

DETERRENCE AFTER NUCLEAR PROLIFERATION: IMPLICATIONS FOR NUCLEAR FORCES AND DEFENSE SPENDING

by Eric H. Arnett

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There has been an upsurge in the literature considering whether or not the United States would intervene against a country (as it did against Iraq in 1990-91) if the latter were armed with nuclear weapons. Since much of this literature is intended to discover new justifications for procurement programs that are under fire as defense budgets shrink and nuclear testing comes to a halt, it tends to focus on what weapons would be used, assuming a decision to intervene. Such an approach is in dramatic contrast with the discourse of the superpower stand-off during the Cold War, which came to see nuclear deterrence as largely existential, nuclear weapons as "equalizers" for countries, and alliances facing stiff odds in the conventional balance of forces. During this time, the point of the nuclear spear was treated as a secondary matter, one of low policy.

Until recently, little attention had been

paid to the possibility that the United States might be deterred from projecting power by a new nuclear power despite its nuclear preponderance. In 1992, however, Les Aspin, then-chair of the House Committee on Armed Services, voiced a new realization: "Nuclear weapons still serve the same purpose--as a great equalizer. But it is the United States that is now the potential "equalizee."¹ This essay considers Aspin's concern in light of the Defense Department's daunting charge to reduce U.S. defense spending. It begins with a consideration of crucial changes in the political milieu inherent in a world with more nuclear powers that must inform reasonable defense planning. After that discussion, military issues are elaborated in general and then discussed in the light of plausible near- and middle-term proliferants.

CONTINUITY OR DISENGAGEMENT?

Much of the commentary in the small but burgeoning literature on "proliferation contingency planning" accepts the assumption that the process by which the United States defines its interests would be unaffected by the spread of nuclear capabilities, essentially leaving the problem to military planners.² Certainly military planners will be expected to provide their command authorities with the option of intervening against a new nuclear power, but it is far from clear that political elites would ever choose to exercise that option. Given the assumption that U.S. nuclear weapons have deterred attacks on U.S. interests over the last four decades, it is difficult to accept that nuclear weapons deployed by less-developed states will leave U.S. decisionmaking unaffected. This following discussion analyzes the

ways in which nuclear proliferation could affect the definition of U.S. interests, examines whether changes in those interests will be observable, and questions whether these considerations will have any effect on forces procured and deployed.

I have argued elsewhere that asymmetries of interest and determination might lead the United States to abandon a significant interest in the face of a relatively small nuclear arsenal, despite U.S. nuclear superiority and a carefully articulated strategy of escalation dominance and flexible response.³ The generally accepted deterrent effect of French nuclear weapons offers an important example of a small nuclear force deployed by an economically less-capable state against a superpower enjoying insurmountable escalation dominance. The possibility that non-European nuclear powers might develop a similar concept should not be disregarded by planners in peacetime or by political authorities in the midst of a crisis.⁴ More importantly, cultural differences and poor communication could make it difficult for U.S. political elites to be sure that they were not crossing a threshold that made nuclear war unavoidable in the eyes of a regional rival. U.S. and friendly intelligence on many of the countries of interest is inadequate,⁵ as evidenced by Washington's inability to predict President Saddam Hussein's behavior during the Kuwait crisis.⁶ This problem would be aggravated by the unprecedented tensions of a nuclear crisis, which could be expected to have unpredictable effects on the behavior of leaders in Western and less-developed states alike.⁷ Given that these uncertainties and risks can easily be foreseen, the prudent course for U.S. decisionmakers in many cases would seem to be to accept deterrence.⁸

Nevertheless, history is replete with prudent courses not taken. It is impor-

tant, therefore, to envision ways in which the existence of a regional adversary's nuclear arsenal could affect the decisions made by U.S. political and opinion elites. Such an analysis must begin with a consideration of how consensus about national interests is reached. Much of the literature on this subject assumes, whether implicitly or explicitly, that interests are well understood, and slow to change. In reality, few interests are understood, and it is only through political processes that governments decide whether what is on their agenda constitutes a core interest. This should be evident from the inconclusive public debate during the Kuwait crisis about whether the emirate's independence was a U.S. interest and, more interestingly, *why* it was a U.S. interest.⁹ In retrospect, it is easy to see that the determination of a single actor, President George Bush, brought the international political process to the consensus that war with Iraq was a preferable course of action, without securing agreement about what interest was being served. Thus, it should not be difficult to accept that a future president, facing a similar crisis involving a nuclear rival, could accept a course of action other than war, in part because of his fears about the risk of a nuclear war that could ultimately reach U.S. territory, without ever explicitly confirming that a core U.S. interest had been abandoned. In the case of Kuwait, this hypothetical president would have sided with the faction that saw only the defense of Saudi Arabia as a core U.S. interest and pursued a less activist approach to liberating Kuwait, which would have been seen as a peripheral U.S. interest.¹⁰ Although this development is unsettling, it should not seem unfamiliar to observers familiar with Western Europe's doubts about the U.S. nuclear guarantee. These doubts persist despite a strong alliance and cul-

tural ties, a clear consensus on the enemy, the development of policies like Flexible Response, and the shared drama of the Euromissile crisis.

