Civil-Military Relations and Nuclear Weapons

Scott D. Sagan, Editor

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and Arms Control

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Scott D. Sagan is Assistant Professor of Political Science at Stanford University and a member-in-residence of Stanford University's Center for International Security and Arms Control.

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Center for International Security and Arms Control
Stanford University
320 Galvez Street
Stanford, California 94305-6165
(415) 723-9625
Douglas Peckler, Editorial Associate

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Civil-Military Relations and Nuclear Weapons

Introduction and Acknowledgements

Scott D. Sagan

When a state develops a nuclear arsenal, these destructive weapons must be initially integrated into existing military forces and initially managed through existing civil and military institutions. The subsequent relationship between nuclear weapons and civil-military relations in possessor states is complex, however, and presents an important two-way puzzle. First, it is important to ask how existing patterns of civil-military relations in nuclear states have influenced the likelihood of nuclear-weapons use. Some scholars believe that military officers are less war-prone and hawkish than civilian leaders; others believe the opposite, that the military tends to be bellicose and biased in favor of aggressive military postures. Which view is right, especially when nuclear weapons are involved, is a question that has not been fully addressed in the literature. Second, it is important to flip the question around and also ask how nuclear weapons have influenced civil-military relations in the states that have acquired the ultimate weapon. Again, the answer is not clear. One might expect that the massive destructive power of these weapons would encourage much greater civilian involvement in military affairs. Yet, at the same time, one might predict that military organizations would maintain significant control over nuclear policy as they want to protect their operational autonomy, and because the perceived need for a prompt response would mitigate against tight civilian control.

In June 1993, an international group of scholars met at Stanford's Center for International Security and Arms Control to examine these puzzles through a series of analytic and comparative case-studies of the experience of nuclear-weapons states. The subject we examined is of both scholarly interest and current policy concern. It is of interest to political scientists and historians since the essays illuminate a central and under-explored aspect of our experience with nuclear weapons. The essays collected here are also relevant to current policy issues, however, in at least two basic ways. First, the papers examine alternative policies for improving civil-military relations concerning nuclear policy in the existing nuclear powers, since it is by no means clear that each state has done an adequate job in balancing political needs for tight control with military requirements for some degree of professional autonomy. Second, by contrasting the successes and failures of various governments in the past, the collection seeks to illuminate a central danger of nuclear-weapons proliferation in the future: the acquisition of nuclear weapons by countries that display unstable patterns of civil-military relations. How dangerous is such a development?

The individual papers that follow certainly do not solve all of these puzzles nor was there an attempt to reach a consensus or final position among the group of independent scholars. Nor does the collection cover every nuclear state. Individual papers have examined a set of issues related to nuclear weapons and civil-military relations in the United States (Sagan), Russia (Sutyagin), Great Britain (Scott), France (Cohen), Ukraine (Miller), and India and Pakistan (Lavoy). We hope that other scholars will be encouraged to make civil-military relations and the nuclear experience of the other powers—such as China, Israel, and South Africa—the subject of future research efforts.

Nuclear history is a sensitive subject in all nuclear states and much information is kept highly classified. These essays, however, carefully culled existing theories and sources and have shed light on both the nuclear sword and the nuclear scepter. Each of the authors attempts to show how the power and interests of military and civilian officials interacted to produce important nuclear-policy decisions.

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The Perils Of Proliferation: Organization Theory, Deterrence Theory, And The Spread Of Nuclear Weapons

Scott D. Sagan
Department of Political Science, Stanford University, Stanford, California

An apparent contradiction lies at the center of our understandings about nuclear weapons and deterrence. On the one hand, it is widely believed that nuclear weapons were an important factor in maintaining the "long peace" between the United States and the Soviet Union during the Cold War. The two superpowers avoided war despite a deep geopolitical rivalry, repeated crises, and a prolonged arms race. On the other hand, it is widely believed that the continuing spread of nuclear weapons will greatly increase the risks of nuclear war. New nuclear powers, with similar characteristics of rivalry, are considered unlikely to maintain stable deterrence.

A prominent group of political scientists have pointed to the apparent contradiction between a peaceful nuclear past and a fearful nuclear future and argue that the further spread of nuclear weapons will be a stabilizing factor in international relations. Kenneth Waltz's 1981 monograph—*The Spread of Nuclear Weapons: More May Be Better*—presented the first detailed and forceful set of arguments in favor of proliferation.[1] Since that time a significant number of rational choice and neorealist political scientists have jumped onto the pro-proliferation bandwagon. Bruce Bueno de Mesquita and William Riker advocate spreading nuclear weapons into areas where non-nuclear states face nuclear-armed adversaries since "the chance of bilateral conflict becoming nuclear...decreases to zero when all nations are nuclear armed."[2] John Mearsheimer believes that "nuclear weapons are a superb deterrent" and argues that both Germany and Ukraine should be encouraged to become nuclear powers in the post-Cold War era.[3] Other neorealist scholars reach similar conclusions: Stephen Van Evera calls for German acquisition of a nuclear arsenal to deter Russia; Barry Posen recommends that Ukraine should keep nuclear weapons as a deterrent against Russian military intervention; Peter Lavoy predicts that nuclear weapons will prevent future wars between India and Pakistan; and Shai Feldman argues that nuclear proliferation in the Middle East can stabilize the Arab-Israeli conflict.[4] The logic of this "proliferation optimist" position flows easily from the expected-utility assumptions of

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This paper also appears, in a slighly different form, in *International Security*, volume 18, number 4 (Spring 1994). A longer piece, building on this analysis, will appear in Scott D. Sagan and Kenneth W. Waltz, *The Spread of Nuclear Weapons: A Debate* (W.W. Norton, forthcoming 1995).
For helpful comments I thank Richard Betts, George Bunn, Michael Desch, Lynn Eden, Peter Feaver, Neil Joeck, Sean Lynn-Jones, John Mearsheimer, George Perkovich, William Potter, and Jessica Stern.

rational deterrence theory: the possession of nuclear weapons by two powers reduces the likelihood of war precisely because it makes the costs of war so great.

Such optimistic views of the effects of nuclear proliferation have not escaped criticism, of course, and a number of scholars have argued that nuclear deterrence may not be stable in specific regional settings.[5] What is missing in this literature, however, is an alternative *theory* of the consequences of nuclear proliferation: a broader conception of the effects of nuclear weapons proliferation on the likelihood of war. This article presents such an alternative, rooted in organization theory, which leads to a far more pessimistic assessment of the future prospects for peace. There are two central arguments. First, I argue that professional military organizations—because of common biases, inflexible routines, and parochial interests—display strong proclivities toward organizational behaviors that lead to deterrence failures. Unlike the widespread psychological critique of rational deterrence theory—which maintains that many political leaders lack the cognitive capabilities or emotional stability to make deterrence work[6]—this organizational critique argues that professional military organizations, if left on their own, are unlikely to fulfill the operational requirements for rational nuclear deterrence.

Second, I argue that such organizational proclivities can be effectively countered only by tight and sustained civilian control of the military. Unfortunately, there are strong reasons to believe that future nuclear-armed states will lack such positive mechanisms of civilian control. Many current and emerging proliferators have either military-run governments or weak civilian-led governments in which the professional military has a strong and direct influence on policy-making. In such states, the biases, routines, and parochial interests of powerful military organizations, not the "objective" interests of the state, can determine state behavior. These problems can be compounded by the fact that such militaries are "inward-looking," focusing on internal issues of domestic stability and politics, rather than on external threats to national security. Extensive military involvement in domestic affairs, however, changes the focus of officers' energies and interests, and the military's professional competence as a fighting force (and therefore also as a deterrent) suffers.[7] Finally, some new nuclear states have been "born nuclear": Ukraine, Belarus, and Kazakhstan inherited nuclear weapons from the Soviet Union, without inheriting its stable civil-military relations, historical learning experience, or extensive command and control mechanisms.

What are the likely effects of the spread of nuclear weapons? My argument proceeds in three steps. First, I contrast the assumptions and logic of proliferation optimists to the assumptions and logic of a more pessimistic organizational-level approach to nuclear proliferation. Next, in the body of the article, I compare the two theories' predictions about three major operational requirements of deterrence and then present the existing empirical evidence concerning each requirement. Finally, the conclusions present some lessons for international relations theory and some observations about current U.S. non-proliferation policy.

Rational Deterrence Theory and Organization Theory

The influential writings of Kenneth Waltz are the most clear and confident expressions of faith in rational nuclear deterrence. "Nuclear weapons have been given a bad name," Waltz maintains:

> Because catastrophic outcomes of nuclear exchanges are easy to imagine, leaders of states will shrink in horror from initiating them. With nuclear weapons, stability and peace rest on easy calculations of what one country can do to another. Anyone—political leader or man in the street—can see that catastrophe lurks if events spiral out of control and nuclear warheads begin to fly.[8]

Given that the costs of nuclear war are so high, even a small risk of war can deter in Waltz's world. Because "a nation will be deterred from attacking even if it believes that there is only a possibility that its adversary will retaliate," Waltz maintains that "the probability of major war among states having nuclear weapons approaches zero."[9] If this is true, then the spread of nuclear weapons should have very positive consequences:

> Nuclear weapons, responsibly used, make wars hard to start. Nations that have nuclear weapons have strong incentives to use them responsibly. These statements hold true for small as for big nuclear powers. Because they do, the measured spread of nuclear weapons is more to be welcomed than feared.[10]

Waltz writes with disdain about what he calls the "ethnocentric views" of psychological critics of deterrence: "many Westerners who write fearfully of a future in which third-world countries have nuclear weapons seem to view their people in the once familiar imperial manner as `lesser breeds without the law.'"[11] For nuclear deterrence to work, he argues, decision-makers in new proliferators need not make intricate rational calculations about every policy decision: it is sufficient that statesmen are highly "sensitive to costs," a requirement, Waltz acknowledges, "which for convenience can be called an assumption of rationality."[12] When costs are so high, sensitivity is easy. Indeed, choosing the most extreme case, Waltz insists that even Nazi Germany would not have used nuclear weapons: "Hitler would almost surely have been deterred from acting in ways that immediately threatened massive death and widespread destruction in Germany" if all major powers had possessed nuclear weapons in 1939; if a conventional war broke out anyway, the allied powers would then have been deterred from marching on Berlin in 1945 because of the fear of desperate German nuclear retaliation.[13] In short, deterrence is not difficult: "One need not become preoccupied with the characteristics of the state that is to be deterred or scrutinize its leaders," Waltz insists, since "in a nuclear world *any state* will be deterred by another state's second-strike forces."[14]

Within the rational deterrence framework, three major requirements for stable nuclear deterrence exist: 1) there must not be a preventive war during the transition period when one state has nuclear weapons and the other state is building, but has not yet achieved, a nuclear capability; 2) both states must develop, not just the ability to inflict unacceptable damage to the other side, but also a sufficient degree of "second-strike" invulnerability so that their forces could retaliate if attacked first; and 3) the nuclear arsenals must not be prone to accidental or unauthorized use. Nuclear optimists believe that nuclear states will meet these requirements because it is in these states' obvious interests to do so. This is, as I will show, a very problematic belief.

