to nuclear proliferation in North Korea are largely marginal, which explains why it has been so difficult for the United States, South Korea, and Japan to persuade North Korea to disavow its nuclear weapons program. The "sticks" in the "carrots and sticks" approach do not impose much pain, while the "carrots" could be viewed as "poisoned carrots" by the North Koreans.[156] This regime considers the survival of its system to be at risk, and thus relies on its survival instincts to shape its policy on nuclear weapons. With these motivations, there is only one condition that could lead North Korea to abandon nuclear weapons development and allow the types of inspections which will give that decision credibility in the international arena. That condition exists if it is convinced that the survival of the regime is better assured by giving up its nuclear weapons, or conversely if it is convinced that the regime's survival is more endangered by continuing the program.

4. A Destabilizing Case of Proliferation

There are several reasons for the judgment that North Korea's nuclear program is a destabilizing prospect for the precarious balance on the Korean Peninsula.

There has been a relatively stable balance in Northeast Asia since the normalization of relations between the United States, Japan, and China in the 1970's. This balance was enhanced by the disappearance of the Soviet Union and the reemergence of more harmonious relationships between Russia, China, and the United States. The improvement of relations among the major powers in the region defused the potentially dangerous situation of the major powers being drawn into a conflict on the Korean Peninsula. It is no longer possible for North or South Korea to use the major powers as bargaining chips, as they did during the various phases of the Cold War. This situation could change if Sino-American relations or Russo-Japanese relations continue to deteriorate, but it is doubtful that major power competition is a factor on the Korean Peninsula even in a period of increased confrontation.

The major powers that share an interest in maintaining stability in Northeast Asia do not welcome the development of nuclear weapons by either North or South Korea. Each, of course, is motivated by different concerns. China's concerns probably center more on the U.S. reaction and secondarily whether North Korean nuclear weapons will provoke Japan to develop nuclear weapons. Japan's concerns center on its own vulnerability and security in the era of a North Korea heavily armed with nuclear and conventional weapons. Russia's concerns center on both the possible spread of nuclear weapons to Japan and the potential for future Chinese influence with a nuclear-armed and reunified North Korea. North Korea, after all, shares a border with Russia and is near the major Russian seaport of Vladivostok.

The United States is motivated by three concerns. The first is the general danger of the spread of nuclear weapons in Northeast Asia. The second is the arms supply relationship between North Korea and other destabilizing regimes in the Middle East, given North Korea's desperate need for hard currency.[157] The third involves concerns about the ability of the failing regime in Pyongyang to remain prudent in a crisis. The consensus among most states in the region is that the spread of nuclear weapons to North Korea is destabilizing. Further, most states appear to believe that the world will cross a new threshold in nuclear proliferation if

North Korea provided such a capability to other terrorist regimes or non-state organizations with terrorist agendas.

It can be argued that a nuclear-armed North Korea could be stabilizing. This argument rests on the proposition that the possession of nuclear weapons gives the North Korean leadership confidence in the survival of the regime and the time to take the necessary international and domestic steps to deal with its internal problems. Under this scenario, those steps in time would moderate the regime and pave the way to peaceful reunification. But this prospect is a hollow one. The survival of the regime is not militarily threatened, and in that case nuclear weapons cannot provide security against the real forces that threaten the survival of the regime, which are endemic failures of the political and economic system. If nuclear weapons could guarantee the survival of regimes such as North Korea, the world would still be dealing with the Soviet Union under the tutelage of Mr. Brezhnev's successors. The obstacle is that North Korea's leadership is no more likely to comprehend this reality than its predecessors in the leadership cadres in the former Soviet Union, former East Germany, Hungary, Czechoslovakia, Poland, or Romania prior to 1989.

A second argument is that nuclear weapons will have a stabilizing influence if it imposes restraints on the behavior of North Korea and South Korea. The hope is that a period of nuclear coexistence will prevail once the parties understand the dangers of a conflict among nuclear-armed states. This argument is more difficult to dismiss in view of the experiences of developed states during the Cold War. At the same time, these states may experience a period of high tensions and long-term nuclear confrontation. Nevertheless, this outcome may be the most likely one in view of the U.S. tendency to backdown in a confrontation with North Korea.

5. Problems and Prospects

The major problem in halting nuclear proliferation in North Korea is the inherent difficulty of dealing with a failing, isolated, and paranoid regime. North Korea's economic system is collapsing

and its leadership is in the process of a generational transition.[158] A regime that already is under heavy international pressure has little to lose by additional sanctions only imperfectly applied.[159] The economic assistance and investment that North Korea needs most desperately carry the seeds of the destruction of the totalitarian regime because it leads to political and economic reforms that are incompatable with a totalitarian state.

The first and most critical problem for the United States, South Korea, and Japan is to develop a strategy for dealing with this regime. The very isolation of the regime has reduced Pyongyang's influence on other states, as well as a decline in the ability of other states to influence North Korea. The only exception is China, but its limited influence on North Korea is dwindling. The current state of Sino-American relations, coupled with inherent Chinese opposition to international sanctions against another communist regime and ally, suggests that China will not support any serious effort to impose sanctions.[160] China's willingness to advise North Korea apparently does not extend to exerting influence on Pyongyang to do the bidding of the United States and its allies.

The second major problem is the military balance on the Korean Peninsula. While North Korea probably could not win a conflict on the Korean Peninsula, its military strength guarantees that a war would not be so lopsided as were the defeats of Iraq, Panama, and Grenada. It is equally unlikely that North Korea will absorb a punitive strike as did Libya without later attempts to inflict punishment, perhaps through covert retaliation. While the United States and South Korea would win a war, the cost in human lives and property would be significant. Other nations in the region probably would not support armed action and may even draw back from the imposition of economic sanctions. South Korea recently said that the United States overreacted to North Korea's nuclear weapons program.[161] South Korea also suggested that the United States scale back its rhetoric against North Korea, principally because it fears tensions will lead to hostilities.[162] While military solutions may be available, they are probably too costly in human and political terms to be an effective tool for denuclearizing North Korea.[163]

The prospect is that North Korea will continue its nuclear weapons program to its conclusion.[164] It will drag out negotiations and seek concessions from the United States, Japan, and South Korea, even as it accepts some broad agreements in principle, limited inspections, or other cosmetic or superficial actions to deflect international pressures.[165] But North Korea's actions will not permit the intrusive inspections required to give any credibility to claims that it has no nuclear weapons program.[166] The concessions will be designed to defuse serious threats of unified international action against North Korea, rather than dismantle the nuclear weapons program.

The coalition of states opposed to North Korea's nuclear program will continue to apply the "carrots and sticks" policies through the threat of international pressure as well as bilateral negotiations in Vienna and New York. There will be an increasing cacophony of support for more negotiations, consultations, and concessions, intermixed with sabre rattling and tough talk on sanctions.[167] There will be growing anxiety that the measures used to pressure North Korea will fail to force the abandonment of the nuclear weapons program, and will create instability in the North that could result in the explosive disintegration of the regime.

Finally, while optimists hope for fundamental change in the North Korean regime before it develops nuclear weapons, the more likely prospect is that within the next two years North Korea's Kim (father or son) will declare that North Korea has nuclear weapons and implement its withdrawal from the NPT, or offer to change its status within the NPT. The United States, Japan, and South Korea will face the even more difficult problem of a dangerous, nuclear-armed, and potentially unstable regime in North Korea. Additionally, the international community will face the prospect that nuclear weapons will become available to other terrorist states and organizations, as exemplified by North Korea's assistance to Iran and others. While this prospect is bleak, it illustrates the difficulties in counter-proliferation when dealing with desperate but well-armed regimes that ignore international pressure to abandon nuclear weapons.

D. Iran's Nuclear Program: Islamic Ideology or Realpolitik?

1. Background

The case of Iran's nuclear weapons program is important to the stability of the Persian Gulf and the Greater Middle East. With Iran's emergence as the dominant regional power after Iraq's defeat, Iran's decision to acquire nuclear weapons represents a profound challenge to the stability of a region that borders on the former Soviet Union and China and possesses the bulk of the world's petroleum reserves. Nuclear weapons in the hands of Iran's leadership has the potential of changing the balance of power in the Greater Middle East on a profound level.

Origins. The burden of evidence suggests that Iran is pursuing a nuclear weapons program in its efforts to possess an independent nuclear capability. Iran's President Akbar Hashemi Rafsanjani and other senior Iranian officials consistently proclaim Iran's intention to remain a nuclear-free state as a signatory of the Nonproliferation Treaty. These pronouncements, however, contradict Iran's deliberate steps toward the possession of nuclear weapons.

Iran's nuclear weapons program began during the reign of the Shah in the 1960s. The program started with the acquisition of a small nuclear research reactor that was purchased from the United States and built at the Amirabad nuclear complex in Tehran.[168] After the oil crisis in the wake of the 1973 Yom Kippur War, the Shah declared a plan to construct 12 nuclear plants in the 1,000-megawatt range. Iran signed contracts with German, French, and Japanese companies to build these reactors.[169] Construction on the first two plants commenced in the mid-to-late 1970s at Bushehr on the shores of the Persian Gulf. While the putative purpose of the plants was the peaceful production of energy, the real reason was to begin the drive toward establishing Iran as a nuclear power.

The ascent of the Ayatollah Khomeini to power in February 1979 led to the suspension of construction at the two sites. The reason was Khomeini's deep reservations about the dangers of

possessing nuclear weapons, which he saw as "a creation of Western Satan."[170] The outbreak of war between Iran and Iraq in September 1980 led to a complete cessation of construction after the Germans withdrew technical support for the project. Iraq also launched several strikes against Iran's nuclear facilities. The last one was successful in destroying a good portion of the Bushehr reactor and halting work there.

With the end of the war in 1988, Iran hoped that the states and international corporations from the Shah's reign would resume construction. However, the German, French, and Japanese companies refused. France, in particular, refused to resume a $1 billion joint venture, begun in 1974, with Belgian, Spanish, and Italian participation. The reason was that this project would have given Iran free access to enriched uranium technology.[171] The German Government also rejected Tehran's demand to fulfill its commitment to construct two Siemens nuclear power reactors at Bushehr.[172]

Iran clearly faced coordinated international efforts to restrain its nuclear weapons program. In response, Iran's senior leadership began a covert nuclear weapons program in the late 1980s, modelled essentially after Iraq's now-defunct calutron-based weapons program.[173] Iran's motivation is to conduct the program on a clandestine basis to diminish the chances of a preemptive attack along the lines of the one conducted in 1981 when the Israeli Air Force bombed the Osirak nuclear plant near Baghdad. Iran's nuclear weapons program employs undercover operations aimed at acquiring critical technologies,[174] the dispersal and concealment of installations, and the recruitment of foreign experts in nuclear weapons design and engineering, notably from Russia, China, North Korea, India, and Pakistan.[175] Iran also offered to pardon the expatriate Iranian nuclear physicists and scientists who returned from self-imposed exile during the 1979 revolution. In any case, Iran continues to be the recipient of significant technical support from Pakistan,[176] India,[177] and China.[178]

Nuclear Reactors and Materials. Iran has an aggressive program to develop nuclear reactors as part of its weapons program. There are estimates that Iran has as many as 10 nuclear

research reactors.[179] Iran has enlisted the support of India,[180] Russia,[181] and China[182] in its efforts to build nuclear reactors and acquire specialized personnel for its nuclear weapons program.[183] It is estimated that Iran's annual nuclear development in 1992 cost $800 million.[184] Iran has purchased significant quantities of nuclear materials, including beryllium and 100 tons of low-enriched uranium dioxide pellets from Kazakhstan. Iran has a uranium enrichment centrifuge program at Sharif University in Tehran.[185] Among the suspicious purchases for the program were balancing units and magnets obtained in Germany and Switzerland.[186]

Estimating Nuclear Capability. There is a constant stream of reports about Iran's nuclear weapons program.[187] Most specialists believe that eventually Iran will acquire nuclear weapons. While there is a broad international consensus that Iran has a nuclear weapons program,[188] it is not possible to provide precise estimates whether Iran will have an operational nuclear weapon, for the obvious reasons.

Some observers have been willing to estimate when Iran's nuclear weapons program will produce operational nuclear weapons. The head of Israeli military intelligence estimates that Iran will have a nuclear capability by the end of the decade.[189] Others, including British and French officials, estimate that Iran might become a nuclear power sooner than that,[190] and others, such as an adviser to the National Council of Resistance of Iran, estimate that Iran will possess nuclear weapons within three to five years.[191] Nor is it possible to ignore completely the still-unsubstantiated reports that Iran already possesses nuclear weapons purchased from Kazakhstan in 1991 or 1992,[192] even though the United States and Israel, among others, have dismissed such reports as not credible.[193]

2. Nuclear Incentives

The decision to possess nuclear weapons is for Iran, just as it has been for all nations examined in this study, a complex one. It involves difficult choices among competing incentives and disin-

centives. For Iran, there are several factors that shape its decision to become a nuclear-armed state.

Deter Adversaries. A fundamental component of Iran's decision to possess nuclear weapons is the desire to deter both global and regional adversaries. Iran's leadership emphasizes the inherent hostility of developed states toward Iran and Islamic fundamentalism and the concomitant fear that a nuclear-free Iran could be subject to blackmail by nuclear-armed states.[194] There is a constant stream of charges by Iranian officials that states are preparing to attack Iran.[195] While Iran's leadership denies the existence of a nuclear weapons program,[196] they undoubtedly have calculated that, as a nuclear-state, Iran is less vulnerable to attack and intimidation.

There are three principal targets of Iranian rhetoric about external adversaries. The first, of course, is the United States. Iran's leadership harbors deep fears about their vulnerability to political and military intimidation by the United States. The second is Iraq, which many believe represented the main impetus behind Iran's nuclear weapons program.[197] The third is Israel, whose attack on Iraq's Osirak nuclear reactor in June 1981 and subsequent public threats to "disrupt" Iran's nuclear weapons program, are vivid examples of the threats that exacerbate the already heightened Iranian fears.[198] A reasonable assumption is that Iran's leadership believes that nuclear weapons will increase Iran's ability to deter these adversaries.

Domestic Political Pressure. The relationship between domestic politics and Iranian foreign policy decisions is often opaque. There are two themes that offer insights into the decision behind Iran's nuclear weapons program. First, nuclear weapons have some propaganda value in Iranian domestic politics, in particular for organizing and mobilizing public support for the regime.[199] Second, there are political groups in Iran that appear to view nuclear weapons as a symbol of the tough and resolute stance of the leadership in dealing with foreign adversaries.[200] There are political pressures on the regime not to capitulate in the face of international pressure on Iran to abandon nuclear weapons.

Political and Military Leverage. Iran's fundamental incentive to become a nuclear-armed state is the ability to exercise greater political and military leverage over other states. Iran's leadership undoubtedly understands that Iraq's strategic error, as identified by the Chief of Staff of India's Army in the spring of 1991, was to attack Kuwait before the completion of its nuclear weapon program. The resulting imbalance between the nuclear-armed states of the United Nations coalition and Iraq contributed, *inter alia*, to its devastation and defeat. If Iran was armed with nuclear weapons, such a coalition might never form or its actions would be highly constrained by the threat of nuclear escalation. Iranian publications have said that Iran will not fall into the same trap as its longtime foe, Iraqi President Saddam Hussein,[201] — a trap which Iran defines as the paralysis that exists when regional powers confront a nuclear-armed foe.

Iran's desire to use nuclear weapons for leverage is directed against three states in particular. First, Iran's desire to counterbalance the power of the United States is consistent with Iran's deep distrust of American motivations in the Gulf. In a recent trip to China, President Rafsanjani described Iran's and China's "shared mistrust of the United States' role on the international stage."[202] At the same time, the lesson of Desert Storm for Iran is the U.S. willingness to use military power in the Persian Gulf region. Iran's leadership certainly believes that the United States would come to the defense of Saudi Arabia, or perhaps other regional powers, but it also believes that an Iranian nuclear arsenal would lead to U.S. hesitation in any decision to intervene against Iran.

Second, Iran's nuclear buildup is motivated by its fear of Iraq, which historically is Tehran's oldest regional adversary, and the desire to settle old scores with Iraq. Following its eight-year war with Iraq, Iran's massive arms buildup is part of a policy of rebuilding its armed forces to be the strongest in the Persian Gulf region.[203]

Third, Iran believes that Israel poses a threat to its broader ambitions as a major regional power. Nuclear weapons offer a powerful instrument for the Islamic state to counterbalance Israel's

nuclear arsenal.[204] Moreover, the Iranian leadership has a habitual concern about an Israeli preemptive attack against Iranian nuclear facilities. General Mansour Sattari, Chief of Staff of Iran's Air Force, in response to Israeli threats to attack any country introducing nuclear arms into the Middle East,[205] warned Israel that any attack on Iran "would cost it dearly."[206] In addition to worries about military attack, anti-Israeli rhetoric is a regular theme in Iranian policy.[207]

Regional Hegemonical Ambitions. By virtue of its size, wealth, and overall power, Iran believes that it has an inherent right to be the regional hegemon in the Persian Gulf. There have been numerous reports from government officials and intelligence analysts which assert that Iran is poised to establish itself as the preeminent state in the Persian Gulf in the wake of Iraq's defeat in the 1991 Gulf War. Moreover, Iran's recent modernization program of its military strengthens the belief that the regime poses a clear threat to moderate countries throughout the region.[208] States in the region worry that the recent Iranian dispute over the jurisdiction of Abu Musa exemplifies Iran's strategic ambitions.[209] The nearly unanimous view is that a nuclear arsenal would strengthen Iran's ability to bolster the forces of Islamic fundamentalism in the region.

3. Nuclear Disincentives

It is obvious that the Iranian leadership believes that the decision to become a nuclear state is fundamentally sound. But Iran's political leadership must contemplate several disincentives.

Military Disincentives. The risk of preemption is Iran's single greatest military disincentive. Both the United States and Israel have the ability to destroy Iran's nuclear weapons complex. Israel recently raised the possibility of preemptive attacks, when the commander of Israel's Air Force warned Iran to stop the development of non-conventional weapons. This was interpreted by Iran as a threat to strike Iranian nuclear facilities.[210] The United States, however, has not made official any threats against

Iran, even though the implicit threat of U.S. actions never could be dismissed.[211]

Iraqi Reactions. Iran historically has been sensitive to Iraq's actions given the rivalry between the two states. The existence of an Iranian nuclear weapons program is no exception. For the present, Iraq's ability to attack Iran's nuclear facilities is quite limited by the inspection regime imposed by the United Nations since 1991, and by the damage suffered during Desert Storm. Iran probably believes that Iraq will possess nuclear weapons before the end of the decade, even though the process will be delayed by U.N. inspections and U.S. actions.

Economic Disincentives. Iran's nuclear program raises two potential economic disincentives. The first is the risk of embargoes or trade sanctions imposed by developed states that are concerned about its nuclear program. The second is the cost associated with the development of nuclear weapons, which entails many billions of dollars. Iran, however, probably has discounted the first disincentive as unlikely, and has gained experience since 1979 in managing its affairs in the face of constant opposition from developed states. The costs of developing nuclear weapons are significant in the face of Iran's relatively primitive state of economic and technological development, but this has not proven to be a decisive impediment.