The debate among U.S. elites that preceded the Kuwait war points up one international interest that is indisputably ascending. After some misgivings about Israel's attack on Iraq's nuclear facility in 1982, mainstream opinion seems by 1994 to have accepted that violent anti-proliferation measures are warranted in some cases. It is in determining in which cases they are warranted that complications arise. Commentators in the field now apparently agree that such measures--variously described as "coercive arms control" (perhaps more grammatically "coerced arms control"), "de-proliferation,"¹¹ or "early pre-emption"--are the most reliable measures in the Middle East, where sabotage, murder, and bombing have been practiced by at least four countries in the past, including the United States.

A more interesting question that has arisen in the nonproliferation literature is whether concerns about proliferation will lead the United States to retain otherwise untenable interests. The most frequently cited example is that of South Korea, which is seen as likely to deploy nuclear weapons if U.S. security guarantees are weakened. In one scenario, U.S. nuclear weapons are unequivocally withdrawn from the South, but the North deploys nuclear weapons anyway, setting off a proliferation chain reaction that eventually reaches Japan. Regardless of the plausibility of this scenario,¹² it is difficult to accept that U.S. political elite and mass opinion about the diminishing value of the commitment to South Korea would be affected by this rather hypothetical and abstract line of argument, given the more immediate concerns seen to be at stake. Similar conditions are present in

the other relevant cases, for example, Pakistan and Taiwan. The United States does not agree to help defend its partners simply in order to keep them from acquiring nuclear weapons, and security guarantees offered in that spirit are unlikely to offer much real reassurance.

Given the subtle mechanisms through which U.S. political elites might accept deterrence, it would not be necessary for this acceptance to be acknowledged publicly. In fact, it may not be acknowledged privately either. For these reasons, it will be difficult for future social scientists and historians to decide whether U.S. intervention has been deterred or U.S. interests affected.

Still, it is possible that widespread nuclear proliferation will strengthen the anti-interventionist or isolationist strain in U.S. political discourse. If so, the image of the United States as the "world's policeman," already of ambiguous utility in domestic politics, might be replaced by that of the "couch-potato superpower." This is not to say that Washington will be able to avoid international conflict altogether, just that support for it might be granted only grudgingly. In any case, such a change of national character appears unlikely in the near future.

It is sometimes argued that possession of a nuclear arsenal would embolden some leaders to such an extent that they would undertake aggression otherwise not in their interests. Indeed, the support and prestige with which President Saddam was lauded after his April 2, 1990 speech, in which he extended his chemical deterrent over all Arabs,¹³ appears to have been responsible in part for his willingness to consider the invasion of Kuwait. It is not clear that the declarations of U.S. political elites prior to a crisis would have much effect on leaders subject to such beliefs, nor that any change produced would be the one intended.¹⁴

I would argue that military planning in response to nuclear proliferation should have little effect on U.S. force structure. An equally interesting question that cannot be answered definitively is whether continued nuclear proliferation will affect the willingness of U.S. political elites to fund military programs. On the one hand, the deterrent effect of new nuclear arsenals makes U.S. intervention less likely in the long-term. On the other hand, the newly acknowledged importance of violent anti-proliferation efforts may increase the frequency of U.S. intervention in the near-term.¹⁵ Although attitudes may change because of proliferation during the interim between the near- and long-terms, other factors--especially fiscal factors and issues of competitiveness--are likely to have a more pronounced effect. Forces adequate for effective intervention should be able to defend themselves against plausible nuclear threats (at least to the extent that nuclear attacks can be defended against at all), but it is possible that declining defense budgets and the foreseeable squeeze on funding for acquisition will leave the United States with intervention forces so small that other, non-military options will be pursued in the event of a future crisis.

COROLLARY ISSUES FOR MILITARY PLANNERS

Whether or not U.S. political elites decide to intervene against a new nuclear power, U.S. military planners must assume that they might.¹⁶ With the waning of the Cold War, attention to proliferation issues has increased in military circles, so "counterproliferation" programs have a greater probability of being funded. This section considers three military missions--pre-emption, defense, and retaliation--that the services might be expected to carry out in the event

that intervention against a new nuclear power is ordered. In discussing these missions, the importance and characteristics of appropriate military responses to the threat posed by proliferant arsenals is considered. Some programs that have been put forward elsewhere for consideration are found to be inappropriate.