An Organizational Perspective

The assumption that states behave in a basically rational manner, pursuing their interests according to expected-utility theory, is of course an assumption, not an empirically tested insight. International Relations scholars often assume high degrees of rationality, not because it is accurate, but because it is helpful: it provides a relatively simple way of making predictions, by linking perceived interests with expected behavior. The rational unitary actor view is clearly not the only one possible, however, and it is not the only set of assumptions that leads to interesting predictions about nuclear proliferation.

A more realistic set of assumptions views government leaders as intending to behave rationally, yet envisions their beliefs, the options available to them, and the final implementation of their decisions as being influenced by powerful organizational actors. If this is the case, organization theory should be useful for the study of the consequences of proliferation. This is important, since such an organizational perspective challenges the central assumption that states are unitary actors behaving in a self-interested manner.

Two widespread themes in the organization theory literature focus attention on the major impediments to pure rationality in organizational behavior. First, large organizations function within a severely "bounded" form of rationality: they have inherent limits on calculation and coordination and use simplifying mechanisms to understand and respond to uncertainty in the external environment.[15] Organizations, by necessity, develop routines to coordinate action among different units: standard operating procedures and organizational rules, not individually reasoned decisions, therefore govern behavior. Organizations commonly satisfice: rather than searching for the policy that maximizes their utility, they often accept the first option that is minimally satisfying. Organizations are often myopic: instead of surveying the entire environment for information, organizational members have biased searches, focusing only on specific areas stemming from their past experience, recent training, and current responsibility. Organizations suffer from "goal displacement": they often become fixated on the operational means to the ends and lose focus on their overall objectives.[16] Organizational filters continually shape the beliefs and actions of individuals. As James March and Herbert Simon put it, "the world tends to be perceived by the organization members in terms of the particular concepts that are reflected in the organization's vocabulary. The particular categories it employs are reified, and become, for members of the organization, attributes of the world rather than mere conventions."[17]

Second, complex organizations commonly have multiple, conflicting goals and the process by which objectives are chosen and pursued is intensely political.[18] From such a political perspective, apparently irrational behaviors are seen as serving the narrow interests of some units within the organization, even if the actions appear "systematically stupid" from the leadership's overall perspective.[19] Organizations are not simply tools in the hands of higher-level authorities, but are groups of self-interested and competitive sub-units and actors. "Theory should see conflict as an inevitable part of organizational life stemming from organizational characteristics rather than from the characteristics of individuals," Charles Perrow has argued: organizational divisions and responsibilities help explain why "sales and production [are] in conflict in all firms...or faculty and administration in colleges, doctors and nurses and administrators in hospitals, the treatment and custodial staffs in prisons."[20] In military organizations, weapon-system operators often have different interests than their commanders, units in the field have different interests than the command headquarters, a particular service has different interests than the Joint Chiefs of Staff. Even

when a professional military service or command acts in relatively rational ways to maximize *its* interests—protecting its power, size, autonomy, or organizational essence—such actions do not necessarily reflect the organizational interests of the military as a whole, much less the national interests of the state. To the degree that narrow organizational interests determine state behavior, the expected-utility theory of a rational unitary actor is seriously undermined.

Although organization theory has been highly useful in a number of substantive areas of international relations—illuminating crisis behavior, alliance politics, weapons procurement, military doctrine, and nuclear weapons safety[21]—it has not been used extensively to study the consequences of proliferation. This is unfortunate, since each of the three operational requirements for rational deterrence appear in a different light when viewed from an organizational perspective. What are professional military views about preventive war; could such views influence the probability of a nuclear attack during the transition period of an early arms race? What is the likelihood that professional militaries will develop and deploy survivable nuclear forces to maintain stable deterrence? What is the likely influence of the structures and biases of military organizations on the prevention of accidental and unauthorized uses of nuclear weapons in new proliferating states?

The next section presents predictions and empirical evidence concerning the three operational requirements for stable nuclear deterrence. In each section, I first contrast the predictions made by nuclear optimists to the predictions deduced from an organizational approach. I then present two kinds of evidence. The evidence from the U.S. case will be given first, both because there is more evidence available on American nuclear weapons operations and because the United States should be considered a tough test of this approach, since it is widely considered to have a highly professionalized military under a strong and institutionalized system of civilian control. The currently available evidence about the nuclear weapons activities of new proliferants is then presented. Both kinds of evidence provide support for a pessimistic conclusion about the consequences of the spread of nuclear weapons.

Preventive War in the Transition Period

The first operational requirement of mutual nuclear deterrence between two powers concerns the transition period between a conventional world and a nuclear world: the first state to acquire weapons must not attack its rival, in a preventive war now, in order to avoid the risk of a worse war later, after the second state has acquired a large nuclear arsenal.[22] There are two periods in a nuclear arms race, according to Waltz, during which a state might consider a preventive strike: when its rival is developing, but has not yet constructed a bomb, and when the size of the rival's nascent arsenal is extremely small. Waltz maintains that a preventive strike might seem to make sense "during the first stage of nuclear development [since] a state could strike without fearing that the country it attacked would return a nuclear blow." Yet, he insists that such attacks are unlikely, because it would not be in a state's longer-term interests:

> But would one strike so hard as to destroy the very potential for future nuclear development? If not, the country struck could simply resume its nuclear career. If the blow struck is less than devastating, one must be prepared to repeat it or to occupy and control the country. To do either would be difficult and costly.[23]

Later, once an adversary has developed even a *suspected* nuclear capability, all rational incentives for preventive war are off. "Preventive strikes against states that have, or *may have*, nuclear weapons are hard to imagine," Waltz insists. "To know *for sure* that the country attacked has not already produced or otherwise acquired some deliverable warheads becomes increasingly difficult" over time.[24] A little uncertainty goes a long way in Waltz's world: if there is even a remote chance of nuclear retaliation, a rational decision-maker will not launch a preventive war.

An organizational perspective, however, leads to a more pessimistic assessment of the likelihood of nuclear preventive wars, because it draws attention to military biases in favor of such attacks. This argument may appear counter-intuitive, since Richard Betts' work has led to a widespread belief among political scientists that military leaders are *not* more likely than civilians to recommend the use of military force *in general* during crises.[25] Yet, there are four strong reasons to expect that military officers are predisposed to view *preventive war* in particular in a much more favorable light than are civilian authorities.[26] First, military officers, because of self-selection into the profession and socialization afterwards, are more inclined than the rest of the population to see war as likely in the near term and inevitable in the long run.[27] The professional focus of attention on warfare also makes military officers skeptical of non-military alternatives to war, while civilian leaders often place stronger hopes on diplomatic and economic methods of long-term conflict resolution.[28] Such beliefs make military officers particularly susceptible to "better now than later" logic. Second, officers are trained to focus on pure military logic when analyzing security problems. Diplomatic, moral, or domestic political inhibitions against preventive war options are therefore less likely to be influential. Third, military officers display strong biases in favor of offensive doctrines and decisive operations.[29] Offensive doctrines enable military organizations to take the initiative, utilizing their standard plans under conditions they control while forcing adversaries to react to their favored strategies. Decisive operations utilize the principle of mass, may reduce casualties, and are more likely to lead to a military decision rather than a political stalemate. Preventive war would clearly have these desired characteristics. Finally, the military, like many organizations, tends to plan incrementally, leading it to focus on immediate plans for war and not the subsequent problems of managing the post-war world. Moreover, managing the post-war world is the diplomats' job, not part of military officers' operational responsibility. The professional military is likely therefore to be short-sighted, not examining the long-term political and diplomatic consequences of preventive war. In theory, these factors should make military officers stronger advocates of preventive war.

Evidence on Preventive War from the U.S. Case

What differences existed between U.S. civilian and military advice on the use of nuclear weapons during the early Cold War? During major crises, few disagreements emerged. For example, after the Chinese military intervention in the Korean War in late November 1950, both Truman's senior military and civilian advisors recommended against the use of the atomic bomb on the Korean peninsula.[30] If one focuses specifically on the issue of *preventive war*, however, strong differences between civilian and military opinions can be seen. During

both the Truman and Eisenhower administrations, senior U.S. military officers seriously advocated preventive war options and, in both cases, continued favoring such ideas well after civilian leaders ruled against them.