U.S.-European Pressure. The United States and Europe are likely to maintain the already-high public visibility of Iran's nuclear program. But for now, Iran feels very little pain from this pressure. It is unlikely that any state or international organization will apply sanctions against a nascent nuclear weapons program in the absence of a direct military challenge by Iran. The strategy for Iran is to follow quiet policies in the Persian Gulf while giving its nuclear weapons program time to reach fruition.

International Opprobrium. During the last several years, the number of calls on Iran to disavow nuclear weapons has grown in frequency and intensity. It is likely that the developed states

will escalate their demand that Iran remain a nuclear-free state, leading eventually to the imposition of sanctions and other coercive measures against Iran. At the same time, however, Iran must suspect that the degree of commitment by these states is likely to waver as the indecision over North Korea's nuclear weapons program demonstrates. Iran's leadership probably believes that as long as opprobrium is cheaper than action, particularly military action, Iran will not be attacked.

4. Iran as a Destabilizing Case

Iran's leadership has made the decision to develop nuclear weapons because the incentives, on balance, outweigh the disincentives. The argument can be made that Iran's decision is destabilizing in several fundamental ways.

First, nuclear weapons in the hands of an Islamic state committed to international terrorism creates profound anxiety for many states. The universal fear is that Iran will use nuclear weapons as a political symbol of its independence to support policies that aim to promote the forces of instability and disruption. The fact that the symbolism of a nuclear-armed Iran is more than most states are willing to countenance reinforces the belief that Iran sees nuclear weapons as an instrument for fomenting instability and changing the present balance of power. These perceptions create the impression that nuclear weapons in the hands of Iran's leadership is a destabilizing prospect. Iranian statements to the contrary carry very little, if any, credibility in the face of this reality.

Second, by virtue of these worries, the existence of an Iranian nuclear deterrent invites preemptive attacks. For the states that view Iranian nuclear weapons as an inherently destabilizing development, sooner or later there will be an attempt to destroy those facilities, despite the political and military problems associated with preemptive attacks. Israel's past record and public discussions of preemption should serve as a warning that the development of nuclear weapons causes profound worry within some quarters.

Third, an Iranian decision to possess nuclear weapons will put pressures on Iraq, Syria, and Saudi Arabia to create their own nuclear forces. These states would be in a profoundly disadvantageous position in a confrontation with a nuclear-armed Iran. The desire to possess nuclear weapons to counterbalance Iran would fuel a nuclear-arms race in the region. There is no evidence that other states in the Persian Gulf would forego nuclear weapons if Iran possessed them. There is the further danger that Iran will become the catalyst for the nuclearization of the region.

Fourth, Iran's decision to develop nuclear weapons increases the prominence of these weapons in the region. The danger is that if nuclear weapons become the currency of power in the region, other states will be compelled to follow suit. The fears surrounding the emergence of a nuclear-armed Iran will push other states to counter with their own nuclear arsenals. It is difficult to argue that the interests of the developing states would be indifferent to the nuclearization of the region.

There is one sense in which Iranian nuclear weapons could have a stabilizing effect on the Persian Gulf region. If Iran's decision to develop nuclear weapons propelled others to make the same choice to deter nuclear use, and if states acted responsibly in the face of a nuclear balance of terror, then nuclear weapons could stabilize the region. The fear, however, is that Iran's penchant for destabilizing actions, coupled with its support for terrorism, lends credibility to concerns that Iranian nuclear weapons will not be a force for stability. If multilateral deterrence emerged in the region, however, there is some hope that stability might emerge, but this is a thin reed upon which to build hope.

5. Problems and Prospects

The challenge for Iran is to consider the effects of its decision to develop nuclear weapons on the stability of the region. Toward that end, Iran's nuclear program raises several challenges for international stability.

First, it is apparent that Iran is proceeding to develop an independent nuclear arsenal, despite the conclusion of an IAEA

inspection team in 1992 that Iran is not developing a secret nuclear weapons program.[212] Debates about whether Iran is attempting to build nuclear weapons are increasingly irrelevant. The salient question involves responses, if any, to Iranian nuclear weapons, rather than deliberations about whether Iran is developing nuclear weapons. As long as the debate focuses on whether Iran is building nuclear weapons, it detracts from shaping a strategy for averting this prospect.

Second, the effect of an Iranian nuclear arsenal depends to a significant extent on the degree of Iran's hostility to the developed world. The prospect of Iranian hostility to the interests of developed states strengthens arguments that Iran's nuclear arsenal is inherently destabilizing. The problem is that there is little outside states can do to shape Iran's image of the outside world. Furthermore, Iran's current policies do not contribute to the image of a state that desires to contribute to either regional or global stability.[213]

Third, external pressure on Iran to abandon its efforts to develop nuclear weapons probably is ineffective. Both the United States and Israel have raised concerns about Iran's intentions, but with little apparent effect. Iran is oblivious to criticisms about its nuclear program, and probably believes that its decision is correct and proper for a sovereign state. Only nuclear weapons, Iran's leadership calculates, will insulate it from external threats and bullying. The prospect of Iranian determination and recalcitrance suggests that a policy based on rhetoric is a largely ineffective deterrent.

Fourth, if Iran develops nuclear weapons, it must establish a secure command and control system to ensure operational control over its arsenal. There are great dangers associated with nuclear arsenals that are not controlled by a secure and robust communications system. While Iran probably is ten years away from the deployment of a nuclear arsenal, it possesses a very sophisticated telecommunications system that could provide a highly-capable command and control for its nuclear forces.

There is no guarantee that Iran's nuclear arsenal can be transformed into a force that contributes to regional stability. Iran's nuclear weapons program will be cause for concern among its neighbors, largely because the fact that much of Iran's behavior is dependent on internal political processes, which are beyond the ability of outsiders to influence, multiplies the worries. But there is the possibility that the latent instability of Iranian nuclear forces can be mitigated in a region that captures the attention of a significant portion of the world. The minimal condition of stability is that Iran's nuclear forces do not attract attention as an overt challenge to its neighbors. At present, there is little chance that the outside world will move against Iran's nuclear weapons program. If states are not willing to end the program, at least they can quell the rhetoric to the contrary.

E. Proliferation by Non-State Actors

1. Background

For the past four decades, the proliferation of nuclear weapons was controlled entirely by sovereign states. The possession of nuclear weapons entailed technological capabilities and economic resources that were available only to states. The first threshold of nuclear proliferation was confined to the great powers and allies, because only these states could afford to develop nuclear weapons. The second threshold of nuclear proliferation includes those medium-sized regional powers that have joined the nuclear club. While there were worries about the emergence of terrorist organizations with nuclear weapons, this prospect has not come to fruition. The result is that nonproliferation efforts focused almost exclusively on the prospect of nuclear weapons technologies and materials falling into the hands of state actors.

With the growing maturity of nuclear technologies and the diffusion of the requisite technologies and materials that are necessary for the construction of nuclear weapons, the international community may be poised on the edge of the emergence of a new category of nuclear proliferants. This third threshold of nuclear proliferation raises the prospect of the spread of nuclear

weapons into the hands of non-state actors. The possession of nuclear weapons by non-state actors is more potentially destabilizing than any other form of nuclear proliferation.

The term "non-state actors" refers to the groups, movements, or organizations that do not have the responsibilities normally associated with sovereign states. These actors are distinguished by their proclivity to support ideologies that seek to destroy the *status quo* through the acquisition of nuclear weapons at some undetermined future point.

2. Nuclear Incentives

There are several incentives that increase the strategic attractiveness of nuclear weapons for these actors.

International Prestige and Visibility. Nuclear weapons would increase dramatically the visibility and prestige of non-state actors that were believed to possess nuclear weapons. Nuclear weapons would allow these groups to command considerable attention. The prospect of denunciations by great powers or international organizations would serve to broaden their power.

Political and Military Leverage. Nuclear weapons would strengthen the ability of non-state actors to exert leverage over traditional states. The prospect of nuclear attacks by these groups would allow them to bend states to their will. Their strength is increased by the fact that they do not offer clear targets for retribution. It is hard to retaliate against non-sovereign entities.

Deter Intervention. Nuclear weapons in the hands of non-state actors would compel caution on the part of states that contemplate military intervention in a region. As truly the "weapon of the weak," nuclear weapons would make intervention far riskier for states.

Ideology, Nationalism, and Revenge. Nuclear weapons at the disposal of movements animated by ideology or nationalism provide an instrument for inflicting revenge on established states and political regimes.

Domestic Instability. Non-state actors could see nuclear weapons as an instrument for destroying a hostile state or regime. If the use of a nuclear weapon were attributed mistakenly to a state, then retaliation directed against that innocent party would serve the aims of the group.

3. Nuclear Disincentives

There are two fundamental disincentives to nuclear ownership by non-state actors.

Economic and Technological Costs. The costs associated with the development or procurement of nuclear weapons are significant, as described earlier. While some groups, such as drug cartels, might be able to afford nuclear weapons, for many groups the great expense of nuclear weapons effectively deters possession.

Risks of Preemption. Even the slightest prospect that nuclear weapons might fall into the hands of non-state actors will generate intense efforts to halt the process. Public attention would eliminate the possibility of covert action, and probably lead to attempts to destroy the group.

4. A Destabilizing Case of Proliferation

The proliferation of nuclear weapons into the hands of non-state actors constitutes the third threshold of nuclear proliferation. This is certainly the most dangerous type of proliferation, and it would be the most difficult to manage, for several reasons.

First, the possession of nuclear weapons by non-state actors is a logical consequence of the second threshold of the proliferation of nuclear weapons into the hands of states, such as Iran, Iraq, and North Korea, that support terrorism. Once these states possess nuclear weapons, it will be difficult to track with any degree of precision where the weapons are or who exercises control over them. The potential for instability is greatest when states do not know precisely who has nuclear weapons or the origin of nuclear threats.

Second, these actors are not governed by the normal constraints. Without the physical territory, borders, or accoutrements of sovereign statehood, their actions are not constrained by fears of retaliation. There is the real prospect that the use of nuclear weapons would leave no clues as to who is responsible or why the weapons were used. These actors also are motivated by narrow concerns, such as the status of political prisoners, and thus might use nuclear weapons for disproportionate reasons. Such groups are, by their nature, not amenable to the normal entreaties.

Third, the radical nature of these groups increases their tendency to use any means possible to achieve their goals. Nuclear terrorism may be a singularly effective instrument for coercing states to bend to their will when states consider the implications of stoic policies that refuse to negotiate with such organizations.

5. Problems and Prospects

It is easy to argue that the third threshold of nuclear proliferation into the hands of non-state actors is imminent. With the emergence of nuclear-armed radical states, such as Iran, the next step in proliferation is always a serious concern. While policymakers certainly cannot rule out the possibility of nuclear weapons falling into the hands of non-state actors, they must recognize that this category of proliferation could be the most difficult to isolate and manage. The risks of nuclear ownership by non-state actors provides a compelling reason for the United States to avert the spread of nuclear weapons to states that present a potential source of instability.

One factor, however, that mitigates somewhat the fears of nuclear weapons falling into the control of terrorist organizations is that there are no cases in which states exercised total control over terrorist groups, such as the relationship between Iran and the terrorist organization Hezbollah, or were willing to hand over dangerous technologies to them. The danger for the state is that such an organization would gain considerable leverage over the state. The other factor, however, that cannot be dismissed is a state

that uses nuclear weapons in a terrorist fashion to disguise the source of the attack. Thus, while the difficulties of preventing nuclear ownership by, say, Iran, pale in comparison with preventing nuclear weapons from falling into the hands of, say, a drug cartel, for the present this is not an imminent danger that needs to dominate proliferation policy.

Notes

1. See Douglas Jehl, "Ukrainian Agrees to Dismantle A-Arms," *New York Times*, January 13, 1994, p. A5.

2. See Jane Perlez, "Ukraine Hesitates on Nuclear Deal," *New York Times*, January 13, 1994, p. A1, A6.

3. "Deputies Oppose Nuclear Weapons Agreement," *FBIS-SOV-94-011*, January 18, 1994, p. 77.

4. Ibid.

5. See Pavel Polityuk, "Ukrainians Upset at Missile Deal," *Washington Times*, January 18, 1994, p. 15.

6. See R.W. Apple, Jr., "Ukraine Gives In On Surrendering Its Nuclear Arms," *New York Times*, January 11, 1994, p. A1, A5.

7. See Claudia Rossett, "Crimea Favors Pro-Russian Leader Backing Secession From Ukraine," *Wall Street Journal*, January 31, 1994, p. A9.

8. See Mark M. Nelson and Natalia A. Feduschak, "Kravchuk Is Confident That Ukraine Will Survive Crimean Secession Threat," *Wall Street Journal*, February 3, 1994, p. A6.

9. See "Ukraine Joining Plan for NATO Partnership," *New York Times*, February 7, 1994, p. A7.

10. "Ukraine President Asserts He Will Not Run For a Second Term," *New York Times*, February 23, 1994, p. A6.

11. For detailed background on the evolution of Ukraine's thinking about foreign policy within which the debate about nuclear weapons has occurred, see Natalie Melnyczuk, "Ukraine Develops an Independent Foreign Policy: The First Year," *Radio Free Europe / Radio Liberty Reports*, October 29, 1993.

12. See "Kuchma: Kiev Has No Plans to Control Nuclear Weapons," *FBIS-SOV-93-153-A*, August 11, 1993.

13. See "Kravchuk on Cooperation with Tunisia, START," *FBIS-SOV-93-235*, December 9, 1993, p. 58.

14. See "Plyushch Affirms Ukraine to Become Nuclear-Free," *FBIS-SOV-93-226*, November 26, 1993, p. 52.

15. See Bruce G. Blair, "Ukraine's Nuclear Backlash," *Brookings Review*, Summer 1993, p. 46.

16. "Ukraine President Now Plans to Keep Some Nuclear Arms," *New York Times*, October 20, 1993, p. A4.

17. See *Wall Street Journal*, October 20, 1993, p. A1.

18. When the Ukrainian Parliament ratified START-1 on November 18, 1993, the resolution also said that "Ukraine would remain in possession of nuclear weapons," thus affirming that it would not be bound by the Lisbon Protocol. "Kravchuk, Shmarov Comment on START I Ratification," *FBIS-SOV-93-222*, November 19, 1993, p. 47.

19. The Rada ratified START-I by approving only the destruction of their SS-19s, not their SS-24s. Also, President Kravchuk has faced the opposition of a group in the Rada who are opposed to the complete denuclearization of Ukraine, which explains why he is waiting until the Spring 1994 parliamentary elections before resubmitting the START-1 treaty for ratification.

20. See Carla Anne Robbins, "U.S. to Grant Aid If Ukraine Disarms Nuclear Arsenal," *Wall Street Journal*, October 26, 1993, p. A19.

21. All of the tactical nuclear weapons in Ukraine reportedly were repatriated to Russia in a process that was completed by May 1992. For background on the tactical nuclear weapons issue, see Campbell, et. al., *Soviet Nuclear Fission*.

22. See Steven Erlanger, "Ukraine's Hedging on A-Arms Angers Russia," *New York Times*, November 22, 1993, p. A3.

23. This section draws upon Leonard Spector and Virginia Foran, *Trip Report* (unpublished), May 1993, for discussions with senior Russian Defense Ministry, Security Council, and Foreign Ministry officials, and a U.S. specialist at the Moscow Embassy on the status of Ukraine's nuclear forces.

24. Bruce Blair testified that the troops guarding the nuclear weapons sites in Ukraine are "administratively subordinate" to Russia. See "But Who's Minding the Weapons?," *Radio Free Europe/Radio Liberty*, July 16, 1993. The head of the Russian Defense Ministry's Chief Directorate for Nuclear Munitions, Colonel General Yevgeniy Maslin, reportedly said that, "Russia has de facto lost control over the nuclear weapons deployed on the territory of Ukraine." The same report indicated that, "the crews flying the strategic nuclear bombers and subunits serving the nuclear munitions have been incorporated within the Ukrainian Armed Forces for the past 18 months." But "Moscow still retains, for

the time being, the potential of operational control of the strategic missile troops." See "Control of Nuclear Weapons in Ukraine Uncertain," *FBIS-SOV-93-178*, September 16, 1993.

25. To compensate for uncertainty about the loyalty of Russian launch control officers, there is evidence that Ukrainian officers were assigned to supervise the actions of the Russian officers. Author interviews in Cambridge, Massachusetts, June 1992.

26. There are reports that gravity bombs are protected with environmental sensors, which prevent detonation until a precise sequence of pressure and acceleration changes correspond with those delineated in the electronic flight plans in the bombers carrying the bombs. Moreover, the flight plans reportedly remain in Russian hands. Author interviews in Cambridge, Massachusetts, June 1992.

27. While Kravchuk has a political veto over nuclear use, the danger is that he does not have the operational ability to stop a launch of missiles from Ukraine's territory, which is particularly dangerous given tensions between Moscow and Kiev.

28. There is a protracted discourse on Ukraine's ability to establish control over nuclear weapons. In late 1993, there were estimates that Ukraine will break the nuclear-release codes between December 1993 and March 1994 because fundamentally "there is nothing to prevent them [from] achieving their goal." See Martin Sieff, "Kiev Works to Crack Nuke Codes," *Washington Times*, November 30, 1993, pp. 1, 3. Other Russian officials support these estimates, and also claim that Ukraine is trying to retarget the nuclear weapons. See "Stepashin Claims Ukraine Trying to Retarget Nuclear Weapons," *Radio Free Europe/Radio Liberty*, May 19, 1993. In August 1993, however, the BBC reported that "Ukraine is capable of creating its own coded commands for launching certain types of nuclear missiles located on its territory." See "BBC Cites Kuchma on Control of Nuclear Weapons," *FBIS-SOV-93-146*, August 5, 1993. This report reflected the comment by Colonel General Bizhan that "Ukraine had the ability to block the transmission of launch codes to the ICBMs." See "Ukraine Criticizes Russian Control of Nuclear Weapons," *Radio Free Europe/Radio Liberty*, August 11, 1993. Russian officials report that Ukraine is attempting "to reprogram the flight parameters programmed into the guidance systems of the more modern SS-24 missiles which were made at Ukrainian enterprises." See "U.S. Seen 'Softening' Stance on Nuclear Missiles," *FBIS-SOV-93-147*, August 3, 1993.

29. "And as far as elaborating or gaining possession of codes is concerned, this contradicts Ukraine's state policy regarding nuclear weapons. Such work is not being conducted." See "Defense Ministry Clarifies Statement on Control of Missiles," *FBIS-SOV-93-159*, August 19, 1993.

30. While Russia can withhold these materials and technologies for the purpose of degrading the yield of the nuclear warheads, these warheads still remain quite deadly.

31. There is also the technical challenge of modifying the flight trajectory of intercontinental ballistic missiles to shorten flight paths against Russian targets. Intermediate-range ballistic missiles would generally be more useful. Holding on to the theater nuclear arms would have made sense for Ukraine. For a technical discussion of the technical problems of converting the present nuclear arsenal into one usable by the Ukrainians, see William H. Kincade, "Nuclear Weapons in Ukraine: Hollow Threat, Wasting Asset," *Arms Control Today*, July/August 1993, pp. 14-15.