The ability to successfully preempt a new nuclear arsenal depends strongly on adequate intelligence, the size and basing mode of the arsenal, and the delivery technology brought to bear by the United States. Significantly, the political elite's decision to intervene may imply that pre-emption is necessary as the first blow of a campaign. The Iraqi case notwithstanding, it may not be politically or strategically desirable to strike first. As was true during the Cold War, command and control processes will have to be designed to address the delicate tension between waiting for unambiguous warning of incipient attack and the possibility that such an attack would not be detected in time. In cases where U.S. political elites and military planners cannot take the initiative and strike first, the requirement to wait for warning could decrease the probability that a pre-emptive attack would be successful.

Even with adequate warning or in circumstances where the United States is free to strike first, pre-emption is unlikely to succeed completely. Moreover, planners are unlikely to have confidence that it will, even against relatively small arsenals. Further, the leadership of the state attacked by the United States might believe that a pre-emptive attack on a military capability that safeguards its national existence is a sign that a war of annihilation had begun. The additional risk of nuclear retaliation engendered by attempting pre-emption against such a state could deter U.S. political elites otherwise complacent about the

nuclear shadow thrown across a seemingly familiar conventional war.

To support a pre-emptive strike on a new nuclear arsenal, the U.S. intelligence community would need to provide data on the existence, size, and disposition of the arsenal. As demonstrated by the data emerging from the regime of inspections imposed on Iraq, only human intelligence can provide much of the necessary data. Technical means, though useful, missed entire Iraqi development and manufacturing efforts related to nuclear and chemical weaponry. U.S. intelligence efforts, which have emphasized both technical means over human intelligence and the monitoring of the Soviet Union at the expense of monitoring potential regional adversaries, are likely to be poor in most other countries.¹⁷ In addition, because the countries of concern are closed, militarized societies, they will be more difficult to monitor. Unfortunately, Israeli intelligence efforts have also been less effective than they once were in the recent past against countries of concern in the Middle East.

In some cases, the disposition of the arsenal will be fluid. Prompt intelligence collection, fusion, and dissemination would then be crucial. As was demonstrated during the Kuwait war, all three of these are difficult under the conditions imposed by war, even if circumstances are relatively favorable. Some improvement can be expected as the result of applying lessons learned during the war and the new emphasis on technologies relating to the War Breaker program and the Military Technology Revolution.¹⁸ However, some problems are no doubt irreducible and the solutions to others will involve trade-offs that leave the prospects for successful pre-emption highly uncertain.

The probability of successfully pre-empting a new nuclear arsenal can be understood as a product of the prob-

abilities that each of the elements of the arsenal can be destroyed. Large arsenals decrease the probability of success by increasing the number of factors (on a scale between zero and one), and appropriate basing can decrease the value of the individual factors. Mobile missiles, submarines, and unconventional means of delivery present the most challenging basing modes from the perspective of the military planner interested in pre-emption.¹⁹ Collocating elements reduces the number of independent factors, and is therefore unattractive to militaries possessing few weapons. Further, fear of pre-emption and decapitation could lead planners to deploy forces that, while secure in times of peace, would feature rapid devolution of release authority in crisis or under attack, complicating attempts to preempt through decapitation. The survival of even a few nuclear weapons would leave U.S. command authorities to consider the possibility of unconventional delivery to targets on U.S. territory.

U.S. conventional delivery technology is insufficient to assure the destruction of even fairly small nuclear arsenals, especially in the absence of much better intelligence. Three alternatives that could improve the odds are frequently discussed: nuclear pre-emption, insertion of commandos, and the promise of future conventional weapons. Unfortunately, these cannot significantly improve the prospects that pre-emption will succeed. Although low-yield nuclear weapons are sometimes seen as possible contributors to a pre-emptive attack, the radius of destruction for any nuclear weapon is much smaller than the likely uncertainty about the position of mobile launchers; those launchers that were located could be attacked with conventional weapons. The demonstrated effectiveness of non-nuclear earth penetrators makes nuclear weapons unnecessary for attacks on fixed

launchers and facilities, even if they are hardened. Similarly, although commandos have some capability to seek out and destroy nuclear weapons that have not been located accurately or precisely by intelligence means, they rely heavily on prior knowledge about probable operating areas. Finally, innovations in conventional technologies are not likely to be so dramatic that previously untargetable systems will become vulnerable. Particularly stubborn problems remain in the fields of locating mobile missiles and anti-submarine warfare. In this vein, claims that future cruise missiles will be able to autonomously find and destroy mobile missiles should be treated with skepticism.²⁰ One need only recall that JSTARS, essentially a commercial airliner full of sensors, computers, and trained personnel, was unable to locate Iraqi mobile missile launchers at any time during the Kuwait war, and the F-15E "Strike Eagle," the world's most advanced attack bomber, found few, if any. Future cruise missiles will have less endurance, carry fewer and smaller sensors, and be much less adept at target recognition and other judgements for at least as long as the intelligence of the human brain exceeds that of the silicon-based alternative.²¹

To some extent, the predictable failure of any attempt to preempt a new nuclear arsenal can be compensated for by defenses. Defenses are traditionally referred to as "passive" (those that do not involve the destruction of the attacking weapon or platform) and "active" (those that do). Passive defense is often incorporated into a defending platform's design. Active defense usually requires additional investment and may involve the inadvertent destruction of incorrectly identified objects. Both types of defense are of limited feasibility, though their effectiveness may be exaggerated in the perceptions of political elites.