Although U.S. military officers were not alone in recommending preventive war during the Truman Administration—as diverse a set of individuals as philosopher Bertrand Russell, mathematician John Von Neumann, and Navy Secretary Francis Matthews called for such a policy—within the government, military leaders were clearly the predominant and most persistent advocates.[31] The Joint Chiefs of Staff (JCS) were quite direct in their advocacy of preventive options, calling for the "readiness and determination to take prompt and effective military action abroad to *anticipate and prevent attack*" in their September 1945 top-secret report on post-war U.S. military policy: "When it becomes evident that forces of aggression are being arrayed against us by a potential enemy, we cannot afford, through any misguided and perilous idea of avoiding an aggressive attitude to permit the first blow to be struck against us."[32] Truman appears to have rejected the whole concept of preventive war rather quickly, however, largely on moral and domestic political grounds. "We do not believe in aggression or preventive war," he announced in a public broadcast in 1950: "Such a war is the weapon of dictators, not of free democratic countries like the United States."[33]

The issue was not thoroughly addressed at the highest levels, however, until April 1950, when NSC-68 presented three key arguments against preventive war. First, intelligence estimates suggested that a U.S. atomic attack on the USSR "would not force or induce the Kremlin to capitulate and that the Kremlin would still be able to use the forces under its control to dominate most or all of Eurasia." Second, a preventive attack "would be repugnant to many Americans" and therefore difficult to justify at home. Third, U.S. allies, especially in Western Europe, would share such beliefs, hurting U.S. relations with them and making it "difficult after such a war to create satisfactory international order." The conclusion was clear: "These considerations are no less weighty because they are imponderable, and they rule out an attack unless it is demonstrably in the nature of a counter-attack to a blow which is on its way or about to be delivered."[34]

Senior Air Force leaders were very cautious about discussing preventive nuclear war in public after that, with the exception of Major General Orvil Anderson, the commandant of the Air War College, whom Truman fired in September 1950 for advocating preventive war to the press.[35] Yet, military support for preventive options remained high. Generals George Kenney, Curtis LeMay, Thomas Power, Nathan Twining, Thomas White, and Hoyt Vandenberg all privately expressed sympathy for preventive war and official Air Force doctrine manuals continued to support preventive war ideas.[36] There was, nevertheless, no high-level reconsideration of basic national policy under Truman.

Serious discussions of preventive war options reemerged at the highest levels of the U.S. government during the first two years of the Eisenhower Administration. Throughout the new administration's reevaluation of U.S. security strategy, senior military officers again supported preventive options. The U.S. Air War College, for example, produced the extensive "Project Control" study in 1953 and 1954, which advocated preventive war if necessary.[37] The study called for taking direct control of Soviet airspace and threatening massive bombing unless the Kremlin agreed to an ultimatum to withdraw troops from Eastern Europe, dissolve the Cominform, and abandon the Sino-Soviet alliance. Project Control was greeted with enthusiasm when it was briefed to Chairman of the Joint Chiefs of Staff Admiral Arthur Radford in July 1954, though State Department officials complained that such schemes were "simply another version of preventive war."[38] In addition, Eisenhower

himself was briefed on a JCS Advanced Study Group report in mid-1954 which, according to a contemporary memorandum on the report, "pointed unmistakably to an advocacy of the US deliberately precipitating war with the USSR in the near future - that is before the USSR could achieve a large enough thermo-nuclear capability to be a real menace to the Continental US."[39]

The most extreme preventive war arguments by a senior officer, however, can be found in General Twining's August 1953 memorandum to the JCS on "The Coming National Crisis," which would occur, he maintained, when the USSR developed sufficient nuclear forces so that "our military establishment would be unable to insure the survival of our nation":

> Prior to entering the second period of time [when the Soviet Union could destroy the U.S.] if our objectives have not been achieved by means short of general war, it will be necessary to adopt other measures. We must recognize this time of decision, or, we will continue blindly down a suicidal path and arrive at a situation in which we will have entrusted our survival to the whims of a small group of proven barbarians. If we believe it unsafe, unwise, or immoral to gamble that the enemy will tolerate our existence under this circumstance, we must be militarily prepared to support such decisions as might involve general war.[40]

The Joint Chiefs final position was much more calm in tone, though it too displayed "better now than later" logic. While acknowledging that official U.S. policy prohibited preventive war, Admiral Radford told the National Security Council in November 1954 that "if we continue to pursue a policy of simply reacting to Communist initiatives, instead of a policy of forestalling Communist action, we cannot hope for anything but a showdown with Soviet Communists by 1959 or 1960," adding ominously that the JCS could "guarantee" a successful outcome in a nuclear war only if it occurred "prior to Soviet achievement of atomic plenty."[41]

Why did Eisenhower reject this line of thinking? He clearly did not object to preventive war on moral grounds.[42] Instead, his eventual rejection of preventive war appears to have be determined by his increasing belief that a preventive nuclear attack on the USSR would be too costly to the U.S., *even if it succeeded* in the sense of preventing large-scale U.S. casualties. The political and human costs of maintaining control over a decimated Soviet society were appalling to Eisenhower. As he told a group of officers in June 1954:

> No matter how well prepared for war we may be, no matter how certain we are that within 24 hours we could destroy Kuibyshev and Moscow and Leningrad and Baku and all the other places that would allow the Soviets to carry on war, I want you to carry this question home with you: Gain such a victory, and what do you do with it? Here would be a great area from the Elbe to Vladivostok and down through Southeast Asia torn up and destroyed without government, without its communications, just an area of starvation and disaster. I ask you what would the civilized world do about it? I repeat there is no victory in any war except through our imaginations, through our dedication, and through our work to avoid it.[43]

Preventive War Among Proliferators

The evidence presented here does *not* demonstrate that the United States almost launched a preventive war on the USSR in the early Cold War period. Nor do I mean to suggest that civilian leaders could never rationally choose to launch a preventive attack.[44] This evidence does strongly suggest, however, that military officers have strong proclivities in favor of preventive war and that nuclear optimists are therefore wrong to assume that *any* leader of a state will be automatically deterred by an adversary's small arsenal, or even the mere possibility of such an arsenal. While preventive nuclear strikes may be hard for some scholars to imagine, such attacks were clearly imagined, actively planned, and vigorously advocated by senior U.S. military leaders, well beyond the initial development of nuclear weapons by the USSR.[45] Without Truman's and Eisenhower's broader mix of moral and political objections to preventive war, the narrow military logic in favor of such an option might have prevailed.[46]

The "better now than later" logic of preventive war is likely to be considered seriously whenever an existing nuclear power sees a rival developing a nuclear arsenal. Preventive war is more likely to be chosen, however, if military leaders have a significant degree of influence over the final decision. While there have not been, obviously, any nuclear preventive wars among the new proliferants, the probability of such attacks will increase since civilian control over the military is more problematic in many of these states.

Pakistan is the most dramatic case in point, since a rapid development of a Pakistani operational nuclear arsenal could create a temporary nuclear superiority over India, which apparently refrained from building an arsenal after its 1974 nuclear test.[47] Military biases in favor of preventive war are highly influential in Pakistan, where the military has been in direct control of the government for more than half of the state's history. Indeed, Pakistani military leaders have repeatedly advocated and initiated preventive war against India. In the fall of 1962, senior military authorities unsuccessfully urged President Mohammed Ayub Khan, the leader of the military-controlled government, to attack India while its army was tied down in the conflict with China.[48] Three years later, in September 1965, the Ayub government did launch a preventive war on India in an effort to conquer Kashmir before the anticipated Indian military build-up was completed.[49] The Pakistani attack on India in December 1971 was also strongly influenced by the parochial biases and organizational interests of senior army and air force leaders since, as Richard Sisson and Leo Rose have stressed, the ruling military viewed threats to Bengal as "threats to their image, threats to the welfare of the military in a successor state, and threats in the way of charges that the military was prepared to barter away Pakistani sovereignty."[50] Finally, the unconfirmed reports that the Pakistan Air Force made initial preparations for a nuclear first-strike during the May 1990 crisis over Kashmir are alarming, not only because of the potential for miscalculated escalation, but also because Pakistani Prime Minister Benazir Bhutto was reportedly cut out of the dangerous crisis decision-making.[51] Later in 1990, the Bhutto regime was ousted by the Pakistan military after she attempted to push her own loyal candidate into the Army Chief of Staff position.[52] There is, unfortunately, little reason to assume that future Pakistani governments, even if nominally democratic in nature, will be entirely resistant to parochial military pressures.[53]

The possible maintenance of a nuclear arsenal by Ukraine is a second example which should raise fears of the possibility of preventive war. From a broad organizational perspective, it is very worrisome that Ukraine has yet to develop stable civil-military

relations and that officers in Kiev, alarmed over their loss of status and decreasing living standards, have repeatedly threatened "to resort to extreme measures" if their social demands are not satisfied.[54] Given the vast Russian military superiority over Ukraine, however, the great uncertainty about future Russian civil-military relations is also alarming. Soon after the break-up of the Soviet Union, Russian papers reported that Russian President Yeltsin privately discussed the idea of a "preventive nuclear strike" against Ukraine, but ruled against any such attack.[55] If future Russian-Ukrainian relations ever deteriorate to the point where armed conflict is seriously considered, military pressure on the Russian government to attack any nuclear weapons remaining in the Ukraine, before they could be readied for possibly use by the Kiev government, could be significant.

Nuclear optimists dismiss this possibility. Mearsheimer, for example, maintains that "military calculations alone should suffice to deter the Russians from launching a preventive war": "The probability of Ukrainian nuclear retaliation would be small, but the Russians could never be sure that Ukraine would not launch some nuclear weapons back at them, causing cataclysmic damage, even if the retaliation was ragged."[56] Posen is similarly sanguine about what would occur if the Ukrainians tried to seize all the nuclear weapons on their soil: "this would be a novel kind of nuclear crisis, but it would probably be enough of a crisis to produce the prudent behavior among nuclear powers that existed during the Cold War."[57]

Leaving aside the question of whether the superpowers always exhibited "prudent behavior" in Cold War crises, there are several reasons to be concerned about whether a future Russian government would be deterred from preventive attacks under all circumstances. First, because of its previous custody of the Soviet arsenal, Moscow would know the location of Ukrainian weapons, and the operational details of their alerting procedures and command and control networks.[58] Second, the evidence from the only historical precedent—the discussions held in Moscow in 1969 on whether to launch a preventive strike on Chinese nuclear forces—is hardly reassuring, since the Minister of Defense reportedly favored a preventive attack despite the existence of a small Chinese nuclear arsenal. Preparations for a possible strike went as far as a country-wide air force alert and operational military exercises, including mock bombing runs against targets designed to resemble Chinese nuclear facilities, but the Politburo did not approve of an attack, in part because the United States made it clear that it would strongly oppose such action.[59] Finally, military involvement in politics has increased significantly since the break-up of the USSR, as the Russian military seeks to protect its organizational interests in Russia's ongoing crisis.[60] If the reform movement fails in post-Cold War Russia, and senior military officers continue to enter the political arena in a conservative successor government, their political influence would grow even greater. A likely consequence is more direct military influence on major Russian foreign-policy decisions, including future decisions about preventive war in crises.