32. See "Russia Warns Ukraine on Decay of Warheads," *New York Times*, November 6, 1993, p. 5.

33. Yuriy I. Kostenko, who is chairman of the Ukrainian Parliamentary Working Group on Nuclear Disarmament, argued that Ukraine is the "legal heir" to the Soviet nuclear weapons on Ukrainian soil. See Yuriy I. Kostenko, "Letter to the Editor, Kiev & the Bomb: Ukrainians Reply," *Foreign Affairs*, September/October 1993, pp. 183-84.

34. "Ukrainian-Russian Talks," *Radio Free Europe/Radio Liberty*, June 4, 1993. The talks between Russia and Ukraine reflect a constant state of chaos, as positions and agreements are in a constant state of flux. See "Russian Minister Again Claims Nuclear Agreement Near," "But Ukraine Claims Minsk Agreement Invalid," and "Reinterprets START-1 and Lisbon Protocols," *Radio Free Europe/Radio Liberty*, August 20, 1993.

35. See "Grachev Accuses Ukraine of Acquiring Nuclear Status," *Radio Free Europe/Radio Liberty*, July 23, 1993. The Russian Government also criticized Ukraine's policy on nuclear weapons. See "Government Statement Slams Ukrainian Nuclear Policy," *FBIS-SOV-93-146*, August 5, 1993; "Commentary Views Ukraine's Nuclear Status," *FBIS-SOV-93-151*, August 9, 1993; "Ukraine's Attitude Termed 'Destabilizing'," *FBIS-SOV-93-151*, August 9, 1993; "Ukrainian Nuclear Threat Viewed," *FBIS-SOV-93-151*, August 9, 1993.

36. President Leonid Kravchuk demanded "material compensation," on the order of $3 billion, before Ukraine would relinquish its nuclear weapons. See "Ukraine Calls Arms 'Material Weath'," *Washington Post*, December 1, 1993, p. 21. As Dimitro Pavlychko, head of the Ukrainian parliamentary commission for foreign affairs said, "If no assistance comes, the weapons will not be destroyed." See "Official: No Arms Destroyed Without Financial Aid," *FBIS-SOV-93-222*, November 19, 1993, p. 48.

37. There are reports that President Boris Yeltsin promised Ukrainian President Leonid Kuchma during a meeting on August 11, 1993, that Russia would pay for nuclear weapons transferred to Russia. See "Ukrainian Nuclear Weapons Update," *Radio Free Europe/Radio Liberty*, August 13, 1993.

38. See Serge Schmemann, "Russian Election Result: Shattering of New Image," *New York Times*, December 15, 1993, p. A8. The election results confirmed the worst fears of Ukraine and strengthened the resolve to possess nuclear weapons. As Dimitro Pavlychko said, "We always warned about the danger of Russian imperialism. It must be clear to the West now why Ukraine wants to defend itself."

39. See "Commentary on Russian Territorial Ambitions," *FBIS-SOV-93-151*, August 9, 1993.

40. Ukraine's ambassador to the United States, Oleh Byelorus, said that nuclear weapons serve as "a powerful means of deterrence" against Russian attempts to raise territorial claims against Ukraine. See Steven Erlanger, "Ukraine's Hedging On A-Arms Angers Russia," *New York Times*, November 22, 1993, p. A3. Ukraine has made constant demands for security guarantees in exchange for dismantling its nuclear weapons. See "Ukraine Awaits Security Guarantees," *Radio Free Europe / Radio Liberty*, May 26, 1993; "Zlenko Outlines Ukrainian Security Policy," *Radio Free Europe / Radio Liberty*, July 13, 1993.

41. See Yuriy I. Kostenko, "Kiev & and Bomb: Ukrainians Reply," p. 183.

42. Serhiy Pirozhkov, "Letter to the Editor: Kiev & the Bomb," *Foreign Affairs*, September/October 1993, pp. 185-86, wrote that Russia's policies toward Sevastopol demonstrated "the imperialist aims of certain political forces in Russia."

43. From a Russian viewpoint, the future of Ukrainian democratic reform is probably at least as problematic as that of Russian reform. The difference is that Ukraine poses only a negligible threat to Russia, unless it experiences political and economic disintegration.

44. Author interviews in Kiev, Ukraine, September 1993.

45. See "Hungarian Official on Treaty With Ukraine," *Radio Free Europe / Radio Liberty*, May 7, 1993. The treaty on friendship and cooperation was ratified on May 11, 1993. See "Hungarian-Ukrainian Treaty Ratified," *Radio Free Europe / Radio Liberty*, May 12, 1993.

46. "Ukrainian-Turkish Defense Accord," *Radio Free Europe / Radio Liberty*, July 16, 1993.

47. "Kravchuk Proposes Security Cooperation with Slovakia," *Radio Free Europe / Radio Liberty*, May 6, 1993.

48. See "Ukraine Proposes New Collective Security System," *Radio Free Europe / Radio Liberty*, April 29, 1993.

49. See "Kravchuk Comments on Ties With Iraq, Nuclear Arsenal," *FBIS-SOV-93-241*, December 17, 1993, p. 66.

50. See Jeffrey Lilley, "Odd Couple: Nuclear Shadow Over North Korea-Ukraine Talks," *Far Eastern Economic Review*, July 22, 1993, p. 19. Officials

from Ukraine said the talks were "an expression of an independent foreign policy," and denied that military subjects were addressed.

51. See "Poll Indicates Support for Non-Nuclear Status," *FBIS-SOV-93-151*, August 9, 1993; "Study Views Attitudes Toward Nuclear Weapons, Alliances," *FBIS-SOV-93-152*, August 10, 1993.

52. See "National Conservative Party Backs Nuclear Status," *FBIS-SOV-93-234*, December 8, 1993, pp. 54-55, for a statement that the party supports "a national program of nuclear research, production of nuclear warheads, and antimissile defense space systems."

53. See Bohdan Nahaylo, "The Shaping of Ukrainian Attitudes Toward Nuclear Arms," *RFE/RL Research Report*, February 19, 1993, pp. 32 and 37-38, for background on public views about nuclear weapons.

54. This is the notion of "nuclear drag," wherein the possession of nuclear weapons "drags" other states into security threats, thereby creating a de facto security guarantee of an admittedly secondary nature. See Richard Harknett, "Beyond Containment," (unpublished manuscript), October 1993.

55. Author interviews in Cambridge, Massachusetts, June 1992.

56. See Charles Dick, "The Military Doctrine of the Russian Federation," *Jane's Intelligence Review, Special Report*, January 1994.

57. See "Russia Cuts Oil Supplies to Ukraine," *Radio Free Europe/Radio Liberty*, June 4, 1993.

58. "Aspin, Grachev Discuss Ukrainian Nuclear Weapons," *Radio Free Europe/Radio Liberty*, June 7, 1993.

59. See "Ukraine Over the Brink," *The Economist*, September 4, 1993, p. 45.

60. Ukraine's Prime Minister Yefim L. Zviagilsky call for an "economic state of emergency" in late November 1993 reflects the effect of shortages during a harsh winter. See "Fuel-Short Ukraine Is Caught in Wintry Vise," *New York Times*, November 23, 1993, p. A9.

61. See "Ukraine's Trade Ties with Turkmenistan, Iran," *Radio Free Europe/Radio Liberty*, May 13, 1993.

62. See Robert Darst, "Environmental Restoration and Research," in Graham Allison, et. al., *Cooperative Denuclearization: From Pledges to Deeds*, CSIA Studies in International Security, No. 2 (Center for Science and International Affairs, Harvard University, 1993), pp. 226-41, for a review of environmental problems in the former Soviet Union that are related to the nuclear weapons complex.

63. Ukraine experienced diplomatic arm-twisting by President Bill Clinton, Secretary of State Warren Christopher, and Secretary of Defense Les Aspin, but ultimately the nuclear issue remains unsettled despite threats of withholding

economic aid. See Ann Devroy, "Clinton Presses Ukraine on Disarming," *Washington Post*, November 30, 1993, p. 4; Paul Bedard, "Clinton Warns Ukraine on START Pact," *Washington Times*, November 30, 1993, p. 1.

64. See Elaine Sciolino, "Ukraine Spells Out Tough Terms on Missiles," *New York Times*, October 26, 1993, p. A4, for the statement by Foreign Minister Anatoly Zlenko that there are "no promises" about Ukraine's approval of the Nuclear Nonproliferation Treaty.

65. See "Russia To Propose Nuclear Weapons Agreement," *Radio Free Europe/Radio Liberty*, July 16, 1993.

66. See "Statement Circulated at UN on Ukraine's Nuclear Policy," *FBIS-SOV-93-156*, August 16, 1993.

67. "Russia states that it won't use nuclear weapons against nations that have signed the 1968 Nuclear Nonproliferation Treaty." See Elisabeth Rubinfien, "Russian Military Asserts Itself In New Doctrine," *Wall Street Journal*, November 4, 1993, p. A10.

68. "Kravchuk Aide Wary of START I Implementation," *FBIS-SOV-93-220*, November 17, 1993, p. 70.

69. A Ukrainian Foreign Ministry official accused Russian of using nuclear weapons as a ploy for the pursuit of Russian interests. See "Accuses Russia of Playing 'Nuclear Card'," *FBIS-SOV-93-153*, August 11, 1993

70. Ukraine's Deputy Foreign Minister Borys Tarasyuk accused Russia of trying to isolate Ukraine over the nuclear issue. See "Ukraine Criticizes Kozyrev," *Reuters*, December 7, 1993.

71. See "Kohl in Kiev," *Radio Free Europe/Radio Liberty*, June 11, 1993.

72. See "Ruehe Urges Kiev To Join NPT," *FBIS-SOV-93-158*, August 18, 1993.

73. See "German Aid to Ukraine for Nuclear Dismantling," *Radio Free Europe/Radio Liberty*, August 18, 1993.

74. See John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs*, Summer 1993, pp. 50-66, for arguments that the possession of a nuclear deterrent is an important step toward the stabilization of politics between Russia and Ukraine.

75. See Steven E. Miller, "The Case Against a Ukrainian Nuclear Deterrent," *Foreign Affairs*, Summer 1993, pp. 67-80, for a discussion of the uncertainties that nuclear weapons create for Ukraine. The scenarios in this essay, and the adjoining essay by John Mearsheimer about the nature of the crises that nuclear weapons could provoke, were termed "highly improbable" by Yuriy I. Kostenko, who is Chairman of the Ukrainian Parliamentary Working Group on Nuclear Disarmament, in "Letter to the Editor," p. 183.

76. See Douglas Jehl, "Ukrainian Agrees to Dismantle A-Arms," *New York Times*, January 13, 1994, p. A5, for President Clinton's affirmation that Ukraine is eligible for membership in the Partnership for Peace.

77. See Bundy, et., al., *Reducing Nuclear Danger*.

78. See Celestine Bohlen, "Nationalists Move Far Out In Front in Russian Voting," *New York Times*, December 14, 1993, p. A1.

79. See Serge Schmemann, "Yeltsin's Reformers Show Weakness in Russian Vote; Constitution is Approved," *New York Times*, December 13, 1993, pp. A1, A6

80. President Nursultan A. Nazarbayev of Kazakhstan "wants to make sure that if he gives up his nuclear weapons, the West in return will help guarantee the security of his million-square-mile country, which borders Russia, China, the Caspian Sea and three of the other Central Asian republics — Turkmenistan, Uzbekistan and Kyrgyzstan." See Elaine Sciolino, "Kazakh Uses America To Enhance His Stature," *New York Times*, October 25, 1993, p. A2.

81. See "Ukraine, Moldova, Belarus Consult," *Radio Free Europe/Radio Liberty*, August 20, 1993.

82. "Belarus Parliament Ousts Its Reformist Chairman," *New York Times*, January 27, 1994, p. A4.

83. Statement by the press service of Ukraine's Congress of National Democratic Forces. See "U.S., Russia Response to START Ratification Criticized," *FBIS-SOV-93-224*, November 23, 1993.

84. See "Possible Consequences of NATO Membership Reviewed," *FBIS-SOV-93-171*, September 7, 1993, for Ukrainian views on membership in NATO.

85. See Craig R. Whitney, "Russian Vote Stirs Uncertainty for NATO Talks," *New York Times*, December 15, 1993, p. A8.

86. See "Nuclear Dreams: Ukraine," *The Economist*, August 14, 1993, p. 46, for the argument that "Ukraine has the ability of making nuclear weapons quickly because the former Soviet Union had weapons factories that were located in the Ukraine as well as operational missile silos. However, Russia still holds the black box controls needed to fire the missiles."

87. Author interviews in Kiev, Ukraine, September, 1993.

88. Ibid.

89. See Philip Zelikow, "Beyond Boris Yeltsin," *Foreign Affairs*, January/February 1994, pp. 44-55, for the argument that the Clinton Administration has allowed Russia to exercise too much influence on U.S. foreign policy.

90. See Kathleen Milalisko, "Defense and Security Planning in Ukraine," *Radio Free Europe/Radio Liberty Reports*, November 21, 1991, for background material on the evolution of security thinking in Ukraine.

91. Ukraine's leadership failure to articulate, either internally or externally, comprehensive guidance on the role of nuclear weapons in policy, increases the unpredictability of Ukrainian behavior in a crisis. Author interviews in Kiev, Ukraine, September, 1993. For background on the evolution of Ukraine's strategic thinking, see Douglas Jehl, "Ukraine: A Nuclear Power, but Untested Loyalties," *New York Times*, December 2, 1993, pp. A1-A6.

92. See Gerard C. Smith and Helena Cobban, "A Blind Eye to Nuclear Proliferation," *Foreign Affairs*, Summer 1989, p. 57.

93. See David Albright and Mark Hibbs, "Pakistan's Bomb: Out of the Closet," *Bulletin of the Atomic Scientists*, July-August 1992, p. 38, for reports that Pakistan's nuclear weapons program began in 1976 with help from China.

94. Smith and Cobban, "A Blind Eye to Nuclear Proliferation."

95. See David Albright and Mark Hibbs, "Pakistan's Bomb: Out of the Closet."

96. See Bob Woodward, "Pakistan Reported Near Atom Weapons Production," *Washington Post*, November 4, 1986.

97. Smith and Cobban, "A Blind Eye to Nuclear Proliferation."

98. While the date when Pakistan acquired nuclear weapons is not certain, a reasonable date is the end of the 1980s, which corresponds with the announcement in 1990 by the Bush Administration that the United States could not certify that Pakistan "does not possess" a nuclear explosive device. See R. Jeffrey Smith, "U.S. Stiffens Policy on Nuclear Arms," *Washington Post*, November 20, 1990.

99. See "Nuclear-Weapon Capacity Confirmed," *Facts on File*, August 19, 1993, p. 619, for the statement by retired Pakistani General Aslam Beg.

100. See Edward A. Gargan, "Bhutto Standing by Nuclear Program," *New York Times*, October 21, 1993, p. A12.

101. See "Pakistan Holds Firm to Nuclear Arms Plan," *New York Times*, November 21, 1993, p. 6.

102. See Tom Zamora and David Albright, "India, Pakistan's Nuclear Weapons: All the Pieces in Place," *Bulletin of the Atomic Scientists*, June 1989, p. 21.

103. Albright and Hibbs, "Pakistan's Bomb," casts doubt with the argument that the trial of Ortmayer and others in Germany supports only the supply of "plans and know-how" and some equipment in 1987.

104. Ibid.

105. See "Military Sales to Pakistan," *Hearings Before the U.S. Senate Committee on Foreign Relations*, July 30, 1992.

106. See *Associated Press*, December 4, 1992.

107. See R. Jeffrey Smith, "Pakistan Official Affirms Capacity for Nuclear Device," *Washington Post*, February 7, 1992, p. A18.

108. Nevertheless, Pakistan received early support from Libya, Saudi Arabia, and other Islamic states. See Steve Weissman and Herbert Krosner, *The Islamic Bomb* (New York: Times Books, 1981), pp. 161-226. Israel also was worried enough about the Pakistan weapon becoming an "Islamic bomb" that they considered bombing the Kahuta facility. See Neil Joeck, "Pakistani Security and Nuclear Proliferation in South Asia," in Joeck, ed., *Strategic Consequences of Nuclear Proliferation in Asia (London: Frank Cass, 1986), p. 89*.

109. See Ayaz Ahmed Khan, "Need for Nuclear Energy," *Economic Review*, April 1990, p. 27.

110. See N. Vasuki Rao, "Pakistan Apparently Accelerating Development of Nuclear Energy," *Journal of Commerce and Commercial*, December 26, 1990, p. 4B.

111. See "Pakistan Vows Not to Forego Nuclear Programs," *Reuters*, May 25, 1992.

112. The converse point is true, which is that Pakistan might have attacked India's nuclear facilities to eliminate the Indian nuclear program.

113. "Pakistan and India on Nuclear Knife-Edge," *Intelligence Digest*, May 4, 1990.

114. See "Pakistan Says Defence Budget Cannot Be Cut," *Reuters*, May 15, 1992.

115. "Editorial: Eating Grass," *Bulletin of the Atomic Scientists*, June 1993, p. 2.

116. See *Vital Speeches*, July 1, 1989, p. 553, when as late as June 7, 1989 Prime Minister Benazir Bhutto told a Joint Meeting of the U.S. Congress that "Speaking for Pakistan, I can declare that we do not possess nor do we intend to make a nuclear device."

117. See *Associated Press*, February 24, 1993.

118. See *Associated Press*, July 6, 1992, for reports Gary Milhollin of the Wisconsin Project on Nuclear Arms Control said that, "If you look around the world, the greatest risk of nuclear war today is in South Asia, because India and Pakistan could lose control of the border situation and end up fighting."

119. See Steve Weissman and Herbert Krosney, *The Islamic Bomb*, pp. 53-65, 161-223.

120. See Neil Joeck, "Pakistani Security and Nuclear Proliferation in South Asia," p. 89.

121. See *Associated Press*, April 26, 1993.

122. See Larry A. Niksch, "North Korea's Nuclear Weapons Program," *Congressional Research Service Issue Brief*, June 30, 1992, for a discussion of the assistance North Korea has received from the Soviet Union, China, Iran, and Pakistan in developing its nuclear weapons and missile programs.

123. See "Fact Sheet: North Korea's Nuclear Facilities," *Arms Control Association*, October 1992.

124. Ibid.

125. Niksch, "North Korea's Nuclear Weapons Program," p. 2.

126. *Arms Control Association*, "Fact Sheet."

127. See "N. Korea Brings Out Big Guns to Guard Nuke Facility," *Washington Times*, January 11, 1994, p. 11.

128. See Steven Engelberg with Michael R. Gordon, "Intelligence Study Says North Korea Has Nuclear Bomb," *New York Times*, December 26, 1993, p. 1.

129. See Joe Bermudez, "Ballistic Ambitions Ascendent," *Jane's Defence Weekly*, April 10, 1993, pp. 20-21, for an assessment of North Korea's missile program.

130. See Don Oberdorfer, "U.S. Steps Up Pressure on N. Korea," *Washington Post*, March 18, 1993, p. A33.

131. After an official visit to North Korea on May 11-16, 1992, IAEA Director General Hans Blix stated that he was assured that IAEA officials were invited to visit any site and installation even if it was not found on the initial list submitted to the IAEA. "Press Release," *International Atomic Energy Agency*, May 15, 1992.