U.S. naval vessels are not very vulnerable to nuclear attack originating from a less-developed country.²² This is primarily because of their mobility and their ability to perform their key missions (for example, blockade and aerial bombardment) from long ranges. In addition, the Navy has begun a program under which ships will be hardened against nuclear and chemical attack. In some scenarios, however, ships must operate in confined areas or closer to shore (to provide artillery support, to clear mines, to decrease the time-to-target for carrier-based bombers, or to participate in amphibious operations), and would therefore require additional, active defense. Amphibious landings provide excellent, concentrated targets for nuclear weapons, and therefore would be imprudent against a nuclear-armed foe.²³ Fixed installations, allied territory, and U.S. territory are also difficult to defend passively.

In the near-term, air defense against piloted aircraft and cruise missiles will be the most important type of active defense against nuclear attack. U.S. E-2 "Hawkeye" and E-3 "Sentry" aircraft and the "Aegis" naval air-defense system, in partnership with appropriate interceptors, seem to be adequate to furnish a reliable defense against even relatively large air-delivered arsenals. This capability should be expanded to include defenses against tactical ballistic missiles as that becomes feasible, but tactical defense of fixed sites against nuclear missiles is likely to remain a daunting problem. Further, it is not clear that deploying dedicated anti-tactical ballistic missile (ATBM) interceptors on Aegis vessels is the best use of either the interceptors or the vessels' launch tubes. Thus, to the extent that the Navy's current "Standard" air-defense missile can be modified for the ATBM mission, it is preferable to the more specialized (and still unrealized) theater high-altitude air

defense (THAAD) interceptor, which will be sized to the Navy's vertical launch system.²⁴ The Aegis system's SPY-1 radar would require a software upgrade for the ATBM mission, though its power-aperture product is greater than that of the current "Patriot" radar. It is unlikely that missile defenses will be as effective as air defenses for the foreseeable future, and the special threat posed by nuclear ballistic missiles of very short ranges will be difficult to counter for ground forces in some theaters.

In the long-term, submarines armed with nuclear weaponry will present projection forces with an important threat. Submarines can be used to deliver small nuclear warheads by launching cruise missiles against targets on land or at sea, firing torpedoes at coastal targets, or inserting commandos. At present, the submarine fleets of the most plausible potential adversaries are poor or non-existent, and nuclear forces are more likely to be deployed with land and air services, which generally can offer more flexible means of delivery and have greater prestige in the relevant states. As submarines with longer ranges and greater stealth proliferate, the number of targets they are able to threaten will increase. Appropriate anti-submarine warfare (ASW) measures should therefore be pursued. U.S. ASW has until recently focused on forward submarine-to-submarine operations and defense of the aircraft carriers, and has suffered a diminished emphasis under Frank Kelso's tenure as chief of naval staff.

Given U.S. conventional capabilities and the prestige of paramilitary organizations in a number of potential regional adversaries, it is likely that unconventional means of delivery will be considered for some new nuclear arsenals of concern. These could be as straightforward as the use of commandos, or

as ambiguous as the use of apparently civilian aircraft or surface vessels to penetrate U.S. defenses. Accurate intelligence about the existence and disposition of paramilitary nuclear forces would be crucial, but cannot be counted on.²⁵ Some unconventional means of delivery could be defended against actively, but the use of apparently civilian platforms would present a difficult operational problem. Rules of engagement would have to include less strict proscriptions on the interception of ambiguous targets in theaters where commingling of military and civilian traffic is common, for example, the Mediterranean Sea, the Persian Gulf, and the Sea of Japan. False positive rates are likely to be high, resulting in more frequent attacks on civilian aircraft. This is already a significant concern in theaters of actual or latent combat, for example, the Persian Gulf, the Sinai Peninsula, and the Sea of Okhotsk. It is not self-evident, however, that the increased probability of such incidents would affect the decision processes of U.S. political elites in choosing to initiate a build-up or actual hostilities. In some scenarios, the political effect of such an incident could be important, either by undermining support for the operation in the United States or raising the concern in the rival leadership that a war of annihilation was beginning.²⁶

During the Kuwait war, political and opinion elites frequently referred to the inherent threat of nuclear retaliation embodied in U.S., Israeli, and coalition forces in the theatre. Since the war, commentators have speculated on the deterrent effect that this capability may have exerted on the thinking and planning of Iraqi elites who had previously demonstrated that chemical weapons had been integrated into their doctrine and planning. The separate issue of whether nuclear weapons would--or, for

political reasons, could--be used in retaliation also received attention. Similar speculation would no doubt accompany any future nuclear crisis.