The key point is that military views on preventive war often differ significantly from the views of leading civilians. I cannot predict the exact strength of such preventive war pressures or the timing of serious threats of war between future nuclear states. Nevertheless, because civilians will not be in firm control in all future proliferators, there are sufficient reasons to fear that military biases in favor of preventive war will be more likely to prevail than was the case with the superpowers during the Cold War.

Interests, Routines, and Survivable Forces

The second operational requirement of deterrence is that new nuclear powers must build invulnerable second-strike nuclear forces. The United States and the former Soviet Union developed a large and diverse arsenal—long-range bombers, intercontinental ballistic missiles, and submarine-launched missiles—and a complex network of satellite and radar warning systems, to decrease the risks of a successful first strike against their arsenals. Will new nuclear powers also construct invulnerable arsenals? How quickly?

Waltz addresses this issue with two related arguments. First, only a very small number of nuclear weapons are necessary for successful deterrence: since each nuclear warhead contains so much destructive power, "not much is required to deter."[61] Second, no rational nuclear power would permit all of its forces to be vulnerable to an enemy first strike:

> Deterrent forces are seldom delicate because no state wants delicate forces and nuclear forces are easily made sturdy. Nuclear weapons are fairly small and light. They are easy to hide and to move.[62]

In short, Waltz is confident that any state will create the minimum deterrent of an invulnerable second-strike nuclear arsenal. "Because so much explosive power comes in such small packages, the invulnerability of a sufficient number of warheads is easy to achieve and the delivery of fairly large numbers of warheads impossible to thwart, both now and as far into the future as anyone can see."[63]

It is puzzling, however, for a theory that emphasizes the rationality of actors, to note that both superpowers during the Cold War believed that deterrence required much larger forces than the minimum deterrence requirement. Yet, Waltz insists that the belief that such large forces were necessary was the result of "decades of fuzzy thinking" about nuclear deterrence:

> The two principal powers in the system have long had second-strike forces, with neither able to launch a disarming strike against the other. That both nevertheless continue to pile weapon upon unneeded weapon is a puzzle whose solution can be found only within the United States and the Soviet Union.[64]

Yet, if "fuzzy thinking" at the domestic level can cause a state to spend billions of dollars building more forces than are necessary for rational deterrence, couldn't "fuzzy thinking" also lead a state to build inadequate forces? This is clearly possible if one assumes that organizational factors strongly influence state behavior.

Why would professional militaries *not* develop invulnerable nuclear forces if left to their own devices? Four reasons emerge from the logic of organizational theory. First, military bureaucracies, like other organizations, are interested in having more resources: they want more weapons, more men in uniform, more pieces of the budget pie. This could obviously lead to larger than necessary nuclear arsenals. Yet programs for making nuclear arsenals less vulnerable to attack (for example building shelters or missile-carrying trains) are expensive, and therefore *decrease* the resources available for the military hardware, the missiles or aircraft, that the organization values most highly. Second, militaries, like other organizations, have favored traditional ways of doing things and therefore maintain a strong sense of

what Morton Halperin calls organizational "essence."[65] Since efforts to decrease the vulnerability of nuclear forces often require new missions and weapon systems—and, indeed, often new organizational units—one would expect that the existing organizations would be resistant. Third, if organizational plans for war and conceptions of deterrence do not require invulnerable forces, they will not have incentives to pursue them. Thus, if military officers believe that they are likely to engage in preventive war, preemptive attacks, or even launch-on-warning options, then survivability measures may simply be perceived as unnecessary. Fourth, even if the technical requirements for survivability exist, organizational routines could impede invulnerability. Poorly designed standard operating procedures could completely undermine what might otherwise appear to be a survivable military force.

Evidence from the U.S. Case

The history of U.S. nuclear-weapons programs strongly supports these organizational arguments. The United States eventually developed invulnerable second-strike forces, but only after civilian authorities forced reluctant military organizations to deploy new weapons systems and change traditional operational practices. The influence of such factors can be seen in the history of three major weapons developments: the creation of a survivable basing system for strategic bombers in the United States; the development of the submarine-launched ballistic missile (SLBM); and the construction of the intercontinental-range ballistic missile (ICBM).

The first case in point is the development of a survivable basing system for Strategic Air Command (SAC) bombers in the mid-1950s. SAC war plans at the time—based on routines developed during WWII when the air force had not faced threats of air strikes against their long-range bomber bases—called for sending the nuclear retaliatory force to bases on the periphery of the Soviet Union in crises.[66] These overseas bases, however, were highly vulnerable to a surprise Soviet first-strike and, making matters even worse, Air Force regulations required SAC to concentrate the facilities at individual bases to minimize the peacetime costs of utilities, pipelines, and roads.[67] When civilian analysts at the RAND Corporation pointed out the ill-wisdom of such plans, as Bruce Smith has shown, narrow organizational interests produced significant resistance to change. SAC's autonomy was threatened, since "elements within SAC began to fear that the study could be used as an opening wedge for the Air Staff to interfere with internal SAC operations and responsibilities." Moreover, officers feared that "the Air Force could also be embarrassed before Congress" and that "the study could undermine the confidence and morale of their units."[68] The basing study led to radical changes in SAC operational plans, including U.S. basing and in-flight refueling, only after independent civilian RAND analysts did a successful "end-run" around the system, bypassing layers of opposition in SAC and briefing senior Air Force leaders directly.[69]

The U.S. SLBM force has been the least vulnerable component of the strategic arsenal for more than 30 years, yet it is important to note that this weapons system was developed *against* the wishes of the U.S. Navy leadership. The major impediment to development of the Polaris missile system was, as Harvey Sapolsky notes, "the Navy's indecisiveness about sponsoring a ballistic missile program."[70] Senior naval officers were concerned in the early 1950s that, given the Eisenhower Administration's budget cuts, spending on missile programs would come at the expense of more traditional navy programs and insisted that the

Strategic Air Command should pay for sea-based missiles. Even navy submariners were unenthusiastic since "in their view, submarines were meant to sink ships with torpedoes, not to blast land targets with missiles."[71] The program's supporters within the navy eventually were forced to go to a group of civilian outsiders, the Killian Committee, to get endorsement of the program.[72] Without continued high-level civilian intervention, it is not clear whether or when a large-scale SLBM force would have been constructed.[73]

Similar organizational resistance to innovation can be observed in the early history of the U.S. ICBM force. Why did the U.S. Air Force take so long to develop strategic missiles, eventually producing the perceived missile gap crisis? In his compelling study of the missile program, Edmund Beard concludes that "the United States could have developed an ICBM considerably earlier than it did but that such development was hindered by organizational structures and belief patterns that did not permit it."[74] Devotion to manned aircraft, and especially the manned bomber, led to a prolonged period of neglect for ICBM research and development funds. As late as 1956, General Curtis Lemay placed the ICBM as the Air Force's sixth highest priority weapon, with four new aircraft and a cruise-missile program above it; and even within the air force's guided missile branch, air-to-air and air-to-surface missiles (which were to be used to help bombers penetrate to their targets) were given higher priority than intercontinental-range surface-to-surface missiles.[75] Again, civilian intervention was critical: not until the Killian Committee report recommended that ICBMs also be made a national priority, and civilian Pentagon officials threatened to create a separate agency to oversee the program, did the Air Force put adequate funds into ICBM development.[76]

Organizational Impediments to Survivability in New Proliferants

This evidence demonstrates that there are strong organizational reasons to expect that professional militaries, if left on their own, will not necessarily construct an invulnerable nuclear arsenal. Although these organizational constraints may be overcome over time, since survivable forces are clearly in the interests of state leaders, organization theory would predict that the transition to a secure retaliatory force would be especially prolonged in time and imperfect in implementation in states in which civilian control over military organizations is problematic. Although organizational impediments to survivability are likely to take somewhat different forms in different states, evidence does exist which suggests that parochial organizational interests and rigid routines have impeded the development of secure retaliatory forces in the developing world.

The influence of organizational biases on strategic weapons deployments can perhaps best be seen the People's Republic of China.[77] China tested its first nuclear weapon in 1964, yet did not develop a confident and secure second-strike capability until the early 1980s, when initial deployments of ICBMs (1981), SLBMs (1982-3), and mobile and concealed IRBMs (1980) were instituted.[78] Why did China, which developed the atomic and hydrogen bombs very quickly, take so long to develop invulnerable missile-basing modes? The absence of perceived strategic threats is not a plausible answer, since the clashes along the Sino-Soviet border and the subsequent nuclear threats from Moscow occurred in 1969. Indeed, in 1970, U.S. intelligence agencies predicted that China would deploy ICBMs by 1975; and the failure to do so promptly has been described as "a major enigma in the PRC's strategic weapons effort."[79]

While both technical problems and the political turmoil of the Cultural Revolution clearly played roles in the delayed development of Chinese strategic missiles, professional military biases also had an apparent impact in two specific areas. First, it is important to note that the military officers of Second Artillery Division, who controlled the operational missile forces in the 1970s, consistently argued for larger arsenals, but did not independently pursue the survivability measures needed for the existing land-based missiles. Only in 1975, after Mao Zedong approved a weapons-institute report recommending that advanced deception measures be used to make China's medium-range ballistic missiles less vulnerable to Soviet attacks, were successful camouflage and cave-basing deployment methods developed.[80] As was the case in the U.S., high-level intervention by civilian authorities was necessary to encourage operational innovation. Second, the strong bureaucratic power of traditional People's Liberation Army interests in the party and weapons institutes appears to have slowed the development of the Chinese navy's SLBM force. The SLBM and ICBM programs were started at the same time, but land-based systems were consistently given higher priority: the reverse engineering of SLBM missiles supplied by the Soviets was abandoned in 1961, while similar land-based missile programs continued; and in the late 1960s the DF [ICBM] program was considered a "crash effort," while "the JL-1 [SLBM] designers did not feel an immediate or compelling urgency."[81] Thus, while China eventually developed a diverse set of survivable forces, it was a very vulnerable nuclear power for a longer period of time than can be explained by the rationalist assumptions of proliferation optimists.