132. See R. Jeffrey Smith, "N. Korea and the Bomb: High-Tech Hide-and-Seek: U.S. Intelligence Key in Detecting Deception," *Washington Post*, April 27, 1993, for a review of the effectiveness of the IAEA. The change in North Korean policy may indicate that North Korea no longer believes that the IAEA could be deceived as easily as it was in Iraq.

133. While a State Department official directly involved in negotiations with North Korea stated in an unpublished paper presented in Tokyo in August 1993 that D.P.R.K. cooperation with the IAEA broke down concurrently with South-North negotiations in October 1992, the evidence supports a steady erosion of cooperation as the IAEA inspections became more effective and intrusive.

134. There were twelve JNCC meetings during 1992. The North consistently tried to limit inspections to Yongbyon in the North and U.S. bases in the South and always opposed challenge inspections. The last four meetings in 1992 were largely acrimonious exchanges over Team Spirit, which North Korea blamed the failure of negotiations on Team Spirit and the unwillingness of the South to

allow inspections of U.S. bases. South Korea told the North at the JNCC meeting on June 26, 1992 that U.S. bases in the South could be inspected if the North agreed to reciprocal inspections of North Korean military bases by the South. This was consistent with the comments of Ambassador Gregg reported at that time by the Yonhap news agency from Seoul.

135. See Jeremy J. Stone, *Statement Before the U.S. Senate Subcommittee on East Asia and Pacific Affairs of the Committee on Foreign Relations*, November 25, 1991, for a useful discussion of North Korea's policy to "agree in principle but stall in practice."

136. See Su-wan Lee, "Nuclear Impasse May Threaten Korea Premiers' Talks", *Reuters*, December 10, 1992.

137. There was some indication during November 1992 that North Korea might expect an easing of the U.S. position with the election of President Clinton. See "North Korea Says War Games in South May Halt Talks," *Reuters*, November 12, 1992. President-elect Clinton took a firm position the following day, however, in his telephone conversation with President Roh.

138. See "IAEA Tries To Break Deadlock With North Korea," *Reuters*, February 26, 1993.

139. North Korea used public statements to justify its withdrawal as "a well justified self-defensive measure against the nuclear war maneuvers of the United States and the unjust act of the International Atomic Energy Agency." See Sam Jameson, "North Korea Quits Treaty to Halt Spread of Nuclear Arms," *Los Angeles Times*, March 12, 1993, p. A4; David Sanger, "North Korea, Fighting Inspections, Renounces Nuclear Arms Treaty," *New York Times*, March 12, 1993, p. A1; R. Jeffrey Smith, "U.S. Denounces N. Korea for Quitting Nuclear Pact," *Washington Post*, March 13, 1993, p. A1.

140. See Robert A. Manning and Leonard S. Spector, "North Korea's Nuclear Gambit," *Washington Post*, March 21, 1993, p. C3. For the possibility that the abrupt move was generated by internal conditions as part of a power struggle inside North Korea, see T.R. Reid, "Overtures Made to N. Korea," *Washington Post*, March 17, 1993, p. A25.

141. The most important IAEA and U.N. actions were the IAEA Board of Governors' resolution of April 1, 1993 which found North Korea in non-compliance with its obligations under the IAEA-DPRK safeguards agreement and referred the matter to the U.N. Security Council; and the U. N. Security Council resolution of May 11, 1993 which served as a basis for the United States to initiate bilateral negotiations with North Korea.

142. See Jeffrey R. Smith, "U.S., North Korea Set High-Level Meeting On Nuclear Program," *Washington Post*, May 25, 1993.

143. See Michael R. Gordon, "U.S. Sees Problems in Nuclear Offer," *New York Times*, December 5, 1993, p. 1, for a description of recent efforts to reach an agreement over the deadlocked nuclear issue.

144. See Carol J. Williams, "N. Korea Agrees to Inspection of 7 Nuclear Sites," *Los Angeles Times*, February 16, 1994, p. 1; David E. Danger, "North Koreans Agree to Survey of Atomic Sites," *New York Times*, February 16, 1994, p. A1. Possible answers to North Korea's reversal include fears of economic sanctions, efforts to gain time for the diversion of more plutonium to nuclear weapons, and fears of U.S. military options.

145. The Government of North Korea places heavy emphasis on the ideology of *juche*, in which the ideology of self reliance is emphasized as a central theme of the leadership of the "Great Leader," Kim Il Sung.

146. There are many reasons why North Korea would want U.N. membership. First, the U.N. is the "town meeting of the world." The existence of a North Korean embassy in New York puts North Korea in contact with 184 other states, and thus provides a highly efficient mechanism for allocating intelligence-gathering resources. Second, it gives North Korea a voice in the U.N. debates and access to the world press. Third, it gives North Korea an intelligence base and additional economic contacts in the United States. Fourth, it grants North Korea some prestige and makes it harder for it to be subjected to U.N. sanctions. Finally, it may create some good will where none existed previously.

147. See *Associated Press* and *Reuters*, May 13-15, 1992, for a description of the seventh round of North Korean-Japanese normalization talks. Later contacts had an even less positive tone, with the North Koreans walking out of a subsequent round.

148. See Bermudez, "Ballistic Ambitions Ascendent." pp. 20-21.

149. See *Komsomolskaya Pravda*, November 29, 1990, for reports that the North Korean foreign minister had told Eduard Shevardnadze that "in the event of diplomatic relations being established between Moscow and Seoul, the D.P.R.K. would consider itself not bound by the pledges not to create its own nuclear weapons." See Larry A. Niksch, "North Korea's Nuclear Weapons Program," p. 4.

150. See Ruth Youngblood, "North Korea Nuclear Policy Frightens World", *United Press International*, May 3, 1993.

151. One of the strongest advocates of this position has been Selig Harrison of the Carnegie Endowment, who believes that the North Koreans found the nuclear weapons program too difficult and gave it up, and argues that changes in policy in North Korea reflect the changing fortunes of hawks and doves in the North Korean regime. See *Associated Press*, May 11, 1992.

152. See David E. Sanger, "No More Offers on Inspections, North Korea Says," *New York Times,* December 10, 1993, p. A8.

153. See "N. Korean Deputy Premier Offers Olive Branch," *Reuters*, July 20, 1992, for reports on Kim Dal-hyon's unexpected trip to Seoul.

154. Russian and East European diplomats in Pyongyang reportedly told Japan's Kyodo News Service that North Korea's gross national product shrunk by as much as 30 percent in 1992. Coal output, which provides about 70 percent of North Korea's energy, fell to 20 million tons in 1992 from 31 million tons the previous year, according to the same diplomatic sources. See Ruth Youngblood, "North Korea's Nuclear Policy Frightens World," *United Press International*, May 3, 1993. Visitors often remark that the most startling observation in the North is the absence of pollution. Many smokestacks have no emissions even in the winter as a result of a shortage of fuel to burn.

155. See Dave McCurdy, "Sanctions Won't Work," *New York Times,* November 8, 1993, p. A19, for the argument that economic sanctions or military strikes increase the danger of war in Korea. For the contrary view, that military strikes could be effective, see Zalmay M. Khalilzad, "North Korea and the Bomb; A Deadline on Diplomacy," *New York Times*, November 8, 1993,p. A19.

156. This phrase was coined by Paul Bracken in a series of roundtable discussions in Washington. D.C., which the author attended. For more background on the North Korean nuclear issue, see Paul Bracken, "Nuclear Weapons and State Survival in North Korea," *Survival*, Autumn 1993, pp. 137-53.

157. As Gary Milhollin testified before a Senate Committee, "There is no reason to think that North Korea would shrink from selling nuclear weapon fuel, nuclear weapons design, or even a nuclear weapon itself to countries able to pay the price." See *Hearings Before the U.S. Senate Subcommittee on East Asian and Pacific Affairs of the Committee on Foreign Relations*, November 25, 1991.

158. See John J. Fialka, "Asian Tenderbox: Korea Face-Off Grows Tense as the Economy of North Deteriorates," *Wall Street Journal*, September 3, 1993, for a discussion of the relationship between the economic situation, the leadership transition, and security concerns. See also Loretta Tofani, "A Nation Still Locked in Cold War Hardship," *Philadelphia Inquirer*, December 26, 1993, for insights from recent North Korean defectors.

159. Thomas W. Lippman, "North Korea Could Prove Sanction-Proof," *Washington Post*, December 25, 1993, p. 30.

160. See Andrew Steele, "Roh Finds China Cagey on N. Korean Nuclear Impasse," *Reuters*, October 1, 1992. This was once again emphasized during UN Secretary General Boutros-Ghali's visit to China in late December 1993. See Steven Mufson, "China Says No Sanctions on N. Korea," *Washington Post*, December 27, 1993, p. 1; Sheila Tefft, "UN Chief Asks China to Help Ease Nuclear Impasse in North Korea," *Christian Science Monitor*, December 27,1993, p. 3.

161. See Steve Glain, "South Korea Says U.S. Overreacts To North's Nuclear-Arms Efforts," *Wall Street Journal*, December 14, 1993, p. 12.

162. See Steve Glain, "South Korea Says U.S. Overreacts to North's Nuclear-Arms Efforts," Bill Powell and Jane Whitstone, "A Game of Nuclear Poker," *Newsweek,* November 15, 1993.

163. It is interesting to contrast the views of Richard Perle and Han Sung-joo before the House Committee on Foreign Affairs' Asian and Pacific Affairs Subcommittee on November 21, 1991. Richard Perle testified that the use of force "is probably the only effective measure available to us to halt the proliferation of nuclear weapons with respect to Korea." Dr. Han, testifying in his position then as a college professor, stated that "the first priority has to be given to the prevention of the outbreak of another war, or any exchange of force between North and South Korea. Any use of force at this time has the very high likelihood that it might result in such an eventuality."

164. See Stephen Engelberg and Michael R. Gordon, "Intelligence Study Says North Korea Has Nuclear Bomb", *New York Times*, December 26, 1993, p. A1, for reports about a CIA classified assessment supported by almost all intelligence agencies and only disputed by State Department analysts. The CIA report concluded that North Korea "probably has developed one or two nuclear bombs."

165. As this study goes to press, there is yet another agreement with North Korea in its negotiations with the United States. This agreement reportedly provides in principle for inspection of North Korea's seven declared sites by the IAEA in exchange for a U.S. agreement to cancel Team Spirit. It is interesting to compare this latest agreement with the agreement reached in July 1993 with North Korea which has not been fulfilled. See William Drozdiak, "U.S., North Korea Reach Compromise on Nuclear-Arms Inspection Crisis," *Washington Post,* July 20, 1993, p. 14.

166. David Kay has talked about the "unresolvable uncertainty" and has described the North Korean case as one "where nonproliferation has failed." See Andrew Weinschenk, "North Korea's Actions Bring Protest Storm From Officials," *Defense Week,* November 8, 1993, p. 3.

167. See David E. Sanger, "U.S. Revising North Korea Strategy," *New York Times,* November 22, 1993, p. 5, for a useful discussion of this process.

168. See Yossi Melman, "Iran's Lethal Secret," *Washington Post*, October 18, 1993.

169. Ibid.

170. Ibid.

171. The contract remained in abeyance until several mid-1992, when the "International Trade Arbitration Court in Paris ruled that the French government should return the money to Iran but rejected the Iranian claim that they should resume the project." Meanwhile, French hostages held in Lebanon by

pro-Iranian organizations serve as pawns in the struggle over the contract. See Melman, "Iran's Lethal Secret."

172. Germany said that it will not help complete the Bushehr power plant bombed during the 1980-88 Iran-Iraq War. "The German firm Kraftwerk Union worked on the project before the revolution, which denounced the Shah's policy of building nuclear projects." See "Iran Urges Germany to Complete Unfinished Projects," *Reuters*, July 18, 1992.

173. See Melman, "Iran's Lethal Secret," for American intelligence reports that China provided Iran with a mini-calutron.

174. Observers hypothesize that Iran has created international networks of agents who are responsible for the acquisition of equipment and technology. See Melman, "Iran's Lethal Secret."

175. Ibid.

176. There are reports that Pakistan contributes to Iran's nuclear weapons program, and that Abdul Qadar Khan, considered the father of Pakistan's nuclear bomb, made a secret visit to Iran. Moreover, an Iranian-Pakistani agreement to engage in scientific cooperation provides the basis for training Iranian physicists in the Pakistani Institute for Nuclear Science and Technology near Islamabad. See Melman, "Iran's Lethal Secret."

177. India provides aid to Iran's weapon program. It signed an agreement to engage in nuclear collaboration with Iran, and agreed to build a 10 megawatt research plant at the Moallem Kalayeh center. This agreement was suspended as a result of vociferous U.S. objections. See Melman, "Iran's Lethal Secret."

178. Melman reports that, "U.S. intelligence officials informed their Israeli counterparts in October 1991 that China was assisting Iran in the construction of an installation for the separation and processing of isotopes for enriched uranium. Possession of such equipment is considered a necessary stage on the way to producing a nuclear bomb. For the time being this plant in Moallem Kalayeh is unable to produce the enriched uranium needed to assemble a nuclear bomb, but its construction suggests the extent of technology transfers to Iran." See Melman, "Iran's Lethal Secret."

179. See Richard Z. Chesnoff, "A Little Shopping for Horrors," *Time*, November 23, 1992, p. 52.

180. There are numerous reports about India's support for Iran's nuclear program; an Indian foreign ministry spokesman confirmed "preliminary discussions" with Iran last year about the sale of a reactor. See Melman, "Iran's Lethal Secret." Also see "Iran Wants India To Oppose Arms Build-Up In Gulf," *Reuters*, November 10, 1992, for suggestions that Iran's Foreign Minister Velayati reportedly wanted to buy a 10-megawatt nuclear reactor from India, but that New Delhi rejected Iran's request.

181. In 1992, according to the People's Mujahedeen of Iran, the largest anti-government opposition movement, Russia agreed to sell two 440-megawatt nuclear reactors and technology to Iran, and to provide 170 technicians for the installation and operation. See "Iran-Nuclear," *Associated Press*, September 11, 1992; Nora Boustanay, "Iran Getting Russian Submarine; Vessel Said to Be Enroute From Baltic Despite U.S. Objections," *Washington Post*, October 2, 1992. For reports that two Russian nuclear experts are working at a mountain-side facility in near Isafan in central Iran, see "Iran-Nuclear," *Associated Press*, September 11, 1992.

182. After a visit by Iran's president, Ali Akbar Hashemi Rafsanjani, to China and Pakistan in 1992, China announced the sale of a new, larger nuclear plant to Iran. China currently is constructing a small nuclear reactor near Isfahan and, according to U.S. intelligence, provided a mini-calutron, an essential component a nuclear weapons program. See *Washington Post*, October 18, 1992. Iran sent 20 technicians and engineers to China and another 22 to Pakistan for training, reported a spokesman for the anti-government Mujahedeen. See "Iran-Nuclear," *Associated Press*, September 11, 1992. Iran's President Rafsanjani headed a delegation of senior military officials and nuclear specialists to Beijing; China subsequently agreed to complete a nuclear facility at a military base at Darkhovin northeast of Abadan, one of five major nuclear sites in Iran. See "Iran Said Making Advances in Nuclear, Chemical Weapons," *Reuters*, September 11, 1992. Iran acquired a small nuclear power station from China. See "Blackmail by Iran: China Agrees to Provide Iran With Nuclear Plant," *Reuters*, September 10, 1992. China's Foreign Minister Qian Qichen said the nuclear reactor was for "peaceful purposes only and was being monitored by the International Atomic Energy Agency." See, "China Says Nuclear Reactor for Iran for Peaceful Uses," *Reuters*, September 16, 1992.

183. Western military specialists report "rumors and concerns" that nuclear scientists from the former Soviet Union were hired to make the reactors operational. See Nora Boustanay, "Iran Getting Russian Submarine: Vessel Said to Be En Route From Baltic Despite U.S. Objections," *Washington Post*, October 2, 1992.

184. For reports that Iran's allocation for its nuclear weapons program of at least $800 million in 1992 is reported to be four times larger than its 1991 budget of $200 million, see Ruth Sinai, "Iran-Nuclear," *Associated Press*, September 11, 1992; "Iran Said Making Advances in Nuclear, Chemical Weapons," *Reuters*, September 11, 1992.

185. "Frontline," U.S. Public Broadcasting System.

186. Ibid.

187. Israel's prominence as a source of reports in 1992 reflects deep concerns in Israel and among Israeli parliamentarians about Iran's nuclear intentions.

188. For reports that "Iran is strongly suspected of having a nuclear weapons programme, possibly with help from China," see "Iran Suspected of Having Nuclear Arms Programme, IISS Says," *Reuters*, October 8, 1992.

189. Melman, "Iran's Lethal Secret."

190. Ibid.

191. Ibid.

192. See Rowland Evans and Robert Novak, "Nuclear Warheads For Iran?," *Washington Post*, October 12, 1992. The original allegation, by the People's Mujaheddin of Iran, was that Iran purchased nuclear weapons from Kazakhstan:

> "According to intelligence reports obtained by the Mujaheddin network inside the mullahs' regime and first revealed by the Mujaheddin on October 12, 1992, Tehran has purchased four nuclear warheads from the Central Asian republic of Kazakhstan. The first round of discussions in this in this regard were held when Kazakhstan's Minister of Transportation visited Tehran in April 1992. The mullahs proposed that the warheads, which according to a commitment are to be destroyed, instead be provided to the regime. Kazakhstan officials are then to pretend that these warheads were actually destroyed. Subsequently, a group of the regime's officials, several of them from the Defense Ministry, made a visit to Kazakhstan in August. Among them were Brigadier General Vahid Dastjerdi, Commander of Logistics for the Defense Ministry, and Brigadier General Bake-Mohammad Doust, in charge of the Defense Ministry's industrial purchasing. The group was headed by Defense Minister Akbar Torkan. During this trip, the deal was finalized and contracts were signed. Before the last round of negotiations in August 1992, Akbar Torkan, Rafsanjani's Defense Minister, and some of his colleagues traveled to Kazakhstan on several occasions to negotiate the purchase of the warheads. Tehran has paid in full for the four warheads, but the latest information reveals that the warheads have not been delivered to Iran as of yet. This deal is extremely secret and highly classified within the regime." See, "The Khomeini Regime's Drive to Lessen the Gap to Weapons of Mass Destruction," *People's Mujaheddin Pamphlet*, November, 1992.

193. For reports that the United States rejected allegations that Iran secretly bought nuclear weapons from the former Soviet republic of Kazakhstan, see, "U.S. Sees No Sign Of Kazakhstan Selling Nuclear Arms To Iran," *Reuters*, October 13, 1992. General Uri Saguy, the head of Israel's military intelligence, dismissed press reports that Iran already possessed nuclear weapons, purchased from the former Soviet republic of Kazakhstan. "These reports are highly speculative," he said in an interview with an Israeli daily, "and have no factual basis." See Melman, "Iran's Lethal Secret."