If nuclear force were used against U.S. forces or installations, U.S. command authorities would certainly respond. Two key corollary questions are not so easily answered. What would be the targets of a retaliatory strike? And what weapons should be used?

Although some commentators have rather glibly speculated that the United States would be obligated to devastate the society of any state that used nuclear weapons against U.S. forces,²⁷ such a step cannot be justified. When the option was publicly discussed during the Kuwait war, President François Mitterand eloquently and correctly condemned it as "a retreat toward barbarism." Punishing civilians for the actions of a small, possibly unpopular nuclear elite would be unconscionable. Even the military personnel of the adversary state may not be blameworthy. U.S. targeting policy has striven to accommodate these moral issues.²⁸

Targeting the nuclear infrastructure is a compelling alternative, though it is likely to be under attack anyway. Whether publicly acknowledged or not, such attacks would probably include the organization responsible for nuclear planning, including the national leadership, in addition to production and storage facilities. Public support for and U.S. compliance with the proscriptions on targeting political elites is obviously eroding.

Nuclear retaliation is unlikely to be authorized by U.S. command authorities and is unnecessary and undesirable.²⁹ Targets for retaliatory bombing will be vulnerable to conventional attack. Many will be in populated areas where even low-yield nuclear weapons would inflict unnecessary civilian casualties. Further, the symbolism of nuclear restraint is likely to be more compelling to U.S. political elites

than that of nuclear tit-for-tat for a variety of reasons. The idea that de-legitimizing the use of nuclear weapons is in the U.S. interest already enjoys broad support. That support is likely to increase as nuclear weapons continue to proliferate. While the concept of de-legitimization is murky and is often spuriously used to justify policy goals pursued for other reasons, its logic should be compelling to a leader considering the problem of retaliation. A U.S. nuclear response in kind should be deterred by the prospect of nuclear counter-retaliation unless irrefutable intelligence indicates that the entire nuclear arsenal has been destroyed or expended. Absent such an assurance from the intelligence community--and none is likely to be forthcoming--the risk of providing an additional goad to an enemy who might be considering a nuclear attack on U.S. territory would be difficult to justify.

CONCLUSION

The Clinton administration's Defense Counterproliferation Initiative emphasizes redirecting defense and intelligence activities in response to the possibility of hostile nuclear proliferation. Perhaps surprisingly, the discussion in this essay implies that little in the way of special hardware need be procured in anticipation of projecting power against new nuclear states or those on the threshold for the foreseeable future. The systems that might be required -- improved conventional air-to-ground weapons, intelligence-gathering technology, air-defense systems capable of engaging tactical missiles, and appropriate ASW equipment -- are already deployed or under development for conventional missions.

With respect to intelligence, this analysis supports the administration's decision to strengthen attempts to collect intelligence regarding hostile nuclear capabili-

ties, but also suggests that these efforts should not be allowed to crowd out analysis of proliferants' intentions and likely responses. Such a crowding out was a hallmark of Cold War organizations, and organizational predilections reinforced and rewarded during that era may not be dissipated simply by creating and enlarging the CIA's Nonproliferation Center. As secretary of defense, Aspin has emphasized that additional defense intelligence staffing detailed to the center under the counterproliferation initiative would be directed to explore military rather than diplomatic issues.³⁰ In any case, the limitations of intelligence, especially its predictive power, and the bureaucratic propensities of intelligence organizations must be taken into account in drawing conclusions about hostile proliferants and making appropriate policy.

Operationally, the armed services must continue to prepare to fight for limited objectives against proliferants, avoiding the simple assumption that a war started by, say, Pyongyang once it has acquired nuclear weapons will necessarily entail removal of Kim Il Sung or widespread destruction in North Korea. Rules of engagement and attendant requirements for command and control must be tailored to the special tensions of nuclear crises in the developing world, especially with regard to unconventional delivery. Pre-emption, whether nuclear or conventional, should not be the assumed tactic of choice.

Looking beyond the counterproliferation debate, the Clinton administration should be thinking now about how to signal a nuclear North Korea that the United States will support its interests in the region without explicitly threatening the existence of the government in Pyongyang, as it has in the recent past. Similar considerations, though less urgent, should inform U.S. policy toward other potentially hostile countries. More generally, strategists and policymakers should not assume

that U.S. interests will remain unaffected by nuclear proliferation, whatever military preparations have been made.