The influence of parochial organizational interests need not be entirely negative in this area, however, since in some circumstances interservice rivalry could lead to improvements in arsenal survivability. In Pakistan, for example, the army rather than the air force has operational control of missile development and deployments. The Pakistan Army therefore has strong institutional interests in deploying nuclear-capable missiles in order to offset the prestige and political power currently given to the Pakistan Air Force as the only service capable of delivering nuclear weapons against India.[82] *If* such missiles are eventually acquired and deployed in a survivable basing mode, they could reduce the vulnerability of a small Pakistani arsenal.

This is not, however, a small if. For even if adequate forces are deployed, survivability is not ensured unless appropriate operational practices are developed. An illuminating example of how poorly designed organizational procedures and routines can produce "unnecessary" force vulnerabilities was seen in Egyptian Air Force operations in June 1967. Given the balance between the Egyptian and Israeli air forces at the time (Egypt had over a two-to-one advantage in bombers, fighter-bombers, and interceptors[83]), Egyptian authorities had strong reasons to believe that their ability to retaliate against any Israeli air attack was secure. Indeed, President Nassar publicly emphasized that the Israeli "fear of the Egyptian Air Force and bombers" was a deterrent to war when he ordered that the Gulf of Aqaba be closed.[84] Two organizational routines of the Egyptian Air Force, however, created a severe vulnerability for what was "objectively" a sufficient retaliatory force. First, during the crisis, the air force lined up most of its aircraft wing-tip to wing-tip on the runways, making them easier to launch in a first strike, rather than dispersing them to reduce their vulnerability to an Israeli attack.[85] Second, the Egyptians always placed an interceptor force into defensive air patrol positions and held a "stand-to" alert at air bases at dawn, when they believed an Israeli strike was most likely. Both these operations routinely ended at 7:30 am, and, having observed these organizational practices, the Israelis attacked at 7:45 when the planes had

landed and the pilots and crews were having breakfast.[86] What had appeared to be an invulnerable force was thus virtually destroyed in the first hours of the war.

It should be acknowledged that some nuclear optimists do recognize that the spread of nuclear weapons to very small powers may be destabilizing since these states might not have the financial resources to procure hardened ICBMs or ballistic missile submarines, and may lack the territorial space to maintain mobile missiles.[87] This certainly is true. An organizational level argument, however, leads to an even more pessimistic appraisal: even if the economic resources and geographical conditions for survivable forces exist, a state may not develop a secure second-strike capability if organizational biases and inflexible routines of the professional military dominate its behavior on this issue.

Organizations, Accidents, and Proliferation

The final operational requirement for stable deterrence is that nuclear arsenals not be prone to accidental or unauthorized use. Waltz believes that any such dangers are temporary and can be easily fixed:

> All nuclear countries must live through a time when their forces are crudely designed. All countries have so far been able to control them. Relations between the United States and the Soviet Union, and later among the United States, the Soviet Union, and China, were at their bitterest just when their nuclear forces were in early stages of development, were unbalanced, were crude and were presumably hard to control. Why should we expect new nuclear states to experience greater difficulties than the old ones were able to cope with?[88]

Waltz answers his own rhetorical question with a rationalist assumption. It is presumably in the interests of proliferating states to keep their forces under strict control; therefore, they will do so. As he puts it:

> We do not have to wonder whether they will take good care of their weapons. They have every incentive to do so. They will not want to risk retaliation because one or more of their warheads accidently strikes another country.[89]

Other nuclear optimists agree that we should not worry about accidental uses of nuclear weapons in specific proliferating states. "Even if Ukraine were destabilized, the likelihood of nuclear use should not increase substantially," Mearsheimer insists, since "the costs of nuclear war are so great, and so obvious, that all sides in a domestic dispute would have powerful incentives to keep the nuclear arsenal safely stowed away."[90] Van Evera is similarly confident about nuclear weapons safety in Germany since "it has the resources needed to develop an invulnerable deterrent secure from accident and terrorism."[91]

What does organization theory say about the likelihood of nuclear weapons accidents? If one assumes that organizations are highly rational, then they might be able to achieve extremely high reliability in managing hazardous technologies, avoiding serious accidents by following three basic strategies: construct highly redundant systems with numerous back-up safety devices; use trial and error learning to fix organizational problems when they emerge; and develop a "culture of reliability" through strong socialization and discipline of the organization's members.[92] If one assumes that organizations are only boundedly rational and that they contain political conflicts over goals and rewards, however, then a far more pessimistic appraisal is warranted. This approach raises doubts about whether any state can build a large nuclear arsenal that is completely "secure from accident," even if such strategies are followed.

Charles Perrow's *Normal Accidents* argues there are inherent limits to the degree to which any large organization can understand the technical systems it creates to manage hazardous technologies, such as nuclear power plants, petrochemical industries, advanced biotechnology, and oil tankers.[93] If organizations were omniscient, they could anticipate all potential failure modes in their systems and fix them ahead of time. Perrow argues, however, that boundedly rational organizations in the real world will inevitably have serious system accidents over time whenever they exhibit two structural characteristics: high *interactive complexity* (systems containing numerous interrelated, yet unplanned, interactions which are not readily comprehensible) and *tight coupling* (systems with highly time-dependent and invariant production sequences, with limited built-in slack).

My own book, *The Limits of Safety*, adds a more political dimension to "normal accidents theory," which combines with Perrow's structural arguments to produce even greater pessimism about the likelihood of organizational accidents. Conflicting objectives inevitably exist inside any large organization that manages hazardous technology: top-level authorities may place a high priority on safety, but others may place a higher value on more parochial objectives, such as increasing production levels, enhancing the size of their subunit, or promoting their individual careers, all of which can lead to risky behaviors. Such a focus on the political manner in which conflicting goals are chosen and pursued is necessary to explain both why systems with such dangerous structural characteristics are constructed and why organizational learning about safety problems is often severely limited.[94]

Normal accidents theory suggests that each of the three basic strategies used to improve organizational safety is highly problematic. From a structural perspective, adding redundant back-up systems can be counterproductive, since redundancy makes the system both more complex and more opaque and therefore can create hidden common-mode errors. A political perspective notes, however, that organizations often continue to add layers of redundancy upon redundancy to complex systems, in large part because increased redundancy is in the narrow interests of subunits since it can enhance their size, resources, and autonomy. The politics of blame inside organizations also reduces trial-and-error learning from accidents because organizational leaders often find operators at lower levels in the hierarchy at fault, both because this absolves them from responsibility, and because it is usually cheaper to fire the operator than to change accident-prone procedures or structures. Knowing this, however, field-level operators have great incentives not to report safety incidents. Finally, from a normal accidents perspective, strong culture and socialization can have negative effects on organizational reliability since they encourage excessive concern about the organization's reputation, disdain for outsiders' and internal dissenters' opinions, and even organizational cover-ups.

The U.S. Nuclear Safety Experience

From the perspective of normal accidents theory, there are strong reasons to expect that the safety of modern nuclear arsenals is inherently limited: large-scale arsenals and command systems are highly complex, by necessity, and are tightly coupled, by design, to ensure prompt retaliation under attack; the military organizations that manage them are inevitably politicized, with numerous conflicting interests existing between commands and the broader society and within the organizations themselves. How serious were the dangers of U.S. nuclear-weapons accidents and even accidental war during the Cold War? The available evidence now demonstrates that there were many more near-accidents than previously recognized. Moreover, the U.S. military's reaction to these safety problems shows how only limited degrees of organizational learning took place.

New information on dangerous military operations during the October 1962 Cuban missile crisis demonstrates these points.[95] At the start of the crisis, the Strategic Air Command secretly deployed nuclear warheads on nine of the ten test ICBMs in place at Vandenberg Air Force Base and then launched the tenth missile, on a prescheduled ICBM test, over the Pacific. No one within the responsible organizations thought through the risks that Soviet intelligence might learn of the nuclear weapons deployment and the alert at Vandenberg and then, in the tension of the crisis, misinterpret a missile launch from that base. A second safety problem occurred at Malmstrom Air Force Base in Montana at the height of the crisis, when officers jury-rigged their Minuteman missiles to give themselves the independent ability to launch missiles immediately. This was a serious violation of the Minuteman safety rules, but when an investigation took place after the crisis, the evidence was altered to prevent higher authorities from learning that officers had given themselves the ability to launch unauthorized missile attacks. A third incident occurred on October 28, when the North American Air Defense Command (NORAD) was informed that a nuclear-armed missile had been launched from Cuba and was about to hit Tampa, Florida. Only after the expected detonation failed to occur was it discovered that a radar operator had inserted a test tape simulating an attack from Cuba into the system, confusing control-room officers who thought the simulation was a real attack.

Learning from these incidents was minimal: the relevant military procedures and routines were *not* altered after each of these incidents. In each case, the existence of serious safety problems was not reported to or was not recognized by higher authorities. Each one of the accident-prone nuclear operations was therefore repeated by U.S. military commands in October 1973, during the brief U.S. nuclear alert during the Arab-Israeli war.[96]

The history of SAC's B-52 monitor mission at Thule, Greenland, provides a useful example of how adding redundant safety devices to a complex system can inadvertently cause the accidents they are designed to prevent.[97] The United States responded to the Soviet development of an ICBM force in the late 1950s, by building the Ballistic Missile Early Warning System (BMEWS) radars and developing plans to launch the vulnerable strategic bomber force upon warning. SAC, however, faced a serious problem: if the radar links went dead, would it mean that communications had failed or that a Soviet nuclear attack had started? To make sure that such ambiguity was clarified, NORAD placed radio-equipped "bomb alarm" sensors at the Thule BMEWS base. Yet, SAC wanted to be absolutely sure that it got accurate warning (and wanted to control the means of that warning itself), and therefore also placed a B-52 bomber in a continual orbit over the Thule base, where it could determine whether or not a Soviet attack had begun. The bombers on what became a routine

monitor mission were, however, part of the airborne alert force and therefore had thermonuclear weapons on board. No one in the Pentagon or SAC headquarters imagined the possibility that the plane might crash and that an accidental detonation would occur, which would have produced false confirming evidence that a Soviet nuclear attack had occurred.[98] The risks of such an accident were not negligible, however, and even after a series of B-52 bomber crashes led civilians to cancel the airborne alert program in 1968, SAC continued to plan to fly nuclear armed B-52s above the Thule BMEWS base in future crises.