194. See "Iran Wants India to Oppose Arms Build-Up In Gulf," *Reuters*, November 10, 1992, for reports that Iranian Foreign Minister Ali Akbar Velayati told Indian officials that, "Domineering forces, with their extensive and massive military presence, are undermining tranquility, peace and stability in this vital region by sowing division and animosity among regional countries."

195. See "Iran Paper Says West Sets Stage For Attack," *Reuters*, November 15, 1992. Iran charged that "U.S.-led allies are setting the stage for a possible attack on Iran by portraying it as a threat to regional stability." Moreover, "The English-language Tehran Times, quoted by the official news agency IRNA, said Western media were conducting a "relentless drive to muddy the image of Iran"."

196. Iran's ambassador to the United Nations, Kamal Kharrazi, said, "We are against the building of a nuclear weapon." See "US-Iran," *Associated Press*, April 30, 1993.

197. Israel sources report that Iran's nuclear weapons program is "driven by fear of Iraq, Tehran's old adversary." See "Iran Said Embarking on Nuclear, Chemical Weapons Programme," *Reuters*, September 17, 1992; Nora Boustanay, "Iran Getting Russian Submarine; Vessel Said to Be En Route From Baltic Despite U.S. Objections," *Washington Post*, October 2, 1992.

198. The chief of Israel's Air Force, Major General Herzl Budinger, said that action may be necessary to "prevent Iran from developing nuclear weapons." He cited "disruption" of Iran's nuclear weapons program as "international political action, and aggressive action, if needed...to keep nuclear weapons out of the Mideast and prevent a world war." See "Israel-Mideast," *Associated Press*, June 14, 1992.

199. Majlis (Parliament) Speaker Ali Akbar Nateq-Nouri described recent U.S. accusations and condemnations as "psychological warfare with specific political aims." Moreover, "Iran does not fear a psychological war and will march towards sacred goals of the Islamic system with greater unity and solidarity," he said. "Experience has shown that the more pressure exerted by enemies on us, the stronger our people become." See "Iran Vows To Resist West's 'Psychological War," *Reuters*, March 10, 1993.

200. "Two Tehran newspapers on Wednesday put new spins on Iran's repeated rejection of charges of supporting terrorism and seeking nuclear weapons. *Salam*, published by hardliners often critical of President Akbar Hashemi Rafsanjani's policies, said while Iran should brace for heavier pressure from the West, it should not lay itself open to attack by inept statements." See "Iran Vows To Resist West's 'Psychological War," *Reuters*, March 10, 1993.

201. See "Iran Paper Says West Sets Stage For Attack," *Reuters*, November 15, 1992.

202. See "Blackmail by Iran: China Agrees to Provide Iran With Nuclear Plant," *Reuters*, September 10, 1992.

203. See Boustanay, "Iran Getting Russian Submarine."

204. Iran's vice president, Ayatollah Mohajerani, in an interview with the newspaper Abrar, warned that the "superiority" of nuclear arms means that every Islamic state should seek to obtain them. "The nuclear capacities of Israel and the Muslims must be equalized. If Israel is allowed to have a nuclear capacity, than Islamic states, too, should be given the same right." See Melman, "Iran's Lethal Secret."

205. See "Israel Air Chief Warns Against Nuclear Weapons," *Reuters*, June 15, 1992.

206. Mansour continued by saying that, "Any adventurism on its (Israel's) part against Iran would cost it dearly." See "Iran Air Chief Warns Israel Against Any Attack," Reuters, June 18, 1992. Israeli Parliamentarian Ephraim Sneh, from the Labour Party, warned that Israel might act unilaterally to prevent Iran from becoming a nuclear power. "Western nations must know that if they do not do what is demanded in order to prevent Iranian nuclear power Israel could find itself in a situation where it would be forced to act on its own according to its considerations and security." See "MP Warns Israel Could Act Against Nuclear Iran," Reuters, May 2, 1993.

207. "We deeply believe that obliteration of Israel and downfall of the world arrogance headed by the United States are possible." See "Iran Vows To Resist West's 'Psychological War'," *Reuters*, March 10, 1993. Further, the English-language *Tehran Times*, quoted by the official news agency IRNA, wrote that "we are determined not to allow the Zionists a second chance to distort the facts and portray us as the oppressor, and seek our annihilation." See "Iran Paper Says West Sets Stage For Attack," *Reuters*, November 15, 1992.

208. Steve Coll, "West Upping Technology Sales to Iran; Equipment Intended For Civilian Projects Has Military Uses," *Washington Post*, November 10, 1992.

209. See "Iran Paper Says West Sets Stage For Attack," *Reuters*, November 15, 1992.

210. The commander of Iran's Air Force said that, "If we are attacked, we shall retaliate." See Melman, "Iran's Lethal Secret."

211. For a discussion of preemptive options, see Dave McCurdy, "Sanctions Won't Work," *New York Times*, November 8, 1993, p. A15.

212. "U.N. Reports on A-Arms Threat," *Facts on File*, March 5, 1992, p. 157.

213. See Daniel Pipes and Patrick Clauson, "Ambitious Iran, Troubled Neighbors," *Foreign Affairs*, 1992/1993, pp. 124-41, for a littany of Iranian actions that manifested hostility toward the West.

Part IV

Rethinking U.S. Proliferation Policy for the Future

A. A Note on Proliferation Choices

One of the tenets of international relations is that states act in accordance with their perception of their interests and power. A state's actions and policies clearly reflect its interpretation of the dangers inherent in the international system and the responses that are necessary to protect the state. A discussion of political choices is highly appropriate to nuclear proliferation because it provides a framework for understanding the forces that motivate states to possess nuclear weapons in the context of global nuclear proliferation.

First, states make the decision to possess nuclear weapons because they are convinced that these weapons will improve their overall security. The history of the Cold War demonstrates that the possession of nuclear weapons directly enhanced the security of the United States, Soviet Union, China, and western European states, principally because the costs of war were disproportionately higher than the gains. States also understand that nuclear weapons impose fearfully high costs on potential aggressors and equally increase their freedom of maneuver against non-nuclear states.

The implicit theme in U.S. policy has been that most states simply do not have legitimate reasons for possessing nuclear weapons, or at least their reasons are not as legitimate as those

that motivated the United States to develop nuclear weapons. While this is not the same as arguing that states have frivolous reasons for nuclear proliferation, this reasoning effectively rejects all incentives for nuclear ownership as contrary to the interests of the states themselves and to the conditions necessary for international security. This political calculation becomes problematic, and undermines the logic behind nonproliferation efforts, once states posit that there are compelling reasons for states to own nuclear arsenals.

Second, the decision to possess nuclear weapons will be taken only after a state's leadership has engaged in a careful and prudent consideration of relevant political, military, and economic factors. States clearly understand that, just as nuclear weapons can reduce reliance on other states and can enhance their security, they also can heighten tensions in a region and increase the chance of war. This is particularly true during the developmental stage of a nuclear weapons program when nuclear weapons have security tradeoffs, including the risk of preemptive attacks, regional hostility, and war. But states that make the decision to possess nuclear weapons do not operate in a strategic on politico-institutional vacuum. They are acutely aware that the presence of nuclear weapons will elicit reactions from regional and global powers.

Third, each state is the best judge of its security interests and the power necessary to protect those interests. The presumption is that states are uniquely qualified to judge their interests, the potential of other states to interfere with those interests, and the ability to defend their interests. The corollary is that foreigners are not capable of judging a state's interests, and thus are not in a position to declare when states should or should not possess nuclear weapons. Because states carefully weigh their power in comparison with that of other states, they are attuned to imbalances that weaken their ability to serve those interests. Nuclear ownership, therefore, constitutes a prudent exercise in balancing their strategic interests with the power they marshal to defend those material interests.

Fourth, the proliferation of nuclear weapons reflects a consensus among the "proliferators" that international security is

enhanced by the existence of these weapons. States define security on an individual basis, which suggests that the global proliferation of nuclear weapons reflects agreement among many states that nuclear weapons contribute not just to national but international security in a non-bipolar world.

1. Political Realities and Nuclear Imperatives

There are three changes in international politics that mandate a fundamental change in U.S. policy. First, the number of nuclear-weapons states is on the rise. While the number of nuclear states has not increased as rapidly as some projected in the 1970s,[1] in the last several years, Pakistan, India, and Israel joined the nuclear club — not to mention South Africa and the active efforts of North Korea. Each developed nuclear weapons indigenously or with the direct or indirect support of at least one of the major nuclear powers, and often at costs in the realm of $10-20 billion.

Second, there are instances in which it is difficult for the United States to prevent further cases of nuclear proliferation — unless military intervention is envisioned. While the cornerstone of U.S. nonproliferation policy during the last several decades was to prevent the spread of nuclear weapons, this policy is fundamentally at odds with the established reality that states increasingly have the wherewithal to develop nuclear weapons on their own and despute the opposion of the developed states. Iran, Iraq, North Korea, Pakistan, India, Israel, South Africa, and others demonstrated that middle-range powers can develop nuclear weapons if they exercist the determination to do so.

Third, the international mechanisms for controlling nuclear weapons technologies, principally export controls and nuclear regulatory regimes such as the NPT[2] and IAEA,[3] no longer are sufficient to prevent all nuclear proliferation. Iraq was developing nuclear weapons while it was under inspection by the IAEA as a signatory to the NPT. North Korea also pursued its weapons-development program as a signatory to the NPT. Only recently the IAEA dismissed reports about a secret Iranian nuclear program after it conducted inspections of selected nuclear facilities in Iran.[4]

The evidence is that the normal instruments for controlling access to nuclear technologies and materials are grossly inadequate for preventing states from developing nuclear weapons.

2. Rethinking U.S. Policy

The fundamental problem with U.S. proliferation policy, however, is that it is at odds with these principles of state behavior. To be frank, neither the United States nor any other state is in a position to condemn another state's decision to possess nuclear weapons. Yet, U.S. policy has precisely this effect when it declares that non-nuclear states are not entitled to possess nuclear weapons. The philosophical foundation of U.S. policy operates on the assumption that the United States is best suited to judge the merits of a state's decision to "go nuclear." But this study argues that the United States faces the challenge of mutual security in an era in which nuclear-armed states must coexist with one another without the umbrella of Cold War institutions and policies. If U.S. policy creates a situation where stability is preserved among all nuclear powers, then such a world corresponds with its long-term interest in secure and security. The crux of the problem is for the United States to learn to deal with the new nuclear states as the path to building a stable political order.

In the face of evidence that ten to twenty states believe that the possession of nuclear weapons offers greater security than conventional forces alone, the policy of the United States needs to be aligned more precisely with the broad security interests of these states. While U.S. efforts during the Cold War to control proliferation were largely successful, U.S. policy is bound to fail because it runs directly counter to the growing consensus among states which believe, rightly or wrongly, that nuclear weapons enhance their security. North Korea's behavior provides vivid evidence of a stunning reproach of the United States for the continuing failures in its proliferation policy.

There is a tendency for states to follow policies that were established in earlier times for reasons that include the overwhelming weight of bureacratic inertia and political convenience. While

there are occasions that justify adherence to traditional policies, there are other times when the past is not a sufficient guide to action in the future. It is time to re-examine the core beliefs that define the role of nuclear weapons in international security. This study argues that U.S. proliferation policy is a clear candidate for reexamination at a time when the Clinton Administration has declared this to be a time that demands new thinking.

The Clinton Administration defines preventing proliferation as one of six priorities for American foreign policy, and argues that the United States has an obligation to resist proliferation, as the daily struggles since 1991 with Ukraine and North Korea demonstrate. The problem is that U.S. proliferation policy is still committed to essentially the same principles that governed U.S. actions for decades, despite their growing irrelevance in the 1990s. U.S. policy must be tailored to fit the new strategic reality of the late twentieth century, as underscored by the inability of the United States to prevent proliferation short of extraordinary measures, including intervention.

The aim of this study is to articulate a new framework for the United States as it reshapes nuclear proliferation policy in the closing years of the twentieth century. The United States must strike a balance between the aspirations of states that deem the possession of nuclear weapons to be in their national interests, and the U.S. interest in shaping an international order that is consistent with its interest in the preservation of political, economic, and military security.

B. Toward New Thinking on Nuclear Proliferation

1. Rethinking U.S. Interests and Policy

Several decades of policymakers defined, rightly or wrongly, and conducted policy on the basis of the proposition that any proliferation of nuclear weapons was inimical to U.S. interests. The argument was that additional nuclear powers meant a concomitant increase in the probability of nuclear war. Thus, it followed that restraining the number of nuclear powers would

decrease the danger of nuclear war. The United States invested considerable resources in attempts to limit the number of states as nuclear signatories of the Nuclear Nonproliferation Treaty, which included the United States, Soviet Union, France, Britain, and later, China.[5] The United States also availed itself of various international regimes to enforce the ban on the spread of nuclear technologies and materials and the means to deliver such weapons.

This policy was sensible and effective for three reasons. The first was the reasonable expectation that the process of nuclear proliferation could be contained, largely because of the great economic and technological cost associated with the early development of nuclear weapons. Very few states, the proliferation community reasoned, could marshal the resources necessary to build nuclear weapons. The second reason was that the United States and the Soviet Union provided tight security guarantees for many states. Any transgression against states was unlikely given the superpowers' tightly circumscribed areas of interest. States reasoned that an attack against them would bring the wrath of the superpowers upon the transgressor. The third was the escalatory danger posed by nuclear weapons in a tight bipolar world, in particular the fear that nuclear weapons in the hands of regional powers could provoke a "catalytic" nuclear war between the superpowers.[6] Indeed, these escalatory dangers still exist between regional nuclear powers.

In effect, U.S. proliferation policy was sound because it flowed from two sensible propositions about its ability to contain nuclear technologies. U.S. policy, therefore, was consistent with the ability of the United States to prevent the spread of nuclear weapons. It was also a policy that fundamentally supported international stability during the Cold War that existed for nearly fifty years. But this reality no longer exists.

2. U.S. Power to Control Proliferation is Limited

The ability to control nuclear proliferation is limited, as states amass the scientific, technological, and economic wherewithal to

develop nuclear weapons in direct opposition to the best efforts of the international community to prevent it.[7] The experience of Iraq, until the 1991 Persian Gulf War and subsequent United Nations special inspections, demonstrates that a determined and rich state can assemble the technological complex needed to develop nuclear weapons.

Neither the United States nor the international community has the ability to prevent these efforts if a state decides that the possession of nuclear weapons serves its national interests. The examples of Israel, South Africa, India, and Pakistan exemplify the condition in which the rhetoric of nonproliferation policy is not consonant with the existence of indigenous nuclear programs. This is true for three reasons.

First, nuclear weapons technologies have existed for nearly fifty years, which means that the requisite scientific talent can be assembled by states that possess sufficient resources. There are more than enough physicists and engineers who understand nuclear physics to assemble nuclear weapons. Second, states determined to develop nuclear weapons can circumvent IAEA controls established by the Nonproliferation Treaty to control the fissile materials produced by civilian nuclear facilities. In the case of Iraq, it produced fissile material in calutrons, while South Africa produced fissile materials in civilian research reactors which they had not declared to the IAEA. Both cases of nuclear development occurred under the eyes of IAEA inspectors. Third, the collapse of the former Soviet Union raises the inevitable prospect of a flood of fissile materials, scientists, and possibly nuclear weapons to states desirous of possessing nuclear weapons.

The emerging reality is that the United States simply cannot prevent all cases of nuclear proliferation, but this raises the question of why the United States continues to declare that nuclear nonproliferation is a vital national interest when the ability to stop the spread of nuclear weapons is limited. More worrisome still is the prevalence of old thinking about nuclear proliferation in the United States, as exemplified by discussions about nonproliferation.

3. States See Value in Nuclear Weapons

The behavior of states in recent years suggests that many believe that nuclear weapons have immense security value. The rush by Ukraine, North Korea, and Iran to possess nuclear weapons underlines the point that nuclear weapons have value for these states. The immense cost and risk associated with nuclear proliferation is more than most states would accept, unless those states believed that nuclear weapons would make a significant contribution to their security.

The decision to possess nuclear weapons, once shorn of theoretical arguments, is largely driven by the belief that nuclear weapons offer security. The ability to threaten devastating retaliation unmatched by conventional forces and alliances offers an unparalleled measure of security. This is precisely the experience of the United States, Soviet Union, China, and their respective allies, when states believed that nuclear weapons enhanced security because they increased the costs of war. The United States found security in nuclear weapons, and so too do others. Of course, the United States found insecurity when certain states acquired nuclear weapons, and attempted with considerable success to curb the spread of nuclear weapons.

What remains perplexing is the dogma surrounding nuclear weapons. An axiom of U.S. proliferation policy is that nuclear weapons are unacceptable for states which do not currently possess them or, more accurately, for states that are not closely allied with the United States. While ultimately accepting nuclear ownership for the permanent members of the United Nations Security Council, the U.S. has really only been comfortable with proliferation in states with whom we have a special relationship — Britain at the end of World War II and Israel in the 1970s.

The developed states appear to believe that only certain states can be trusted with nuclear weapons, and that all the rest are suspect in this regard. Yet states continue to behave in ways that contradict this belief, particularly when they look the other way in certain cases of proliferation. As long as U.S. thinking reflects the view that nuclear weapons should be possessed only by the

states that already possess them, it severely weakens U.S. leverage in the politics of nuclear proliferation. A discriminatory policy that accepts the "Haves" but rejects all "Have-Nots" will not be effective, supportable, or credible in the evolving international security environment. The ideal solution was to favor the spread of nuclear weapons to U.S. friends and allies only, but this solution is no longer relevant in a world in which the United States cannot control the process of nuclear proliferation.

The United States has an extremely limited ability to influence the interests of states that are contemplating the development of nuclear weapons. For now, the message is a discriminatory one that specifies who may, and may not, possess nuclear weapons. Worse, the United States has the tendency to elevate the importance of nuclear weapons in its diplomatic strategy by the constant fixation on nonproliferation. The central emphasis in U.S.-North Korean relations in 1994 on whether North Korea should possess nuclear weapons elevates the value of nuclear weapons and thereby defeats the Clinton Administration's intention to denuclearize North Korea. When the United States issues condemnations against North Korea, it focuses attention on the importance of nuclear weapons. This has the effect of reinforcing the role of nuclear weapons, when a policy of denuclearization should strive to minimize their role by demonstrating that nuclear weapons are not the essential measure of power.

The proper theme in U.S. policy should be nuclear weapons have obvious security value for states. Because the objective is to de-emphasize the importance of nuclear weapons, U.S. policy ought to curtail severely the rhetoric about nuclear proliferation. If the United States and other states believe nuclear weapons have security value, then other states will follow suit. If the hope is to reduce the role of nuclear weapons, then the United States must shape a policy that lessens the importance attached to nuclear weapons. For now, U.S. rhetoric has little impact on the process by which states judge whether the value and cost of nuclear weapons is consistent with their interests.

A circumspect policy regarding the possession of nuclear weapons will be more credible to states that attach security to the posses-

sion of nuclear weapons. For now, the fixation in U.S. proliferation policy on prevention strengthens the case of the proponents of the argument that nuclear weapons are needed to counteract the power of the United States. As the Indian Army Chief of Staff General K. Sundarji observed, "The lesson of Desert Storm is don't mess with the United States without nuclear weapons." Indeed, the current emphasis in U.S. policy on nonproliferation elevates the role of nuclear weapons at a time when the United States hopes to achieve precisely the opposite effect.