¹ U.S. Congress, House Committee on the Armed Services, From Deterrence to Denuking: Dealing with Proliferation in the 1990s, by Representative Les Aspin, 1992. Similar discussions are taking place in France and the United Kingdom. Aspin's essay is reproduced in Carin Atterling Wedar, Sven Hellman and Karin Söder, eds., Towards a Nuclear-Weapons-Free World (Stockholm: Tryckfrihet, 1993), in which portions of this essay also appeared. Then-Defense Secretary Aspin reiterated this thought almost verbatim in his "counterproliferation address" to the National Academy of Sciences in December 1993.

² A welcome exception to the trend is Lawrence Freedman's observation, in passing, that "the relevance of third world proliferation is most likely to be found in an unwillingness of western states to take risks in support of friends when this might mean taking on an opponent with an efficient capacity for mass destruction." See Lawrence Freedman, "The Problem of Nuclear Doctrine" in Beatrice Heuser, ed., Nuclear Weapons and the Future of European Security (College Park, Md.: Center for International Security Studies, School of Public Affairs, University of Maryland, 1991). Elsewhere, Freedman has gone further to suggest that "proliferation may create great-power exclusion zones." See his foreword to Patrick J. Garry and Steven A. Maaranen, eds., Nuclear Weapons in the Changing World: Perspectives from Europe, Asia, and Latin America (New York: Plenum Press, 1992). Michael May makes a similar point in "Nuclear Weapons in the New World Order," Disarmament (Fall 1992) and "Should Nuclear Weapons be Used?" in W. Thomas Wander and Eric H. Arnett, eds., The Proliferation of Advanced Weaponry: Technology, Motivations, and Responses (Washington, D.C.: American Association for Advancement of Science (AAAS), 1992). In the same vein, I have concluded that, in the long term, "Nuclear proliferation will force the United States to re-evaluate regional interests, and it will only be able to protect the most important when facing proliferants." See Eric H. Arnett, Gunboat Diplomacy and the Bomb: Nuclear Proliferation and the U.S. Navy (New York: Praeger Publishers, 1989). Michèle Flournoy recently echoed this conclusion: "Nuclear proliferation will force a fundamental reassessment, and in some cases a revision, of how the United States sees its interests and commitments around the world." See her "Implications for Military Strategy" in Robert D. Blackwill and Albert Carnesale, eds., New Nuclear Nations: Consequences for U.S. Policy

(New York: Council on Foreign Relations Press, 1993).

³ Arnett (1989), op. cit. For a representative contrasting view, see James R. Schlesinger, "The Strategic Consequences of Nuclear Proliferation" in James E. Dougherty and John F. Lehman, eds., Arms Control for the Late Sixties (New York: D. van Nostrand, 1967). Schlesinger argued, "the United States can both adjust its policies and adopt countermeasures which reduce the damage that limited nuclear capabilities could inflict. Such countermeasures would maintain or increase the enormous gap between U.S. military capabilities and those possessed by non-superpowers. [...] The cost of developing a capability that could seriously disturb the superpowers (...) is staggering. [...] Not only will they be precluded from implementing nuclear thrusts, but in the relevant cases, their capabilities will remain vulnerable to a disarming first strike. [...] The new nuclear capabilities will be unsophisticated and vulnerable. [...] The only way in which reduction of the gap could be influential is if it undermines the credibility of intervention by a superpower to stabilize conditions in third areas being subject to nuclear threat. [...] What may be desirable is to make crystal clear that (...) the major powers will retain the ability to intervene to deter nuclear threats and to punish nuclear irresponsibility without risking substantial damage to themselves." Schlesinger also suggests that U.S. nuclear supremacy would allow Washington to intervene disinterestedly to prevent regional nuclear wars, a proposition that is hard to accept in the regions of greatest concern.

⁴ Conversations with Israeli and Pakistani analysts indicate that the French model is popular in both countries.

⁵ For an engaging argument that even when intelligence is strong, predictive power may still be weak, see Russell Leigh Moses, Freeing the Hostages: Re-examining U.S.-Iranian Negotiations and Soviet Policy, 1979-1981 (Pittsburgh: University of Pittsburgh Press, forthcoming).

⁶ Most American observers found the Iraqi strategy inexplicable, assuming that President Saddam was "bluffing," "stupid," or "underestimating Western determination." In fact, early in the crisis, the Iraqi government had sent a signal that it was prepared to absorb awesome physical punishment in anticipation of a political victory; Iraqi Vice-President Ezzat Ibrahim told Sweden's ambassador to Baghdad, Henrik Amneus, "Even if we lose 16 million of our population, we are prepared to do whatever is necessary to ensure the dignity of Iraq and its remaining one million people." This strategy can be considered successful from the perspective of domestic politics. Mohamed Heikal, Illusions of Triumph: An Arab View of the Gulf War (London:

HarperCollins Publishers, 1992), p. 226.