Proliferation and Nuclear Weapons Safety

Waltz asked: why should we expect new nuclear states to experience greater difficulties than the old ones? The evidence of the number of near-accidents with U.S. nuclear weapons during the Cold War suggests that there would be reason enough to worry about nuclear accidents in new proliferant states even if their safety difficulties were "only" as great as those experienced by old nuclear powers. Unfortunately, there are also at least six reasons to expect that new nuclear states will face much greater risks of nuclear accidents.

First, some emergent nuclear powers lack the organizational and financial resources to produce even minimal mechanical safety devices and safe-weapons design features. Although all countries may start with "crude nuclear arsenals," in Waltz's terms, the weapons of poorer states will likely be more crude, and will remain so for a longer period of time. Evidence for this prediction can be found in the case of the Iraqi nuclear-weapons program, as UN inspectors discovered soon after the 1991 Persian Gulf War:

> The inspectors found out one other thing about the Iraqi bomb [design] - it is highly unstable. The design calls for cramming so much weapon-grade uranium into the core, they say, that the bomb would inevitably be on the verge of going off - even while sitting on the workbench. 'It could go off if a rifle bullet hit it,' one inspector says, adding: 'I wouldn't want to be around if it fell off the edge of this desk.'[99]

Second, the "opaque" nature of nuclear proliferation in the contemporary world exacerbates nuclear-weapons safety problems. Fearing the international diplomatic consequences of a public crossing of the nuclear threshold, most new proliferants have developed weapons capabilities in a covert manner. Israel, South Africa, Pakistan, and possibly North Korea fit this pattern. There are, however, both organizational and technical reasons to believe that this opaque path to nuclear-weapons status is inherently less safe: the tighter compartmentalization of such programs means that there is likely to be less thorough monitoring of safety efforts; the lack of public debate about nuclear issues in such states increases the likelihood that military organizational interests will not be challenged; and the inability to have full-scale nuclear-weapons tests will inhibit safety design efforts.[100]

Third, accident-prone nuclear operations will be more prevalent in states with volatile civil-military relations because military officers, who have organizational biases in favor of maintaining high readiness for war, will be less constrained by more safety-conscious civilian authorities.[101] Pakistan is the most worrisome case in point. The Pakistan Air Force plans to use U.S. F-16 aircraft in nuclear-weapons delivery roles if necessary, and yet in 1992 former Director of Central Intelligence Robert Gates suggested that Pakistan had not perfected the electrical mechanisms to permit safe maintenance, transportation, and delivery of weapons

by F-16s.[102] The existence of such safety problems makes the reports that the Pakistani air force, without informing Prime Minister Bhutto, loaded nuclear weapons on its F-16 aircraft during the 1990 Kashmir crisis even more alarming than previously recognized.[103]

Fourth, the tight-coupling problem will be significantly worse between most new proliferants, at the beginning of their experience in managing nuclear weapons, since they are in closer proximity to their expected adversaries than was the case between the United States and the Soviet Union. At the start of the Cold War, the superpowers had many hours to determine whether warnings were real or false during the strategic bomber era; later, in the 1960s, they had approximately 30 minutes to react to reports of ICBM attacks; and only after many years of experience with nuclear arsenals did they have fewer than 10 minutes of warning time once missile submarines were deployed off each other's coasts in the 1970s. New and potential future nuclear rivals—Russia and Ukraine, India and Pakistan, North and South Korea—will immediately have very small margins of error, at the outset of nuclear rivalries, since they have contiguous borders. Moreover, the poorer of these states are likely to have less reliable warning systems trying to operate successfully in this more challenging environment.

Fifth, although organizational learning about safe nuclear-weapons operations was far from perfect in the United States and the Soviet Union during the Cold War, it is likely to be even worse in states that inherited a full-scale nuclear arsenal without going through the incremental process of tests, exercises, and deployments. The emerging problems of nuclear safety in the Ukraine appear to be the product of its unusual status as an "instant" nuclear power. In September 1993, Major General Vitaly Yakovlev of the Russian Defense Ministry reported that a squad of Russian nuclear-warhead specialists had been sent to the Ukrainian nuclear-ammunition depot at Pervomaisk (170 miles south of Kiev) because increased radiation levels had been discovered inside the base. According to Moscow press reports, a subsequent investigation by Russian nuclear scientists determined that "Ukrainian storage depots were filled over capacity, necessary maintenance was not being carried out, rules for transporting warheads were being ignored and up-to-date safety systems were absent."[104] In October 1993, Colonel General Yevgeny Maslin, chief of the Russian General Staff's nuclear ammunition department, reported that two nuclear warheads, which were emitting dangerous levels of radioactivity, had been kept for two weeks inside a railroad car on the Ukraine-Russian border, because Ukrainian custom officials demanded payment for any nuclear weapons taken to Russia for dismantlement.[105] Such nuclear safety problems may be the first signs that serious dangers of nuclear-weapons accidents are looming in the Soviet successor states.

Sixth, serious political and social unrest is likely in the future in a number of the nuclear proliferants, which will significantly increase the risks of accidental and unauthorized weapons detonations. Waltz, in contrast, insists that domestic instability in new nuclear powers will not be a problem:

> What is hard to comprehend is why, in an internal struggle for power, any of the contenders should start using nuclear weapons. Who would they aim them at?...One or another nuclear state will experience uncertainty of succession, fierce struggles for power, and instability of regime. Those who fear the worst have not shown with any plausibility how those expected events may lead to the use of nuclear weapons.[106]

This exclusive focus on *deliberate* uses of nuclear weapons is misleading, however, since severe domestic instability can produce *accidental* detonations under many plausible scenarios. If a civil war in a new nuclear state leads to a firefight between rival military factions at a nuclear weapons base, the danger of an accidental detonation or spreading of plutonium would be severe.[107] If domestic unrest leads to severe economic hardships at military bases, disgruntled operators are more likely to engage in acts of sabotage, which could inadvertently or deliberately produce accidents. An example of the type of dangerous incident one should anticipate in future proliferators occurred in early 1992 at the Ignalina nuclear plant in Lithuania, where a programmer reported that he had found a virus in the computer that ran the safety systems for the plant. Investigators later believed, however, that he had placed the virus there himself in order to receive a pay bonus for improving safety.[108] Finally, domestic political unrest can increase the risk of nuclear-weapons accidents by encouraging unsafe transportation, exercise, or testing operations. If warheads are moved out of unstable regions in haste (as occurred in the USSR in 1991) or if weapons tests are rushed to prevent rebellious military units from gaining access to the weapons (as occurred in Algeria in 1961[109]), safety is likely to be compromised. The most dramatic example of risky actions induced by domestic crises is Marshal Nie Rongzhen's decision to launch a test missile 800 kilometers across China with a live nuclear warhead onboard in October 1966 in the middle of the Cultural Revolution. Nie was apparently fully aware of the risks involved in such an unprecedented test, but believed that the nuclear-weapons program needed a dramatic and public sign of success as part of his "strategy of siding with the radicals to fend off radical penetration of the program."[110]

In short, while there have been no major nuclear-weapons accidents in the new proliferators yet, there are good reasons to anticipate that the probabilities will be high over time. Any serious nuclear-weapons accident will have tragic consequences for the local community; and if an accidental detonation, false warning, or unauthorized use of a weapon leads to "mistaken retaliation" and accidental war, the consequences would be even more catastrophic. As long as would-be proliferators choose not to cross the final threshold of "weaponization" by actually deploying fully assembled nuclear weapons and launchers, these safety problems will largely remain dormant. Once these states begin to deploy arsenals, however, such organizational safety problems are likely to emerge with a vengeance. The current safety record is likely to be the lull before the storm.

Conclusions: Bringing Organizations Back In

The nuclear optimists' view that the spread of nuclear weapons will produce stable deterrence is based on a rationalist assumption that new proliferators' behavior will reflect their interest in avoiding nuclear war. New nuclear powers will avoid preventive nuclear wars, develop survivable nuclear arsenals, and prevent nuclear-weapons accidents because it is in their obvious national interests to do so. I have argued, in contrast, that the actual behavior of new proliferators will be strongly influenced by the powerful military organizations within those states and that the common biases, rigid routines, and parochial interests of these military organizations will lead to deterrence failures and uses of nuclear weapons despite national interests to the contrary. The concepts behind this more pessimistic vision of proliferation are well-grounded in the rich theoretical and empirical literature on complex

organizations. My theory makes less heroic assumptions about the rationality of states. It provides useful insights into U.S. nuclear history during the Cold War and points to the key civilian interventions as a critical factor in creating the requirements of nuclear deterrence during the long peace. Although the jury of history is still out on the consequences of further nuclear proliferation, and will be for some time, the emerging evidence from the proliferating world unfortunately supports this more pessimistic view.

Bringing Organizations Back into International Relations

By assuming that all nuclear states will behave quite rationally and will therefore take all the necessary steps to fulfill the requirements of deterrence, Waltz and other nuclear-proliferation optimists have confused prescriptions of what rational states *should* do with predictions of what real states *will* do. This is an error that the classical American realists rarely committed: Hans Morgenthau and George Kennan believed that states should follow the logic of balance-of-power politics, but their whole enterprise was animated by a fear that the United States would fail to do so.[111] This is also an error that Waltz avoided in *Theory of International Politics*, where he noted that "the theory requires no assumptions of rationality...the theory says simply that if some do relatively well, others will emulate them or fall by the wayside."[112] Adding this element of natural selection to his theory of international relations put less of a burden on extreme rationality assumptions. My approach is consistent with this vision. Many proliferators may well behave sensibly, but some will not and will then "fall by the wayside." Falling by the wayside, however, means using nuclear weapons in this case and thus has very serious implications for the whole international system.

"Realist theory by itself can handle some, but not all the problems that concern us," Waltz correctly noted in 1986. "Just as market theory at times requires a theory of the firm, so international-political theory at times needs a theory of the state."[113] Understanding the consequences of nuclear proliferation is precisely one case in point. To predict the nuclear future, we need to utilize ideas, building upon (quite literally) the theory of the firm, about how and when common organizational behaviors can constrain rational reactions to the nuclear revolution.