4. Rethinking Security in a Proliferated World

The present formulation of U.S. policy is that the process of nuclear proliferation jeopardizes international security. The corollary is that there must be widespread efforts to avert further proliferation, as indicated by Secretary of State Warren Christopher's statement that nuclear proliferation is one of the six priorities of American foreign policy. There are several factors that strengthen the alternative concept that some cases of nuclear proliferation reinforce international security.

First, the process of nuclear proliferation over the last two decades, as Israel, India, Pakistan, and South Africa (albeit temporarily) joined the nuclear club, did not demonstrably diminish international security. Fortunately, there have not been any nuclear wars among these states. In the case of the sub-continent, there is no empirical evidence that nuclear proliferation destabilized the situation. On the contrary, the de-escalation of the crisis in the spring of 1990 between India and Pakistan probably was the result of mutual fears of nuclear war. The concomitant increase in the risks of confrontation for these states corresponds with the onset of simple nuclear deterrence. Just as the United States and Soviet Union experienced inhibitions on their actions because of the existence of nuclear weapons, the same probably is true for these states. The inhibitions imposed on states by nuclear weapons are not demonstrably different from the pressures that increased the stability of regional politics in the aftermath of World War II.

Second, the prohibitions on nuclear proliferation are a shibboleth of the past. During the Cold War, the addition of nuclear powers complicated the alliances of the superpowers because the escalation of regional conflicts threatened to engulf the world in a nuclear conflagration. But with the relaxation of the superpowers no-longer overlapping spheres of interest, nuclear proliferation can offer the benefits of greater security.

The time is right to re-examine the proposition that every case of nuclear proliferation leads to instability and is inimical to U.S. interests. At its core, this principle reflects the belief that only current nuclear weapons states and, more narrowly, the victorious states of World War II, as permanent members of the U.N. Security Council, are entitled to possess nuclear weapons. The reality is that the first generation of nuclear powers was not willing to renounce the possession of atomic arms. Therefore, the powerful states attempted to keep a monopoly on nuclear weapons and reduce threats to themselves and, perhaps, certain regions. There is nothing wrong with major powers seeking to protect their own interests.

While neither historical evidence nor detailed analysis is cited to support the assertion that more nuclear weapons states are destabilizing, this assumption is deeply ingrained in the underlying philosophy of proliferation. The United States has a unique historical opportunity to consider how to enhance stability among states that possess nuclear weapons. The moment is right to rethink U.S. policy, largely because this new policy would match the realities of nuclear proliferation in the 1990s with the evolving international security environment. This is the proper time to rethink the notion of stability in a multi-nuclear world.

There is no doubt that reorienting the basic philosophy behind U.S. proliferation policy poses significant intellectual and emotional challenges. Those who have devoted time and energy to preventing proliferation will find the notion that nuclear proliferation is largely beyond control a counter-intuitive exercise in heresy. A new policy for proliferation will involve radical changes in the beliefs that govern nuclear proliferation, and alter the fundamental conduct of the proliferation "business."

5. Reshaping Perceptions About Proliferation

There are three separate steps that the United States should take to redefine the old thinking about the nature of stability in a multi-nuclear world.

The first involves the thinking of the governmental, academic, and research communities. Nuclear proliferation specialists need to broaden their thinking about the terms of stability in a world in which ten or twenty nuclear powers, rather than the eight or so that exist in the early 1990s, is the norm. The terms of reference in proliferation have been the use of all available peaceful mechanisms to avert the spread of nuclear weapons, despite growing skepticism about the ability to achieve this objective. This belief has a pernicious effect on the basic design and function of the governments and international regimes that seek to restrain the spread of nuclear weapons. By contrast, there is a need to concentrate on the nature of coexistence in a stable global security system consisting of 10 or even 20 nuclear weapons states. The United States has learned to coexist with the current members of the nuclear club, but has not learned to institutionalize policies for encouraging nuclear-armed states to abort their behavior in ways that reinforce regional or global stability.

Second, the structure and function of various international regimes responsible for controlling proliferation are necessarily obsolete.[8] Before there is an effort to reorganize these institutions, such as the IAEA, there has to be a consensus on the fundamental objective of nuclear proliferation policy and the support these institutions can provide to that policy. The roles of proliferation institutions must be consistent with their capabilities and objectives if their credibility is to be preserved. The United States is uniquely positioned to begin a debate that leads to a reorganization of the institutions whose purpose is to create stability where none may exist. The IAEA has this role, but still remains a vestige of the near-absolute restrictions on nuclear ownership that emerged from the Cold War.

Third, the United States cannot accomplish this fundamental change in beliefs about proliferation without a vigorous and sus-

tained public discussion on the matter. There must be deeper public support before a new policy can be put in place. For nearly half a century, the public debate in the United States and among the developed states reflected a reflexive fixation on the destabilizing effects of proliferation. The developed states must craft a policy that balances the contemporary reality of proliferation, which is that not all states which possess nuclear weapons necessarily will be a force for instability, while taking the necessary steps to build coexistence in a safer and more stable world of multiple nuclear states.

The thrust of U.S. policy must be to build a consensus among the constituents on the desirability and practicality of new approaches to nuclear proliferation. When proliferation occurs despite policies of blanket opposition by major states and international institutions, it undermines the credibility of all efforts and policies to shape a stable world of coexistence among nuclear powers.

6. Nuclear-Free States can be Major Powers

There are several impediments to changing perceptions about the purpose behind proliferation policy. In addition to political and bureaucratic obstacles within governments and societies, a significant impediment involves the perception that major-power status is defined by the possession of nuclear weapons.

To deny that nuclear weapons strengthen the security, power, and status of states raises the question whether nuclear-free states can be major powers in the current international system. It is possible for non-nuclear states to be major powers, even though the current emphasis of nuclear proliferation policy creates the opposite impression. Germany and Japan exemplify the cases of major powers that do not possess nuclear weapons.

The emphasis on preventing nuclear proliferation has the unintended consequence of enhancing the value of nuclear weapons. To engage in protracted policy debates about preventing North Korea or Ukraine from possessing nuclear weapons reinforces the message that nuclear weapons are an important determinant of national power and prestige. If nuclear weapons

were not significant, then by definition the United States and others would not expend so much political capital on nuclear proliferation. The tone of international rhetoric about proliferation leads states to infer that the United States believes nuclear weapons are significant.

The argument in this study is that United States should aspire to create the opposite impression that one's status as a major power is not derived from nuclear ownership. Germany and Japan illustrate the case of states that have enormously powerful economies and exercise considerable influence in Europe and Asia, respectively. Each state clearly possesses the ability to produce nuclear weapons, and yet each chose to forego nuclear weapons for its own reasons.[9] Because neither state is a global military power, and each relies on the U.S. security guarantee and nuclear umbrella, each state can afford to be militarily weak and non-nuclear. Under these terms, their actions implicitly support the view that their status as major powers is secure by their non-nuclear status. While both states are members of the Group of Seven industrial nations (G-7), their status as major powers is diminished somewhat by the absence from the permanent membership of the U.N. Security Council. The presence of nuclear weapons states on the permanent membership of the Security Council symbolizes the role of nuclear weapons in defining major power status in security matters since 1945.

U.S. policy further undercuts the arguments of states, like Germany and Japan, that major powers do not necessarily need to possess nuclear weapons. One way to strengthen this view is to eliminate the passionate talk of averting proliferation from policy, while enhancing the role of non-nuclear major powers such as Germany and Japan. If one lesson of the experiences of Germany and Japan is that neither states possesses nuclear weapons in large measure because the United States extended a security guarantee to them, then perhaps the United States might consider security guarantees for other states. Only then will it be true that one's status as a major power is influenced only peripherally by nuclear ownership.

The United States needs to take the lead in advancing the view that nuclear proliferation poses both risks and benefits. While the risks can be greater than the benefits in some instances, such as the spread of nuclear weapons to rogue states, in other cases, nuclear weapons are a force for stability, as demonstrated in the case of Pakistan and India. A new U.S. policy must rest on the realization that nuclear proliferation is proceeding despite the active resistance of the international community. In an ideal world, some might prefer to see the abolition of nuclear weapons, while others might prefer to see them concentrated in the hands of a few states. Neither condition is ever likely to exist again.

The policy of the United States must rest on the philosophical view that this state has an interest in shaping a stable and peaceful world. We have the singular obligation to manage the inevitable process of proliferation toward the creation of stability. To accomplish this objective, the United States must promulgate new concepts for guiding proliferation policy. The next section outlines several conceptual steps for coping with all nuclear states.

C. Four Principles of U.S. Proliferation Policy

The challenge for the United States is to define a new policy that governs nuclear proliferation, while recognizing that its ability to dissuade states from developing nuclear weapons is limited. This new policy must focus on shaping stable nuclear arsenals and political institutions in the societies that possess these weapons. The conceptual foundation for this new U.S. nuclear proliferation policy rests on four principles.

1. Nuclear ownership by any state is an open issue, contingent upon behavior that conforms to international standards.

During the Cold War, the United States reflexively categorized virtually all instances of nuclear proliferation as inherently destabilizing, and used its resources to avert proliferation. This new policy contrasts with the existing policy on several levels.

First, the United States will view efforts at nuclear ownership with an open mind, judging the merits of each case. This policy rests on the judgment that the United States is not inherently opposed to nuclear proliferation on the part of any state. This new U.S. policy will reflect judgments about the stabilizing or destabilizing consequences of nuclear ownership for the present and the foreseeable future. It is important to note that this policy rejects the view, enshrined in earlier policy, that all cases of nuclear proliferation are inherently destabilizing and contrary to U.S. interests.

Further, this new policy bases U.S. judgments about the effect of nuclear ownership on a state's actions, past and present, and judgments about the likelihood that it will conform to accepted standards of international behavior. This policy is open with respect to the willingness of the United States to support nuclear ownership by states that demonstrate a willingness to abide by the norms of stabilizing behavior. In contrast with the past, the United States does not define all proliferation as inimical to its interests, but will focus only on those instances which pose a "clear and present danger" to the interests of the United States.

The new policy is not meant as a mask for the unstated preference for a non-nuclear world, or a world in which only a few states possess nuclear weapons. Such a reality is no longer attainable. This policy accepts the view that it is reasonable to believe nuclear weapons are an enduring aspect of international politics, and that the challenge of policy is to make the reality of nuclear ownership consistent with peace and security for all states. It also focuses on maintaining international stability, which is not synonymous with a foreign policy that attempts to indefinitely preserve the *status quo*.

2. The United States seeks to reduce the incentives that drive states toward nuclear ownership.

Nuclear ownership does not occur in a political or strategic vacuum, but reflects the judgment that nuclear weapons enhance

a states security. The challenge for the United States is to reduce the incentives that drive states toward nuclear ownership.

The problem with the current U.S. approach is that policy has focused primarily on negative disincentives. While the United States has offered security guarantees to North Korea in exchange for terminating its nuclear weapons program, the implicit element in U.S. policy is the threat of sanctions and intervention. The United States cannot depend exclusively on the old policy that sought to make the cost of nuclear ownership so burdensome that states would refrain from the possession of nuclear weapons. The new policy, by contrast, envisions a range of incentives that diminish the importance of nuclear ownership as a fundamental determinant of great power status. While this change represents a major hurdle, the objective is to diminish the belief that cannot be a great power unless it possesses nuclear weapons because nuclear weapons are seen as the measure of power. The elevation of states, such as Germany and Japan, to the ranks of permanent members of the United Nations Security Council would go a long way to demonstrate that nuclear ownership is not a prerequisite of membership. Their prominence as economic powers strengthens the argument that nuclear ownership is not the *sine qua non* of recognition as great states.

An element of this approach is to reduce the incentives for nuclear ownership through security concerns. Because states see nuclear weapons as the ultimate security guarantee, the United States needs to strengthen the role of unilateral and multilateral security guarantees to lessen the incentive of nuclear ownership. During the Cold War the United States extended security guarantees to a panoply of states as a way to diminish their need for nuclear weapons. Germany and Japan remain non-nuclear states to this day precisely because they derived security from their alliances with the United States. An effective policy of extending security guarantees is one part of a broader foreign policy architecture for involvement by the United States in a range of regional issues. In this sense, U.S. proliferation policy must be more comprehensive than issuing denunciations against states that are moving toward nuclear ownership. It is imperative for the United

States to redress the worries of states that see nuclear ownership as the solution to vexing security concerns.

3. The United States will employ measures to avert nuclear ownership by states that manifest destabilizing behavior.

In the past, the United States focused indiscriminately on slowing or preventing most, if not all, cases of nuclear proliferation. In the future, an essential theme of U.S. proliferation policy must be to concentrate on averting nuclear ownership in cases that have the potential to exhibit destabilizing behavior. The principle for U.S. policy is to avert ownership on the basis of a state's behavior, rather than resisting nuclear ownership on the basis of universal opposition to all proliferation. This means that in the cases of nuclear ownership which enhance regional peace and security, the developed states must nurture those cases. This policy recognizes, however, that the United States reserves the right to judge whether nuclear ownership by any state is potentially destabilizing, and to respond with the appropriate steps. The United States will need to resist some nuclear proliferation efforts if it is to affirm the principle that there are destabilizing cases of nuclear proliferation.

The implementation of this new principle of U.S. proliferation policy encompasses the entire range of traditional nonproliferation policies that were in force during the Cold War. The instruments for averting ownership are national and international regimes for controlling nuclear materials, including export control mechanisms and punitive political, economic, and military sanctions. Many of the existing governmental mechanisms are entirely appropriate for this purpose.

This new principle seeks to be less discriminatory as it selectively weighs the risks of nuclear ownership, in contrast with the *carte blanche* opposition to nuclear ownership that characterized the earlier policy. States are perfectly free to possess nuclear weapons, and are not discouraged from doing so as long as their behavior comports with accepted standards. At the same time, however, it would be the height of folly for the United States or

other states to support the possession of nuclear weapons by states which support international terrorism or whose national policy is animated by the desire to foment international instability. In cases where a state's behavior raises such concerns, the United States, either on a unilateral or multilateral basis, reserves the right to respond for the purpose of averting nuclear ownership.

This argument does not presume that the "rogue" states will accept this formulation, cease their nuclear programs, or stop accusing the developed states of discrimination. The aspiration, however, is to narrow the gap between the rhetoric and practice of U.S. proliferation policy, and thus to imbue U.S. policies with greater coherence and credibility.

4. A more equitable policy on nuclear ownership places the emphasis on security and safety.

The burden on states that decide to possess nuclear weapons is to develop the policies and practices that lead to the safe and secure custody of nuclear forces. With the expertise gained over nearly fifty years, the United States has the ability to assist the new nuclear states develop the appropriate mechanisms and institutions that are prerequisites of nuclear stability. Unless states have secure command and control, established lines of authority between political and military echelons, a tradition of military subordination to political authorities, there are no guarantees that they will have the ability to establish safe and secure nuclear forces.

The United States can provide technical support in an number of areas to help these states ensure that their nuclear forces are under proper command and control. There also are ways in which the United States can share its experiences in the creation of a strategic language that it shared with the Soviet Union. The existence of safe and secure nuclear forces rests on more than technical knowledge or engineering, but on a broad array of approaches to managing nuclear forces. It is virtually certain that most nascent nuclear states will not have the specialized knowl-

edge or skills that are necessary to ensure that nuclear forces are under tight political control.

U.S. policy cannot be paralyzed by the fear that nuclear forces will fall into the hands of destabilizing leaderships. The hope is that safe and secure forces (SSF) will coincide with the emergence of stable leaderships in the states that possess nuclear weapons. Yet, the fact that there will be cases in which nuclear forces are controlled by destabilizing leaderships reinforces the logic of supporting measures that lead to safe and secure forces. The reasoning is that SSF in the hands of destabilizing leaderships still create a more stable situation than forces that do not meet this criterion. SSF always is better than the alternative.

D. Reshaping Proliferation Policy for the Twenty-first Century

There is some merit to the criticism that the United States opposes nuclear proliferation with the usual array of rhetoric and sanctions, but does not appear to have the political will to use force. It is imperative that the United States establish a new policy before the uncontrolled process of nuclear proliferation leads to a complete erosion of American credibility. To realign the rhetoric and substance of proliferation policy, there are several conceptual steps that the United States needs to make to shape a fundamental shift in the political and intellectual climate. More specific recommendations are presented in Part V.

1. Reject Dual Standards of Nuclear Ownership

The intellectual foundation for nonproliferation policy during the Cold War legitimized the division of the world into nuclear "Haves" and "Have-nots," and enshrined this distinction in the Nuclear Nonproliferation Treaty. This dual standard of nuclear ownership was recognized by many states as inherently discriminatory, and contributed to the impression that U.S. nonproliferation policies were unjust.

The proposition that only some states ought to possess nuclear weapons is no longer intellectually sound,[10] as the cases of Israel, North Korea, Pakistan, and Ukraine so vividly demonstrate. The belief that all forms of proliferation are destabilizing is an artifact of a time when nuclear weapons were an historical and operational oddity. The proliferation of nuclear weapons states attests to the growing normality of nuclear weapons, and to the futility of policies that hope to halt all proliferation.

2. Strengthen Stabilizing Cases

There is a need to broaden international thinking to build on the success of stabilizing instances of nuclear proliferation. We offer two contemporary examples that should redefine how states think about the effect of nuclear proliferation.

First, Ukraine's decision to retain nuclear weapons inhibits Russia's policies and actions toward Ukraine and the rest of the successor states. A Ukrainian official reiterated that Ukraine was right in hesitating to give up its nuclear arsenal because the victory of the extreme nationalist candidate Vladimir Zhirinovsky showed that Russia was "far from being a democracy."[11] How Ukraine manages those weapons is less germane than the fact that their existence limits Russian options. This has an inherently stabilizing effect on a region in which territorial aggrandizement by Russia has long-established historical roots.

Second, Pakistan's putative nuclear arsenal directly and absolutely deters Indian aggression, and the same logic applies to the deterrent effect of India's nuclear arsenal on Pakistan. These states are now locked in a permanent "nuclear embrace." Neither state can risk nuclear armageddon, and hence must live with constraints on their behavior similar to those on the United States and the Soviet Union during the Cold War.

Once the United States admits the possibility of stabilizing cases of nuclear proliferation, and that the logic of nuclear ownership is equal for all states, many of the self-inflicted encumbrances on U.S. policy will disappear. Just as the United States argued that the development of nuclear weapons in the 1940s had a

stabilizing effect on international politics, the question is how different will the possession of nuclear weapons be for subsequent generations of nuclear powers. The next logical step is to define the essential conditions for nuclear stability, and the path that states must follow to create stability. This realization will stimulate a long-overdue revolution in the way the government and society in the United States think about nuclear proliferation.

There is an urgent need for the United States to confront the dangers posed by existing nuclear forces which are not controlled or maintained under the same types of safeguards that kept U.S. forces secure for decades. Nuclear ownership demands that states establish mechanisms and procedures for ensuring that tight control is exercised over nuclear forces. Safe and secure nuclear forces are essential elements of global stability in a multi-nuclear world, and vastly more needs to be done in this regard.