⁷ The effects of stress and medications used to alleviate it on behavior in crises is usefully reviewed in Jerrold M. Post, "The Impact of Crisis-Induced Stress on Policy Makers" in Alexander L. George, ed., Avoiding War: Problems of Crisis Management (Boulder, Colo.: Westview Press, 1991).

⁸ For an elaboration of this argument in the case of a confrontation between the United States and Iran, see Arnett (1989), op. cit. This is not to say that the opponent will necessarily have adopted a deterrence doctrine.

⁹ The complexity of this argument is discussed in Eric H. Arnett, "Technology and Emerging Regional Powers: Implications for U.S. Interests" in Eric H. Arnett, ed., Science and International Security: Responding to a Changing World (Washington, D.C.: AAAS, 1990).

¹⁰ Then-Representative Aspin, reportedly an adviser consulted daily by the National Security Council during the Kuwait crisis, observed (U.S. Congress, op. cit.): "It is reasonable to speculate that it would have been enormously difficult to put together a coalition of allies against Iraq from among those countries on or near its borders if Iraq had had nuclear weapons."

¹¹ In contrast, the Clinton administration's counterproliferation initiative as described by Aspin is an exercise in contingency planning.

¹² The probability of Japan or South Korea acquiring nuclear capabilities should not be exaggerated. Both countries are strongly anti-nuclear at present, and there are few indications that the domestic consensus against nuclear weapons in either will change.

¹³ That this retaliatory threat was generally interpreted as an offensive threat to Israel illuminates the difficulty of interpreting even messages designed specifically to clearly communicate the intention to deter and the conditions under which the threat is intended to be operative. My thanks to Shai Feldman for his useful interpretation of President Saddam's speech.

¹⁴ Further, judging in advance the efficacy of U.S. declarations presupposes that such declarations would be made. U.S. indifference and the ambiguities of diplomacy may prevent the issuance of any declaration, or even lead to misleading alternative declarations, as in the case of Dean Acheson's security perimeter speech or the Bush administration's instructions to April Glaspie and her subsequent meeting with President Saddam. The most interesting analysis of the latter is Alexander George's; see his article, "The Persian Gulf Crisis: 1990-91" in George, op. cit.

¹⁵ Indeed, one unnamed military official has been quoted as comparing such regular anti-proliferation attacks to routinely "mowing the lawn." For its part, the Bush administration

apparently did not look forward to periodic repetitions of the Kuwait war, but argued that its precedent offers a disincentive to threshold states hostile to U.S. interests. Nevertheless, a member of Bush's NSC staff recently recommended the extreme measure of "amending international norms to legitimize action against nuclear outlaws," assuming a common definition of "outlaw" could be developed. See Philip Zelikow, "Offensive Military Operations" in Blackwill and Carnesale, *op. cit.* Others have argued that the failure of Iraq's chemical and conventional deterrent makes nuclear proliferation elsewhere more likely.

¹⁶ An earlier discussion based on this assumption is offered in Rodney W. Jones, ed., Small Nuclear Forces and U.S. Security Policy: Threats and Potential Conflicts in the Middle East and South Asia (Lexington, Mass.: D.C. Heath, 1984).

¹⁷ For a somewhat longer discussion of the contrasts between gathering intelligence in the Soviet Union and countries of proliferation concern, see Robert D. Blackwill and Ashton B. Carter, "The Role of Intelligence" in Blackwill and Carnesale, *op. cit.*

¹⁸ The Military Technology Revolution is the most popular term for advances in, *inter alia*, doctrine, surveillance, command and control, and mission planning intended to fully exploit the potential of new military technologies. War Breaker is the Advanced Research Projects Agency's \$140-million showpiece project in battlefield surveillance and target acquisition, intelligence fusion, and platform and weapon cuing. See Michael J. Mazarr, The Military Technical Revolution: A Structural Framework (Washington, D.C.: Center for Strategic and International Studies, 1993).

¹⁹ Possible basing modes and normative and positive criteria for their selection are reviewed in Eric H. Arnett, "Choosing Nuclear Arsenals: Prescriptions and Predictions for New Nuclear Powers," Journal of Strategic Studies (September 1990).

²⁰ For a good, if somewhat over-enthusiastic review, see Glenn W. Goodman, "Brilliant Missiles: Scud Hunter-Killers of the Future," Armed Forces Journal International (September 1991). A more balanced treatment is available in Eric H. Arnett, "The Futile Quest for Autonomy: Long-Range Cruise Missiles and the Future of Strategy," Security Studies (Autumn 1992).

²¹ Although some progress is being made in the fields of sensor research and hardware miniaturization, the crucial area of target-recognition software has stagnated, and there is little prospect of a significant breakthrough. In any case, piloted aircraft will always allow human discretion and judgement to be exercised over sensor data, significantly

increasing the probability that camouflage, decoys, and other countermeasures can be overcome. Eric H. Arnett, Sea-Launched Cruise Missiles and U.S. Security (New York: Praeger Publishers, 1991).