If this analysis is correct, there is a great need for more research and writing at the organizational level of analysis in international relations. This approach was strongly represented in the 1970s, when Allison, Steinbruner, and Halperin made their seminal contributions. With the exceptions of studies of nuclear command and control[114] and weapons procurement[115], however, the field languished in the 1980s and the study of international relations became dominated by neorealist structural theorizing. Indeed, perhaps the most influential book utilizing organization theory in security studies in the mid-1980s, Barry Posen's *Sources of Military Doctrine*, was at least in part a critique of organizational-level analyses, arguing that neorealist "balance of power theory is a slightly more powerful tool than organization theory for the study of doctrine" in Britain, France, and Germany between the wars.[116]

In the 1990s, however, a new wave of scholarship has used and contributed to organization theory in an effort to understand major problems of international security.[117] Yet many important questions remain unanswered. What is the eventual effect of nuclear weapons and other weapons of mass destruction on civil-military relations in new states that acquire such technologies? Can military organizations in the developing world learn vicariously

from the experience of other professional militaries, or will they have to make their own successes and mistakes? Under what conditions will military organizations accept downsizing, preferring to maintain their "essence" with smaller forces on traditional missions; and under what conditions will they actively seek out new non-traditional missions—such as peace-keeping, disaster relief, and international drug control—in order to maintain or enhance their size and power in a new security environment? What is the impact of organizational rigidities and interests within the state on the diffusion of international norms concerning the acquisition and use of highly destructive weapons? Theoretical and empirical research on such organizational-level issues will be critical to understanding international security in the post-Cold War world.

Bringing Organizations into Counter-Proliferation Policy

What are the policy implications of a more organizational approach to nuclear proliferation? First, and most obviously, this approach suggests that the United States is quite correct to maintain an active nuclear non-proliferation policy. A world with more nuclear-armed states may be our fate; it should not be our goal. It is highly unfortunate, in this regard, that a growing number of defense analysts in proliferant nations read the arguments of the U.S. nuclear optimists and now cite that literature to legitimize the development of nuclear arsenals in their nations.[118] It is fortunate, however, that U.S. government officials have not been convinced of the merits of the optimists' views and there is little evidence that U.S. policy is going to move away from its strong opposition to the further spread of nuclear weapons.

Second, a more effective approach to nuclear proliferation would add a larger dose of intellectual persuasion to our current policy efforts, which are aimed primarily at restricting the supply of materials and providing security guarantees to potential proliferators. There are ongoing debates—often in secret, sometimes in the open—about the wisdom of developing nuclear weapons in many would-be proliferators. To influence such debates, non-proliferation advocates need to develop better understandings of the perceptions and interests of the domestic organizational actors involved. Decision makers in potential nuclear powers do not need to be told that proliferation is not in the *U.S.* interests. They need to be convinced that it is not in *their* interest. Civilian leaders, military leaders, and wider publics alike in these states need to be reminded that development of nuclear weapons will make their states targets for preventive attacks by their potential adversaries, will not easily lead to survivable arsenals, and will raise the specter of accidental or unauthorized uses of nuclear weapons. Just as importantly, they also need to be persuaded that nuclear proliferation may not be in their narrow self-interest as civilian leaders seeking for political power, as militaries seeking autonomy, and as citizens seeking safety.

Finally, an organizational approach offers a valuable, but pessimistic, perspective on efforts to manage proliferation if it occurs despite U.S. attempts to prevent it. On one level, an implication of an organizational perspective is that the United States should cooperate with new proliferators—sharing knowledge of organizational structures, technology, and experience—to reduce the dangerous consequences of the spread of nuclear weapons. On a deeper level, however, the most disturbing lesson of this analysis is that, for organizational reasons, such cooperative efforts are not likely to succeed.

This is true with respect to all three of the requirements of deterrence. The most important step the United States could take to reduce the likelihood of military biases leading to preventive war in the new proliferators would be to encourage sustained civilian control

of the military, with appropriate checks and balances, in those states. Such efforts are unlikely to be completely effective, however, simply because strong military organizations are unlikely to give up their current positions of significant decision-making power in many potential nuclear states. Efforts to improve civil-military relations are therefore likely to be most effective precisely where they are least needed.

To enhance survivability of new nuclear forces, the United States could also consider cooperating with new proliferators—sharing information on delivery system technology, operational practices, and advanced warning systems—to help them create invulnerable forces.[119] This policy, however, is also unlikely to be widely implemented. Not only will U.S. policy-makers fear that such cooperative efforts would signal to additional proliferators that the United States is not really opposed to the further spread of nuclear weapons, but the leaders of new proliferators, and especially the leaders of their military organizations, will also not want to discuss such sensitive issues in detail, fearing that it will expose their own nuclear vulnerabilities and organizational weaknesses to other nations.

Finally, the risk of nuclear accidents suggests that the United States may want to share information on such subjects as electronic locking devices, weapons safety design improvements, and personnel reliability programs. Such efforts, however, could be highly counterproductive if it led new proliferators to believe that they could safely operate large nuclear arsenals on high states of alert. Indeed, an organizational perspective on nuclear safety suggests that we need a paradigm shift in the way we think about managing proliferation. The United States should not try to make new proliferators become like the superpowers during the Cold War, with large arsenals ready to launch at a moment's notice for the sake of deterrence; instead, for the sake of safety, the United States and Russia should try to become more like some of the nascent proliferators, maintaining very small nuclear capabilities, with weapons components separated and located apart from the delivery systems, and with civilian organizations controlling the warheads.

If my theory is right, the U.S. defense department should be telling proliferators, loudly and often, that there are inherent limits to nuclear weapons safety. If my theories are right, however, the U.S. defense department will not do this, because this would require it to acknowledge to others, and itself, how dangerous our own nuclear history has been. The important and difficult task of persuasion will therefore fall largely upon those outside the organizations that have managed U.S. nuclear weapons.

Notes

[1] Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper 171, (London: International Institute for Strategic Studies [IISS], 1981).

[2] Bruce Bueno de Mesquita and William H. Riker, "An Assessment of the Merits of Selective Nuclear Proliferation," *Journal of Conflict Resolution*, vol. 26, no. 2, (June 1982), p. 283. Also see Bruce Bueno de Mesquita, "Nuclear Peace Through Selective Nuclear Proliferation," (unpublished manuscript, the Hoover Institution, Stanford University, 1987).

[3] In 1990, Mearsheimer argued that "Europe will be more stable if Germany acquires a secure nuclear deterrent, but proliferation does not go beyond that point." In 1993, he amended his prescription: "the best formula for maintaining stability in post-Cold War Europe is for all the great powers - including Germany and Ukraine - to have secure nuclear deterrents." John J. Mearsheimer, "Back to the Future: Instability in Europe After the Cold War," *International Security*, vol. 15, no. 1, (Summer

1990), pp. 5-56 (quotations at p. 20 and p. 8) and Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs*, vol. 72, no. 3 (Summer 1993), pp. 50-66 (quotation at p. 51). In both articles, Mearsheimer acknowledges that wide-spread nuclear proliferation poses increased risks of unstable balances and of accidental war.

[4] Stephen Van Evera, "Primed For Peace: Europe After the Cold War," *International Security*, vol. 15, no. 3, (Winter 1990/91), p. 54; Barry R. Posen, "The Security Dilemma and Ethnic Conflict," *Survival*, vol. 35, no. 1 (Spring 1993), pp. 44-45; Peter Lavoy, "Civil-Military Relations, Strategic Conduct, and the Stability of Nuclear Deterrence in South Asia," (Stanford Center for International Security and Arms Control, occasional paper, forthcoming); and Shai Feldman, *Israeli Nuclear Deterrence: A Strategy for the 1980s* (New York: Columbia University Press, 1982), pp. 142-175 and p. 238. Additional "proliferation optimists" include Martin van Creveld, *Nuclear Proliferation and the Future of Conflict* (New York: Free Press, 1993), *passim*; Bruce D. Berkowitz, "Proliferation, Deterrence, and the Likelihood of Nuclear War," *Journal of Conflict Resolution*, vol. 29, no. 1 (March 1985), pp. 112-136; Steven J. Rosen, "A Stable System of Mutual Nuclear Deterrence in the Arab-Israeli Conflict," *American Political Science Review*, vol. 71, no. 4 (December 1977), pp. 1367-1383; John J. Weltman, "Nuclear Devolution and World Order," *World Politics*, vol. 32, no. 2 (January 1980), pp. 169-193; and Christophe Carle, "Mayhem or Deterrence? Regional and Global Security from Non-Proliferation to Post-Proliferation" in Shelley A. Stahl and Geoffrey Kemp (eds.) *Arms Control and Proliferation in the Middle East and South Asia* (New York: St. Martins, 1992), pp. 45-60.

[5] Important pessimistic appraisals include Lewis A. Dunn, *Containing Nuclear Proliferation*, Adelphi Paper 263, (London: International Institute of Strategic Studies, 1991); Karl Kaiser, "Non-proliferation and Nuclear Deterrence," *Survival*, vol. 31, no. 2, (March/April 1989), pp. 123-136; George H. Quester, "Nuclear Proliferation and Stability," and Zalmay Khalilzad, "Nuclear Stability in Southwest Asia," both in Dagobert L. Brito, Michael D. Intriligator, and Adele E. Wick (eds.), *Strategies for Managing Nuclear Proliferation* (Lexington, MA: D.C. Heath, 1983), pp. 101-116 and pp. 181-202; Steven R. David, ""Why the Third World Still Matters," *International Security* vol. 17, no. 3 (Winter 1992/93), pp. 127-159; Steven E. Miller, "The Case Against a Ukrainian Nuclear Deterrent," *Foreign Affairs*, vol. 72, no. 3, (Summer 1993), pp. 67-80; Paul Bracken, "Nuclear Weapons and State Survival in North Korea," *Survival*, vol 35, no. 3, (Autumn 1993), pp. 137-153; and Peter D. Feaver, "Proliferation Optimism and Theories of Nuclear Operations," *Security Studies*, vol 2, no. 3/4, (Spring/Summer 1993), pp. 159-191.