3. Focus on Destabilizing Proliferation

It is evident that nuclear proliferation can have profoundly destabilizing consequences. The possession of nuclear weapons by some states will threaten U.S. interests and allies, and thus demand policy responses by the United States. We offer three contemporary examples of destabilizing proliferation.

First, Iran's apparent decision to become a nuclear-weapons power has profound consequences for regional stability in the Middle East. The prospect of a nuclear-armed Iran is a cause for great concern, and will generate reactions from Israel, Iraq, and other states which believe that Iran will use nuclear weapons to intimidate its enemies. These concerns may well escalate into preemptive attacks against Iran in a period of greater tensions.

Second, North Korea's nuclear program is seen as a destabilizing development in the region. The destabilizing element of North Korean nuclear ownership is the risk of war that engulfs the region and demands U.S. intervention. A nuclear-armed North Korea also could elicit nuclear responses by South Korea and possibly Japan, thus locking North Korea into a deterrent relationship with regional powers as well as the United States. What is a destabiliz-

ing development on the Korean Peninsula in 1994 could evolve into the destabilization of Northeast Asia if a nuclear-armed reunified Korea were to emerge in the future.

Third, there is the possible danger of terrorist organizations that are armed with nuclear weapons. One of the major destabilizing aspects of the development of nuclear weapons by both Iran and North Korea is their long history of terrorism and their support of terrorist organizations. While it is unlikely that nuclear weapons will be made available to terrorist organizations in the immediate future. This development would cross a new and fundamentally destabilizing threshold in proliferation. The greater risk may be actions by the security services of these states, rather than transfers of nuclear weapons to sub-state groups. This condition would elevate concerns about the dangers of Iran's and North Korea's nuclear programs from a regional to a global problem.

North Korea is especially dangerous since its economic situation increases the pressure to provide weapons or technology to other terrorist states or organizations in return for hard currency or energy resources. While it is highly unlikely that nuclear weapons will be developed in the workshop of some terrorist, and even more unlikely that terrorist organizations can develop the "suitcase bomb" so often written about, policymakers cannot dismiss the dangers of states that are less inhibited providing weapons and technology to such terrorist organizations.

The challenge for the United States is to focus its efforts on the destabilizing cases. Some cases will raise the specter of military intervention, others may result in the risk of war or unilateral military action, and still others will be resolved through the quiet, yet aggressive, channels of diplomacy. We should remind ourselves that it took a war to halt the development of Iraq's extremely destabilizing nuclear weapons program. In an historical context, the partial destruction of Iraq's nuclear program was more significant than the expulsion of Iraqi forces from Kuwait. It is essential that the United States have the political will to act early in the development of nuclear weapons so that it does not put itself in the position of the current situation with North Korea. The most

dangerous situation is that which exists when U.S. rhetoric exceeds its will to act.

4. Diminish Value of Nuclear Weapons

The United States needs to establish the principle that all states have the inherent right to possess nuclear power and technology. Furthermore, it needs to state clearly that other states should not interfere with decisions to possess nuclear weapons by states that contribute to stability. This new policy will have two beneficial consequences.

The first is to diminish the incentive to possess nuclear weapons. When states realize that nuclear ownership is not a central feature of international politics, and thereby does not automatically generate opportunities for extracting gains from the international community, an advantage of nuclear ownership will fade. Second, if the United States and the international community downplay the role of nuclear weapons, it will lessen their political utility as an instrument for diplomatic leverage.

The problem is that current proliferation policy enshrines nuclear weapons as a critical determinant of diplomatic relations. At this writing in early 1994, Ukraine, North Korea, Pakistan, Iran, and Iraq are daily reminders of the failure of policies to avert nuclear proliferation. It takes no great strategic insight on the part of these states to realize that nuclear weapons assure a prominent place on the U.S. agenda.

There are several steps that the United States can take to diminish the value of nuclear weapons. An important element is to link political and economic support with decisions to remain non-nuclear. This policy was employed in the case of Ukraine when the United States linked economic assistance with pressure on Ukraine to relinquish its nuclear weapons. While this particular case raises a number of serious concerns, it exemplifies a general approach to reducing the incentives to possess nuclear weapons. A corollary of this policy is to use security assurances, whether on a bilateral or multilateral basis, to establish a foundation for

security for states that look to nuclear weapons as a protector of their interests.

A further step that the United States must contemplate is the development of defensive systems to protect the United States, its allies, and U.S. forces in overseas operations against limited nuclear attacks. These systems are critical if the United States is to preserve its ability to protect its interests abroad and those of its allies in a multi-nuclear world. Such defensive systems are clearly feasible and will play an essential role if the United States is to reduce the military effectiveness of nuclear weapons. Effective defensive systems can be a major disincentive to nuclear proliferation. Nuclear weapons have little value if they are vulnerable to preemptive attack by smart conventional munitions or nuclear weapons and, in turn, cannot be effectively delivered on target. A combination of effective defensive systems and an enhanced intelligence capability to defeat other more surreptitious forms of nuclear weapons delivery are essential elements of a comprehensive policy on nuclear proliferation.

5. Summary

The benefit from drawing a distinction between stabilizing and destabilizing cases of nuclear proliferation is to establish a basis for coexistence among nuclear-armed states. The strategy of nuclear coexistence avoids the expenditure of precious political credibility on proliferation cases that do not harm vital U.S. interests. This strategy also helps the United States focus its diplomatic efforts on the cases that deserve the most attention. The United States cannot afford to waste political credibility and governmental effort on proliferation activities that do not affect vital U.S. interests, as exemplified by the current policy toward Ukraine. Throughout the 1990s and beyond, the United States needs to focus nuclear proliferation efforts on the states that represent a threat to coexistence among nuclear-armed states. The discourse on nuclear coexistence must be a careful blend of positive and negative sanctions to alternatively reward and punish states that threaten to disrupt the nuclear peace. A state of nuclear coexistence can endure only when the policy of resisting prolifera-

tion with maximum rhetoric is coupled with the political will to act politically, economically, and militarily to prevent the proliferation of nuclear weapons to states that violate standards of acceptable international behavior.

Notes

1. See Graham, "Winning the Nonproliferation Battle."

2. The argument that the NPT is broken is, itself, contentious. For the views that it is broken, see "It's Broke, So Fix It: The Nuclear Nonproliferation Treaty is in Urgent Need of Repair," *The Economist*, July 27, 1991, p. 13; Ashok Kapur, "Dump the Treaty," *Bulletin of the Atomic Scientists*, July-August 1990, pp. 21-23. For the contrary view, see Lewis A. Dunn, "It Ain't Broke - Don't Fix It," *Bulletin of the Atomic Scientists*, July-August 1990, pp. 19-21.

3. See Ann Marie Cunningham, "Wanted: An Astute Nuclear Detective," *Technology Review*, October 1993, p. 13, for criticisms about the IAEA's performance. The alternative view is that the flaws in the IAEA safeguards system have been repaired, and that the United States should increase its support for the IAEA. See Robert L. Gallucci, "Nuclear Situation in Iraq," *US Department of State Dispatch*, July 5, 1993, p. 483.

4. See "U.N. Reports on A-Arms Threat," *Facts on File*, March 5, 1992, p. 157.

5. China, which is not an original signatory to the NPT, only agreed to adhere to the Nuclear Nonproliferation Treaty in 1992.

6. See Henry A. Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Harper & Row, 1957).

7. While we disagree, for a careful account of the argument that the essential logic of nonproliferation remains unchanged, see Thomas W. Graham, "Winning the Nonproliferation Battle."

8. Ibid.

9. The consensus is that Germany and Japan did not produce nuclear weapons as a result of U.S. pressure. See Graham, "Winning the Nonproliferation Battle," p. 12.

10. Some observers argue that no states are sufficiently mature to possess nuclear weapons, and therefore that the existence of any nuclear-armed states weakens international security. This view, however, does not address the reality that whether one considers states mature or not, they will possess these weapons. Moreover, such arguments, while supporting discriminatory norms, are largely irrelevant and gratuitous.

11. "Parliament Wants State Control of Missiles," *FBIS-SOV-93-239*, December 15, 1993, p. 34.

Part V

Conclusions and Recommendations

A. Reorganizing the U.S. Government for Effective Policy Implementation

The United States has reached the moment when it is necessary to redesign its proliferation policy. The objective of U.S. policy must be to shape a stable international order that is consistent with the growing reality of more than a handful of nuclear powers. Now, more than ever, it is evident that the current U.S. policy cannot completely stem the proliferation tide, as events in Iran, North Korea, Pakistan, and Ukraine, demonstrate. The United States needs a more flexible nuclear proliferation policy that places the emphasis on creating a stable global security environment by permitting proliferation in stable cases. The United States established a precedent for such a policy when it did not aggressively oppose Israeli and Pakistani nuclear weapons programs. In each cases, the United States implicitly acknowledged that broader U.S. interests were at stake, and thus these probably represented stabilizing cases of proliferation.

This policy rests on two fundamental principles. First, the United States must accept the fact that nuclear ownership cannot be prevented, unless it is willing to employ extreme measures to destroy nuclear programs in their infancy. The United States must confront the fact that states will seek to possess nuclear weapons in the emerging international security environment. Only two options are available to manage this condition. The first is to

reduce the incentives to possess nuclear weapons and strengthen the safety and security of existing nuclear forces. Second, U.S. policy cannot be based on blind adherence to the Nuclear Nonproliferation Treaty. Signed in 1968, the NPT represents conditions and strategies that, while relevant during the Cold War, are changing dramatically in the 1990s.

The determinant of success in the emerging order is to design policies that incorporate new ways of thinking about security, rather than mere implementation of old policies. This list of recommendations is not exhaustive, but it is meant to highlight the more prominent options.

There are no magic steps for reorganizing the bureaucracies that manage U.S. proliferation policy. However, there are several general steps that will help the United States achieve the objective of reorienting its fundamental policy that governs nuclear proliferation.

First, fundamental assumptions behind nuclear proliferation policy need to be reviewed by a Presidential commission. President Clinton should establish a commission whose function is to review the assumptions and realities of nuclear proliferation efforts. This commission could organize disparate efforts and ideas about proliferation scattered throughout government, research organizations, and academia into a coherent and insightful statement that acts as a guide for implementing fundamental change in U.S. policy. This commission will serve to integrate the views of the executive and legislative branches of government into assumptions that provide a consistent basis for policy. It is important that the commission not be dominated by the proponents of old nuclear theories and policies, but rather have a broad mandate to redefine the basis for U.S. national security policy in the nuclear proliferation arena.

Second, given the need for fundamental change, the President must take the lead. No public official, except the President, can focus a meaningful debate on the problem of proliferation that could change the direction of U.S. public policy. The prominence of proliferation in President Clinton's foreign policy

objectives suggests a predisposition within the administration to make significant strides toward the creation of an international order within which nuclear ownership contributes to stability. This policy also will diminish the tendency to create the self-inflicted losses of credibility that occur when rhetoric exceeds the power to dissuade states from nuclear ownership.

Third, the United States government needs to focus its proliferation policy efforts in a cabinet-level official. The responsibility for the design and implementation of U.S. proliferation policy is diffused throughout the national security bureaucracies of the government, as the departments of State, Defense, and Commerce, as well as the White House and intelligence agencies all compete for a role.[1] The collapse of the Cold War necessitates changes in the U.S. national security organizations that are responsible for nuclear proliferation policy. The present lack of a focal point for shaping and implementing proliferation policy produces the inevitable result of a morass of conflicting agendas and initiatives that seem to focus on denuclearization.

To achieve clear, high-level direction in nuclear proliferation policy, the United States needs to establish responsibility in a single, cabinet-level official who has a mandate from the President to organize and implement a forward-looking policy for managing nuclear proliferation. This is not a suggestion that the United States needs a new cabinet-level official, but a recommendation that the United States would benefit from the clear assignment of overall coordinating responsibility for nuclear proliferation policy within the government. With presidential support, this individual must begin by reorganizing policy to create a central point for the coordination of the policy efforts of the national security bureaucracies. Whether that official lies within the Department of Defense or the State Department is less important than the existence of central management. The first step is to recognize the importance of nuclear proliferation, which the Clinton Administration already has done. The next step is to institutionalize new thinking into the mechanisms that exist for the daily conduct of policy.

B. Four Cardinal Policy Objectives and Recommendations

OBJECTIVE 1: Decrease the Incentives That Drive States Toward Nuclear Ownership.

The first significant objective in U.S. proliferation policy should be to decrease the incentives that drive states toward the possession of nuclear weapons. There are several approaches that the United States Government must undertake to accomplish this objective.

Recommendation 1: De-emphasize the importance of nuclear weapons.

The most important step toward reducing the incentive to possess nuclear weapons is to de-emphasize their role in international politics. An avowed aim of the United States is to play down the value of nuclear weapons through policy declarations and actions that lessen the visibility of differences over nuclear ownership. As the National Defense Authorization Act for the Fiscal Year 1993 states, the "nuclear nonproliferation policy of the United States should seek to limit both the supply of nuclear weapons and the demand for nuclear weapons."[2] The critical idea to be communicated in policy declarations, as well as actions, is that the role of nuclear weapons is diminishing largely because they are instruments of the "old order." This position is implicit in the policy of the Clinton Administration.

The United States and other states will continue to possess nuclear weapons, despite the fact that the collapse of the Cold War has eclipsed the power and undermined the inherent value of nuclear weapons in diplomacy. This new policy also must emphasize the discriminatory nature of the old policies governing the possession of nuclear weapons. The fundamental element of this policy is that any state is entitled to possession of these weapons based solely on its international conduct.

There are three practical steps for implementing this fundamental change in U.S. policy. First, the United States should state clearly

that it maintains no nuclear weapons on the territory of any other state. This condition already was implemented in accordance with President Bush's declaration in September 1991 that U.S. tactical nuclear weapons would be returned to the United States.

Second, the United States should support and encourage the broader use of nuclear weapons-free zones to establish areas wherein nuclear weapons are not a normal part of political and military relations. Nuclear weapons-free zones in Africa and Northeast Asia, for instance, would demonstrate that nuclear weapons are not a normal part of political disclosure, and thus are not necessary components of security.

Third, the United States should eliminate the "neither confirm nor deny" policy concerning the deployment of nuclear weapons with U.S. forces. This will provide a clear signal that the United States sees no need for any deployment of nuclear weapons in its non-strategic forces.

Recommendation 2: Enlarge the permanent membership of the United Nations Security Council to include non-nuclear states.

An effective way to downplay the significance of nuclear weapons is to demonstrate that major power status is not defined in terms of nuclear ownership. For decades, the major states possessed nuclear weapons, occupied the permanent seats on the United Nations Security Council, and had their status enshrined under the Nuclear Nonproliferation Treaty. The fact that the Security Council permanent members were the sole legal possessors of nuclear weapons explicitly confirmed the importance of nuclear weapons in international diplomacy.

The surest way to reduce the gravity of nuclear weapons is to transfer the benefits of major power status to non-nuclear powers. Currently, Germany and Japan, by virtue of their immense economic power and technological acumen, as well as ability to be nuclear powers if they wished, are ideal representatives of major powers which have chosen to remain non-nuclear states. Their participation as permanent members of the Security Council

would symbolize in unequivocal terms that non-nuclear states are included in the ranks of the major powers, even though some states may oppose such membership based on the historical record. It also demonstrates that nuclear weapons are not the fundamental determinant of great-power status in the international system. These are the types of positive developments that should be encouraged by U.S. policy.

Recommendation 3: Use security institutions to safeguard the interests of states.

Nuclear ownership is a clear expression of a state's fundamental aspiration to ensure its political and military security. Nuclear weapons also reflect a state's insecurity about regional threats. However, to reduce nuclear ownership incentives, however, the United States and the international community need to use security institutions to safeguard the security interests of potential nuclear aspirants. This policy will operate on two levels.

First, the United States in some instances should support the extension of membership in NATO or other regional alliances to states which otherwise will look to nuclear weapons as an alternative guarantor of security. Ukraine, for example, has maintained steadfastly since 1991 that it will repatriate nuclear weapons to Russia in exchange for involvement in institutions that bind Ukraine's fate more closely to the United States and Europe. Second, the inclusion of states in regional security regimes, such as NATO, provides an alternative to unilateral security guarantees, particularly when those guarantees are not credible given the geographic and political circumstances in Europe. Returning to the example of Ukraine, inclusion in NATO would circumvent many of the problems associated with Ukraine's demand for security guarantees within an established political framework. Since the United States and European members of NATO are not willing to give binding and credible security guarantees to Ukraine, then nuclear weapons become Ukraine's only option for guaranteeing its security.

Recommendation 4: Renegotiate the Nuclear Non-Proliferation Treaty.

The nuclear nonproliferation regime is the most accomplished of all efforts dealing with weapons of mass destruction. The norm embodied in the NPT, that countries should foreswear such weapons, has been embraced by 160 non-nuclear states. This nuclear nonproliferation norm is an undeniable factor in international relations. Invoking global norms is still enormously valuable when trying to deal with the problem countries. This norm provides a critically important legal, political, and moral basis for demanding restraint by North Korea, Iran, and other potentially destabilizing states. Without the invocation of nonproliferation norms, we would have to deal with the cases of destabilizing proliferation *ab initio*, using raw power to check the nuclear ambitions of these states. Our objective should not be the elimination of the nonproliferation regime, but rather the strengthening of that regime to fit changing international conditions.

To accomplish this objective, the United States should seek the renegotiation of the Nuclear Nonproliferation Treaty as a major element of its proliferation policy. With the forthcoming 1995 NPT Review Conference, there is an opportunity to redefine the concept of nuclear-weapons states and non-weapon states, which are the core concepts of the language of nonproliferation. Central to such redefinition must be a change to the restrictive definition of a nuclear-weapons state in Article IX of the NPT,[3] and the application of safeguards to the civilian power facilities of all states. The renegotiation should seek, first, to encourage all nuclear-weapon states to join and undertake the responsibilities of treaty states, and second, to improve the general security guarantees to non-weapon states that are included in the NPT.

The principle of dividing the world into nuclear "Haves" and "Have-nots" is no longer consistent with the fact of nuclear ownership in the emerging security environment. The emergence of the new nuclear states of Israel, India, Pakistan, Ukraine, Kazakhstan, Belarus, and North Korea, which is more than twice

the number defined in the NPT, casts serious doubts on the relevance of nuclear status as defined in the NPT.

It may be essential, even beyond a renegotiation of the NPT as outlined above, to establish bilateral nuclear security treaties with individual states. The purpose of such bilateral agreements is to assist the new nuclear states in their efforts to create safe and secure nuclear arsenals and thus to strengthen global security and stability. Reported U.S. efforts during the Kennedy Administration to help the Soviet Union, and later efforts to help France and Pakistan, may provide models for working outside the formal mechanisms of the NPT to create stable nuclear forces. Through quiet diplomatic efforts, the United States has a practical mechanism for redefining nuclear status as an essential step toward the elimination of the discriminatory norms for nuclear ownership that were enshrined in the NPT in the middle of the Cold War. With the emergence of new nuclear states, it is time not just to strengthen the NPT and the IAEA,[4] but to create a new basis for nuclear coexistence among all states that does not hinge on whether they possess nuclear weapons.