²² For a detailed technical assessment of nuclear effects against surface ships and the limitations of delivery technologies that might be available to proliferants, see Arnett (1989), *op. cit.* For a contrasting analysis, see May, *op. cit.*

²³ Chemical weapons, sea-mines, and coastal-defense cruise missiles also present such significant risks that many observers argue that amphibious operations would be untenable even absent a nuclear threat.

²⁴ Engineers working on THAAD acknowledge that its accelerated development schedule is "technologically risky," and many of the concepts considered for the missile are as yet unproved. These considerations make an improved Standard even more competitive with THAAD. Further modifying the Standard would yield a missile with capabilities comparable to those envisioned for THAAD, with less risk.

²⁵ An interesting account of the overwhelming, and ultimately ignored, intelligence warnings of possible terrorist activity off the coast of Lebanon during the U.S. presence there is included in George C. Wilson, Supercarrier (New York: Macmillan Publishing Company, 1986).

²⁶ For an argument that this perception about the *Vincennes* incident led to Iran's acceptance of the U.N. cease-fire, see Richard Cottam, "The View from Teheran" in Eric H. Arnett, ed., The Iran-Iraq War: Lessons for Mediation and Conflict Resolution (Washington, D.C.: AAAS, 1990). For an excellent discussion of the Iraqi government's ethos in this regard, see Janice Gross Stein, "Deterrence and Compellence in the Gulf, 1990-91: A Failed or Impossible Task?," International Security 17 (Fall 1992). Stein concludes: "Saddam's serious error was not the narrow, technical miscalculation of the impact of air power, but the initial, fundamental misjudgement of the intention of the United States. American leaders could not imagine that Saddam believed that the United States was determined to destroy him." This was despite direct communication to senior Bush administration officials to this effect as early as October 1989. Foreign Minister Tariq Aziz told Milton Vorst, "The Americans had decided long before August 2 to crush Iraq. [...] I was convinced from in April [1990] the Americans (...) had made up their minds to hit us. [...] By late June we had concluded that they had joined some sort of conspiracy to destroy our regime." See "Report from Baghdad," The New Yorker, June 24, 1991.

²⁷ For a recent and influential statement to this effect, see Linton F. Brooks and F.C. Miller, "Nuclear War at Sea," U.S. Naval Institute

Proceedings (August 1988). Brooks and Miller recommend that U.S. retaliation should be "swift and devastating, (...) crudely (...) devastating large areas of the offending country" after the proliferant's attack had "removed the normal sanctions against the massive use of force by a great power against a small one." Since then, it has been reported that U.S. rules of engagement during the Gulf escort mission forbade massive retaliation in response to chemical attacks, whereas U.S. officials warned that Iraqi use of chemical weapons during the Kuwait war would "change the rules" under which the United States restrained itself. Unfortunately, President Bill Clinton's July 1993 threat to "quickly and overwhelmingly retaliate" against North Korea was in this vein. His observation that "they know that is what we are bound to do" suggests that he had not thought through the consequences or other possibilities.

²⁸ See the discussion of targeting decisions made prior to the 1986 bombing of Libya in W. Hays Parks, "Crossing the Line," U.S. Naval Institute Proceedings (November 1986). Parks reports that "at no time [in the considerations of U.S. SACEUR and the Joint Chiefs] was Libya's civilian population considered as a possible target. [...] although a past and potential enemy (...) the professional Libyan military (...) was not necessarily an enemy" and was not targeted. Philip Sabin has made a similar observation about nuclear retaliation against the Iraqi military: "The 1991 Gulf War illustrated the reluctance of Western states to consider [nuclear] use, *even in retaliation*, against ordinary Iraqis thrust into war by Saddam Hussein." See his "Restraints on Chemical, Biological, and Nuclear Use: Some Lessons from History" in Efraim Karsh, Martin S. Navias and Philip Sabin, eds., Non-Conventional Weapon Proliferation in the Middle East (Oxford, England: Clarendon Press, Oxford, 1993), p. 26. Emphasis in original.

²⁹ They are likely to share the conclusion of Walter Slocombe: "There may not be any retaliatory nuclear attack that is credible, effective, and morally acceptable." See his "The Future of U.S. Nuclear Weapons in a Restructured World" in Garrity and Maaranen, *op. cit.*

³⁰ In the same vein, after noting the importance and difficulties of "understanding the strategic personality of a new proliferator," Ashton Carter, now Aspin's deputy for nuclear and proliferation affairs, concluded "Individually, none of the tasks [associated with counterproliferation] is distinctly different from those pursued during the Cold War. They do not call for specific new collection technologies or analytical techniques." See his article, "The Role of Intelligence," in Blackwill and Carter, *op. cit.*