Recommendation 5: Employ economic instruments to reward states that forego nuclear weapons.

A major tool available to the international community is to use a broad array of economic inducements to reward states that forego nuclear weapons. To date, there have not been any obvious benefits to states that make the deliberate choice to forego nuclear weapons. In the past the primary approach was to use trade sanctions and export controls to punish states that sought nuclear weapons. The preferred approach is to create positive inducements as a way to encourage and reward states for retaining a non-nuclear status. Various multilateral and U.S. assistance and aid programs can be directed to encourage non-nuclear states to preserve their status and to support the denuclearization efforts of states that currently possess nuclear weapons. If these fail, then the United States can turn to various "sticks."

Recommendation 6: Reduce or eliminate the military effectiveness of nuclear weapons.

There are two steps that the United States can follow to reduce or eliminate the military effectiveness of nuclear weapons. First, it is necessary to maintain a long-term emphasis on defensive systems. The ability to defend U.S. interests abroad is critical for the future political and economic well-being of the American people. The ability of the United States to project force abroad not only increases the effectiveness of U.S. foreign policy but also is essential to providing reassurance to key allies.

The United States can maintain freedom of action in the implementation of its foreign policy only if it is capable of defending the homeland and military forces when they are deployed abroad in support of U.S. interests or those of its allies. The limited deployment of defensive systems will serve to counter the threat of small-scale attacks against the United States homeland or U.S. forces abroad. This capability will preserve U.S. foreign policy options and eliminate the potential for nuclear blackmail in a crisis.

Second, continued efforts to develop precision-guided munitions and delivery systems increase the effectiveness of preemptive attacks against hostile regional nuclear forces. These policies should be central elements in the long-range research and development programs of the Department of Defense.

The broad purpose behind these recommendations is to provide a framework for U.S. efforts to decrease the incentives that motivate states to possess nuclear weapons. The list is not meant to be comprehensive, but to highlight the more critical policy initiatives that will help the United States bring its nuclear proliferation policy into conformity with the realities of the emerging international order.

OBJECTIVE 2: Stabilize Existing Nuclear Forces Through Measures That Create and Maintain Safe and Secure Forces.

This objective rests on the principle that the United States has an obligation to ensure that states which possess nuclear weapons

have safe and secure forces. This principle recognizes explicitly that nuclear ownership has stabilizing consequences, particularly if nuclear arsenals are perceived to be under tight control within the limits imposed by national political institutions and technology.[5] It is necessary for the United States to be engaged in sustained efforts to assure that states possess a safe and secure system for their nuclear arsenals rather than merely engaging in ineffective denunciations of nuclear ownership.

The notion that nuclear proliferation can be stabilizing frees the United States to refocus its efforts on minimizing those dangers inherent in existing arsenals. Each of these steps represents a fundamental redirection of U.S. policy toward enhancing the safety and security of nuclear weapons in stabilizing cases of proliferation. There are several categories of recommendations that support this objective.

Recommendation 1: Establish secure command and control over nuclear forces.

The foremost requirement is to establish tight political and military control over nuclear weapons and forces. First, this is accomplished through a complex series of physical and electronic controls on nuclear weapons — notably permissive action links — and communications protocols that regulate the ability to use those forces. Such controls instill confidence that nuclear forces can be used only with orders from the legitimate political authority.[6]

Second, SSF measures entail steps to ensure that the nuclear weapons and delivery vehicles are under tight physical security. Their purpose is to ensure that there is no leakage of nuclear weapons from legitimate political and military authorities. Third, SSF means that the deployment of nuclear weapons — through dispersal, hardening, and uncertainty about location — provides a measure of security against preemptive attacks by regional adversaries.

SSF measures are designed to build the confidence of nuclear weapons states that nuclear forces will remain under tight political and operational control. The United States and the international

community should derive comfort from the knowledge that nuclear ownership must encompass the same measures that gave the United States confidence in the safety and security of nuclear arsenals during the Cold War. This is essential to strengthen the hope that nuclear arsenals are not poised on the brink of uncertain control.

Recommendation 2: Assist states in the development of a nuclear culture that understands the peculiar challenges of nuclear ownership.

The possession of nuclear weapons imposes special demands on states. Nuclear weapons influence a panoply of actions that range from one's behavior in a crisis to the subtle language of diplomacy. It is evident from U.S. cold war experiences that nuclear weapons radically altered the tone and conduct of diplomacy among nuclear states. The risks of error in a confrontation compelled states to craft their language and actions to minimize the probability of confusion and error. The United States and other states that possess nuclear weapons have an obligation to influence potential nuclear owners to accept the special rules imposed upon states that are the custodians of nuclear weapons. Mechanisms for this include extensive liaison among political and military institutions.[8]

Recommendation 3: Employ cooperative measures among intelligence agencies to broaden states' knowledge of their adversaries.

Arguably the most stabilizing feature of nuclear diplomacy during the Cold War was the comfort that states felt when they had some knowledge about their adversaries. The United States invested untold billions of dollars in an intelligence-gathering mechanism to ensure that the nature and extent of Soviet capabilities and preparations were well known. There was great comfort in the knowledge that the United States would have

warning of an attack, and more broadly, that the capabilities of U.S. adversaries were understood. While there were instances of over-reaction and arms-racing, the superpowers rather carefully modulated their policies to the capabilities of the adversary.

There is a need to establish intelligence-sharing mechanisms that are available to all states, particularly those that possess nuclear weapons. Access to warning systems and products of reconnaissance systems, for example, would give states confidence in their ability to receive adequate warning of an impending attack. The caveat, however, is that the actions of selected states are so inimical to the U.S. interest in stability that it might be difficult to share such information.

Recommendation 4: Develop an international launch-detection and -warning system available to all states.

The development of an international launch detection system that is available to all states will increase stability and security. The clear and rapid identification of aggressors will reduce incentives to fear preemptive strikes, and thus diminish the tendency to use nuclear weapons in a precipitous or inadvertent fashion. The United States and the international community should establish such a system and make it accessible to all signatories of the "Nuclear Security Treaty." This was the subject of Yeltsin-Bush and Yeltsin-Clinton talks regarding joint ventures in defensive technologies, the establishment joint crisis centers, and improvements in communications between the two states.

OBJECTIVE 3: Avert Destabilizing Cases of Nuclear Proliferation.

There is nothing inherently revolutionary about the recommendations in this section because these actions follow the historical approach to nuclear nonproliferation. The crucial distinction is the application of these sanctions in support of policies that increase the difficulties for states that want to achieve nuclear ownership. This will occur on four levels.

First, this policy bases the U.S. position on nuclear ownership on the conduct of states that conforms to accepted standards of behavior, rather than blanket opposition to the possession of nuclear weapons or technologies by non-nuclear states. Second, this policy fundamentally seeks to increase the risk of military intervention against states when it becomes necessary to avert unstable cases of nuclear ownership. Third, this policy rests on the presumption that the United States and the international community will possess the political will to stop proliferation in destabilizing cases. Fourth, the hope is that the distinction between stabilizing and destabilizing cases of nuclear ownership will motivate states to exercise greater caution in their actions as nuclear-armed states.

In the universe of proliferation activities, there are not many instances that are truly destabilizing, because in many cases nuclear weapons strengthen the prohibitions against war. The United States thus can afford the luxury of being highly selective when it identifies potentially destabilizing cases of nuclear ownership. But a selective approach will be more effective than blanket opposition to all cases of proliferation, given that the ability of the United States to hinder nuclear ownership is more limited than policymakers would like to acknowledge. This policy seeks to integrate the current approach of tight restrictions on nuclear ownership into a broader and more comprehensive policy for governing proliferation in the next century.

There are several actions that support this objective.

Recommendation 1: Enforce rigid controls only on critical elements that are essential to nuclear weapons development.

The historical approach to export controls operated on the premise of controlling all technologies that could be used in military applications. The result was broad, yet diffuse lists of controlled dual-use items that were as incredible as they were difficult to enforce. The United States needs to strengthen existing control regimes through the establish highly selective lists of sensi-

tive technologies that directly support nuclear weapons programs. There is work to be done to integrate the existing control regimes to eliminate the overlaps through which technologies can fall into the wrong hands. The only way to put teeth in export control systems is to focus on weapons technologies rather than immense lists that contain every conceivable technology with nuclear applications. The Clinton Adminstration already is taking steps to implement this recommendation.

Recommendation 2: Improve coordination among intelligence agencies in the sharing of information on proliferation activities.

The United States government, particularly the policy-making and intelligence branches, spends an inordinate amount of time and resources attempting to determine when a state will cross the nuclear threshold. The bureaucratic process in the United States government needs to place far greater emphasis on responding to nuclear weapons programs, and relatively less emphasis on charting the precise status of nuclear weapons programs in these states.

To prevent the emergence of destabilizing instances of nuclear ownership, intelligence agencies need to strengthen the degree of external coordination. Intelligence agencies need to expand the sharing of information among themselves and with international agencies that are responsible for averting nuclear proliferation. There should be increased liaison on nuclear weapons issues, including illicit transfers of nuclear weapons, fissile material and critical technologies, and scientific personnel. The objective is to identify critical nuclear facilities in states as a way to estimate the progress of those programs. An exemplar of this approach was the routine sharing of intelligence information with the United Nations Office of Special Inspections that was established to dismantle Iraq's nuclear weapon program. Other examples include redirecting resources formerly used to contain the Soviet Union toward worst cases of possible proliferation, and more extensive sharing of national intelligence with IAEA inspectors where practical.[7]

Recommendation 3: Discard political sanctions as an instrument for isolating potential nuclear proliferants.

The problem with traditional nonproliferation policies was that they placed excessive reliance on rhetorical denunciations of states that wanted to become nuclear powers. Diminishing the emphasis on political sanctions which leads to the cessation of routine contacts will strengthen U.S. policy in two ways. First, these sanctions rarely are effective because they tend to isolate the proliferating state from communication and influence that can be brought to bear by the United States and the international community. It is far better for the United States to deal with the state, rather than isolate it, to preserve some influence with the leadership. Second, political sanctions often embarrass the United States when it is forced to deal with the state in other international fora because it needs their cooperation on other issues.

Recommendation 4: Expand economic sanctions to selectively isolate states from normal international commerce and finance.

Economic sanctions represent potentially effective mechanisms for isolating states from the increasingly vital lifeblood of international trade and commerce. The United States should encourage greater selective use of economic sanctions as a way to discourage some states from nuclear ownership. The threat of isolation from international financial transfers imposes immense costs for states that participate in the global economy. Coordinating sanctions with other nations influential in the International Monetary Fund, World Bank, and various development agencies can restrict access to the financial assets that are critical to many states. The United States also can use its leverage to convince lender states to restrain commerce with these states. The focus, however, of these sanctions has to be on the destabilizing cases.

Recommendation 5: Articulate the role of military sanctions as an essential element of national and international policy.

The United States needs to preserve the right to apply military sanctions unilaterally or multilaterally against states whose nuclear programs represent a profoundly destabilizing threat to international security.[9] The prospect of intervention must be treated with extreme caution and never advanced as a hollow threat. The current Defense Counter-Proliferation Initiative, presented by then-Secretary of Defense Aspin, is a step in the right direction. The threat of military sanctions is more effective the less they are discussed in the public. Military sanctions must remain an essential and credible element of the national security policy of the United States.

OBJECTIVE 4: Reverse Discriminatory Norms to Broaden Access to Civilian Nuclear Power and Technologies.

The United States needs to develop a policy that eliminates the discriminatory access to civilian nuclear power. States have legitimate reasons for developing nuclear power, and the international community should support these efforts. This objective represents a fundamental change in the policies that were driven by fears that access to nuclear power should be restricted because it was a mask for the real aim of developing nuclear weapons programs. There are several actions that support this objective.

Recommendation 1: Strictly control access to critical technologies and nuclear materials that support weapons programs.

This new policy requires careful review of export controls for the purpose of imposing far stricter focus on the materials that directly support state efforts to develop nuclear weapons. To accomplish this, the United States and NPT signatories must tighten the IAEA safeguards inspections and strengthen the London

Suppliers Group.[10] The United States expressed support for these mechanisms.[11]

On a more symbolic level, the United States needs to encourage states to develop nuclear power programs in a more vigorous fashion. The old approach of saying that nuclear power is acceptable so long as nuclear weapons are not developed carries the mystique of implicit opposition to nuclear power programs. States in the developing world have pursued nuclear power because they believe it is necessary to economic development and modernization. The United States can accomplish the objective of controlling nuclear-weapons technologies without inhibiting nuclear power programs. The inherent tensions between Article IV of the NPT and restrictions put in place by both the London Suppliers Group and the U.S. Nuclear Nonproliferation Act of 1968, which goes beyond Article III of the NPT, must be resolved in ways that assure the availability of nuclear power to all states. It simultaneously must provide effective safeguards against developing nuclear weapons with material from such legitimate nuclear facilities. This has not yet been accomplished but is essential to a non-discriminatory approach.

Recommendation 2: Continue efforts to restrict plutonium reprocessing facilities.

With the dismantlement of Russian nuclear warheads, the danger is that the extracted plutonium could leak into the international market. The Clinton Administration's support for international plutonium[12] repositories is a step in the right direction toward strict and credible controls on plutonium.[13] As the only legitimate uses for plutonium are nuclear weapons and fast-breeder reactors, it is proper for the United States to establish controls on plutonium. The United States was continues its efforts to dissuade Japan, however, from its commitment to fast-breeder reactor technology.[14] Despite the success in convincing Japan to slow its breeder program, the United States must work to establish more stringent controls on plutonium. One step is to negotiate an agreement to dispose of plutonium.[15]

Recommendation 3: Broaden coordination among intelligence agencies to support limiting access to sensitive nuclear materials.

As discussed earlier, coordination among intelligence agencies is an essential element of restricting the flow of sensitive nuclear materials to potentially destabilizing cases of proliferation. The thrust of these efforts should be to share information for the purpose of identifying states that want to use civilian nuclear power as a cover for developing nuclear weapons. For the rest, however, the objective is to make civilian nuclear technologies available to developing states.

C. Conclusions

These recommendations are motivated by the need to reform the U.S. proliferation policy to fit the conditions of the emerging international order. Several caveats are in order.

First, the United States needs to abandon the illusion that it can create a perfect nonproliferation regime, or that the remedy to current problems is a few simple "engineering" steps. The essence of an effective nuclear proliferation policy must begin with no less than a fundamental review of the principles that govern United States policy.

Second, while there are several candidates for tightening or sharpening the proliferation process in the government, this is not a plea for U.S. bureaucratic reform. With the exception of the creation of a "proliferation czar" at the cabinet level, the solution to nuclear proliferation problems is vastly more complicated than bureaucratic reform. The problem cases in nuclear proliferation derive from an improper conception of proliferation incentives and the ineffective application of power to dissuade states from nuclear ownership. The problem, however, is not governmental or bureaucratic inefficiency. As long as the drive toward nuclear weapons is influenced by the internal dynamics of states, rather than the actions of the United States or the international community,

bureaucratic reform will have no seri effect on the aspirations to possess nuclear weapons.

Third, now, more than ever, the United States needs "new thinking" to reshape its policies in an era of profound change. The mandate during the Cold War was to coexist with the Soviet Union without destroying the world through nuclear war. With the end of the Cold War, future generations will judge current U.S. policymakers on the basis of their success in fashioning a new framework for global security in a world of nuclear proliferation. The imperative in developing such a framework is the evolution in proliferation policy in which the United States and all nuclear-armed states learn to coexist. Now that nuclear weapons are no longer the defining condition of international politics, it is possible for the United States to envision a time in which the term "nuclear coexistence" signifies the attainment of an era of global stability in which states live with nuclear weapons because they have learned to look beyond them.

Notes

1. See Heather Wilson, "Missed Opportunities: Washington Politics and Nuclear Proliferation," *The National Interest*, Winter 1993/94, pp. 26-36, for background on the bureaucratic political process in the "nonproliferation" bureaucracies.

2. See Congressional Record, *National Defense Authorization Act for Fiscal Year 1993*, H4135, June 4, 1992.

3. As defined in Article IX of the NPT, "For the purpose of this Treaty, a nuclear-weapon state is one which has manufactured and exploded a nuclear weapon or other nuclear explosive device prior to 1 January 1967." See Pilat and Pendley, *Beyond 1991*, p. 181.

4. See "How to Make the NPT More Effective," *Nature*, March 25, 1993, p. 275, for suggestions to strengthen the safeguards regime and build sanctions similar to those imposed by the U.N. Security Council against Iraq.

5. See Peter D. Feaver, "Command and Control In Emerging Nuclear Nations," *International Security*, Vol. 17, No. 3, Winter 1992/93, pp. 160-87, for a useful review of ideas for establishing safe and secure arsenals through command and control approaches.

6. See Steven E. Miller, "Assistance to Newly Proliferating Nations," in Blackwill, et. al., *New Nuclear Nations*, for a useful summary of ideas about tightening control over nascent nuclear arsenals. Also see Feaver, "Command and Control In Emerging Nuclear Nations," for a list of these ideas.

7. See Harald Muller, "Options for Nonproliferation Security Policy," Bailey and Rudney, *Proliferation and Export Controls*, pp. 69-71, for a discussion of the importance of intelligence in nonproliferation policy.

8. The critical concept of "strategic personality" is articulated in William C. Martel, "Images of Deterrence and Opportunities for Cooperation," unpublished manuscript, presented at Midwest Political Science Association, April 1992.

9. See Philip Zelikow, "Offensive Military Options," in Blackwill, *et. al.*, *New Nuclear Nations*, for a summary of arguments about the mechanics of preemptive attacks against nascent nuclear arsenals.

10. See Joseph F. Pilat, "Iraq and the Future of Nuclear Nonproliferation: The Roles of Inspections and Treaties," *Science*, March 6, 1992, pp. 1224-30, for the reasoning behind efforts to improve safeguards inspection regimes.

11. See Secretary of State Warren Christopher, "US Support for Nuclear Suppliers Group," *US Department of State Dispatch*, April 5, 1993, p. 205.

12. See David Albright, "A Proliferation Primer," *Bulletin of the Atomic Scientists*, June 1993, p. 14, for a survey of facilities where plutonium and highly-enriched uranium are produced and stored. George Perkovich, "The Plutonium Genie," *Foreign Affairs*, Summer 1993, pp. 153-65, discusses the implications of controlling plutonium. Further, there are reports that "at least two of the three confirmed thefts of nuclear material in Russia came from civilian installations" where plutonium is used for civilian purposes. See "Safeguard All Plutonium Now," *New York Times*, February 2, 1994, p. A10.

13. See "President Clinton's Address to the U.N. General Assembly, September 27, 1993," *Foreign Policy Bulletin*, November/December 1993, p. 51, when he said that the United States "will press for an international agreement that would ban production of these materials [plutonium and highly enriched uranium] for weapons forever."

14. David E. Sanger, "Japan, Bowing to Pressure, Defers Plutonium Projects," *New York Times*, February 22, 1994, p. 2.

15. In an editorial, the *New York Times* urged the Clinton Administration to undertake such negotiations as soon as possible. See "Safeguard All Plutonium Now," *New York Times*, February 2, 1994, p. A10.