[6] See Christopher H. Achen and Duncan Snidal, "Rational Deterrence Theory and Comparative Case Studies," Alexander L. George and Richard Smoke, "Deterrence and Foreign Policy," Robert Jervis, "Rational Deterrence: Theory and Evidence," and Richard Ned Lebow and Janice Gross Stein "Rational Deterrence Theory: I Think, Therefore I Deter," in *World Politics*, vol. 41, no. 2 (January 1989), pp. 143-224.

[7] See Samuel P. Huntington, *The Soldier and the State* (Cambridge: Harvard University Press, 1957), p. 71; Amos Perlmutter, *The Military and Politics in Modern Times* (New Haven: Yale University Press, 1977), pp. 281-288; and Alfred Stepan, *Rethinking Military Politics* (Princeton: Princeton University Press, 1988), pp. 86-87.

[8] Kenneth N. Waltz, "Nuclear Myths and Political Realities," *American Political Science Review*, vol. 84, no. 3, (September 1990), p. 731 and p. 734. One measure of Waltz's influence on this issue is the fact that this article won the Heinz Eulau award for the best article published in the *APSR* in 1990.

[9] Kenneth N. Waltz, "The Origins of War in Neorealist Theory," in Robert I. Rotberg and Theodore K. Rabb (eds.) *The Origin and Prevention of Major Wars* (Cambridge, UK: Cambridge University Press, 1988), p. 50 and p. 51. Also see Waltz, "The Emerging Structure of International Politics," *International Security*, Vol. 18, No. 2 (Fall 1993), pp. 51-55.

[10] Waltz, *The Spread of Nuclear Weapons*, p. 30.

[11] *Ibid*, p. 11.

[12] *Ibid* and Kenneth N. Waltz, "Response to My Critics," in Robert O. Keohane (ed.) *Neorealism and Its Critics* (New York: Columbia University Press, 1986), p. 331.

[13] Waltz, *The Spread of Nuclear Weapons*, p. 20. Just to be sure, Waltz adds that "if Hitler had not been deterred, would his generals have obeyed his commands?" *Ibid.* This tacked-on argument, however, is inconsistent with Waltz's complete lack of concern for the danger of unauthorized use of nuclear weapons, as noted below. If German generals had the ability and will to disobey Hitler's nuclear commands, couldn't they also order the use of nuclear weapons on their own authority?

[14] Waltz, "Nuclear Myths and Political Realities," p. 739, (emphasis added).

[15] The classic texts are Herbert Simon, *Administrative Behavior* (New York: Macmillan, 2nd ed. 1957) and James G. March and Herbert Simon, *Organizations* (New York: John Wiley and Sons, 1958). For valuable reviews of relevant scholarship see Charles Perrow, *Complex Organizations* (New York: Random House, 3rd edition, 1986), pp. 119-156; Mary Zey, (ed.), *Decision-Making: Alternatives to Rational Choice Models* (Newbury Park, CA: Sage, 1992); Jonathan Bendor and Thomas H. Hammond, "Rethinking Allison's Models," *American Political Science Review*, Vol. 86, No. 2, (June 1992), pp. 301-322; and David A. Welch, "The Organizational Process and Bureaucratic Politics Paradigms," *International Security*, Vol. 17, No. 2 (Fall 1992), pp. 112-146.

[16] On goal displacement see Robert K. Merton, "Bureaucratic Structure and Personality," in Merton (et. al.), eds., *Reader in Bureaucracy* (Glencoe, IL: Free Press, 1952), pp. 365-366; Herbert Simon "Bounded Rationality and Organizational Learning" *Organizational Science*, Vol. 2, No. 1 (February 1991) pp. 125-134; and Charles Perrow, "Goals in Complex Organizations," *American Sociological Review*, Vol. 26, No. 6 (December 1961), pp. 854-865.

[17] March and Simon, *Organizations*, p. 165.

[18] The seminal works on conflict in organization theory are James G. March, "The Business Firm as a Political Coalition," *Journal of Politics*, Vol. 24, No. 1, (February 1962), pp. 662-678; Richard M. Cyert and James G. March, *A Behavioral Theory of the Firm* (Cambridge, Mass., Basil Blackwell, second edition, 1992) and Philip Selznick, *TVA and the Grassroots* (Berkeley: University of California Press, 1949). For valuable recent political science perspectives, see Terry Moe, "Politics and the Theory of Organization," *Journal of Law, Economics, and Organization*, Vol. 7, (special issue 1991), pp. 106-129 and James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1991), especially pp. 179-195.

[19] Martha S. Feldman and James G. March, "Information in Organizations as Signal and Symbol," *Administrative Science Quarterly*, Vol. 26, No. 2, (June 1981), p. 174.

[20] Perrow, *Complex Organizations*, p. 132. In any large organization, as Richard Cyert and James March similarly note, "the decision processes we observe seem to be infused with strategic actions and politics at every level and every point." Cyert and March, *A Behavioral Theory of the Firm*, p. 229.

[21] See Graham T. Allison, *Essence of Decision* (Boston: Little Brown, 1971); John D. Steinbruner, *The Cybernetic Theory of Decision* (Princeton: Princeton University Press, 1974); Morton H. Halperin, *Bureaucratic Politics and Foreign Policy* (Washington: Brookings, 1974); Barry R. Posen, *The Sources of Military Doctrine* (Ithaca: Cornell University Press, 1984); and Scott D. Sagan, *The Limits of Safety: Organizations, Accidents and Nuclear Weapons* (Princeton: Princeton University Press, 1993).

[22] For discussions of preventive war see Jack S. Levy, "Declining Power and the Preventive Motivation for War," *World Politics*, vol. 40, no. 1 (October 1987), pp. 82-107 and Randall L. Schweller, "Domestic Structure and Preventive War," *World Politics*, vol. 44, no. 2, (January 1992), pp. 235-269.

[23] Waltz, *The Spread of Nuclear Weapons*, p. 14.

[24] *Ibid*, p. 15, (emphasis added).

[25] Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises* (Cambridge: Harvard University Press, 1977). Subsequent studies, using additional U.S. and foreign case-studies, have tended to confirm Betts' thesis that military officers are at least as cautious as civilians about advocating the use of force. See David H. Petraeus, "The American Military and the Lessons of Vietnam: A Study of Military Influence and the Use of Force in the Post-Vietnam Era," (Ph.D. dissertation, Princeton University, 1987); Kimberly Marten Zisk, "Soviet Civil-Military Relations and the Decision to Use Force Abroad," California Seminar on International Security and Foreign Policy Monograph, 1990; and Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises* (New York: Columbia University Press,

2nd edition 1991), epilogue, pp. 213-236. For a partial disconfirmation, based on case-studies of Israeli decision-making in 1967 and Egyptian decision-making in 1973, see: Jong Sun Lee, "Attitudes of Civilian and Military Leaders Toward War Initiation: Application of Richard Betts's Analysis of American Cases to Other Countries," (Ph.D. dissertation, the Ohio State University, 1991).

[26] Waltz's optimism is partially based on an explicit extension of Betts' argument. See, Waltz, *The Spread of Nuclear Weapons*, p. 12. Betts, however, only examined advice about U.S. military intervention during the Cold War and did *not* compare military and civilian views on the attractiveness of preventive war.

[27] Huntington, *The Soldier and the State*, p. 65; Alfred Vagts, *Defense and Diplomacy: The Soldier and the Conduct of Foreign Relations* (New York: Crown Point Press, 1956), p. 263; and Jack Snyder, *The Ideology of the Offensive* (Ithaca: Cornell University Press, 1984), p. 28. For empirical support see John P. Lovell, "The Professional Socialization of the West Point Cadet," in Morris Janowitz, ed., *The New Military* (New York: Russell Sage, 1964), p. 129 and Bengt Abrahamsson, "Military Professionalization and Estimates on the Probability of War," in Jacques van Doorn, ed., *Military Profession and Military Regimes* (The Hague: Mouton, 1969), pp. 35-51.

[28] This focus on military means is often seen as a "cultural factor," due to the "military mind." Yet, as Karl Weick has noted, socialization of individuals into an organizational culture is a common and deliberate method used to preserve coordination and produce "a homogenous set of assumptions" in a decentralized organization. See Karl E. Weick, "Organizational Culture as a Source of High Reliability," *California Management Review*, Vol. 29, No. 2 (Winter, 1987), p. 124.

[29] See Snyder, *Ideology of the Offensive*, pp. 26-30 and Posen, *The Sources of Military Doctrine*, pp. 47-50.

[30] It is important to note, however, that Truman's military advisors tended to focus on tactical, military reasons for not using the bomb (such as the lack of suitable targets in Korea or the need to retain weapons for targets in the USSR), while civilians more often emphasized political factors (such as the effects on allied governments or U.S. public opinion). See John Lewis Gaddis, "The Origins of Self-Deterrence: The United States and the Non-Use of Nuclear Weapons, 1945-1958," in Gaddis, *The Long Peace: Inquires into the History of the Cold War* (New York: Oxford University Press, 1987), pp. 115-123 and Roger Dingman, "Atomic Diplomacy During the Korean War," *International Security*, vol. 13, no. 3, (Winter 1988/89), pp. 65-69.

[31] The best source is Marc Trachtenberg's essay, "A `Wasting Asset,' American Strategy and the Shifting Nuclear Balance, 1949-1954," in Trachtenberg, *History and Strategy* (Princeton: Princeton University Press, 1991), pp. 100-152.

[32] SWNCC 282, "Basis for the Formulation of a U.S. Military Policy," September 19, 1945, reprinted in Thomas H. Etzold and John Lewis Gaddis, *Containment: Documents on American Policy and Strategy, 1945-1950* (New York: Columbia University Press, 1978), p. 42 (emphasis added). The document also called for the creation of "an intelligence system which would ensure this government information concerning military, political, economic, and technical developments abroad and hence provide the necessary forewarning of hostile intent and capability." *Ibid.* Significantly, the State Department's response to the report specifically rejected these specific military recommendations which appeared "preventive in purpose." "SC-169b, "Action on Joint Chiefs of Staff Statement on United States Military Policy," November 16, 1945, in *Ibid.*, p. 47.

[33] "Text of Truman's `Report to Nation' on Korea War," *New York Times*, September 2, 1950, p. 4. Truman made similar comments in private conversations. For example, he told Admiral Leahy in May 1948 that the American people would never accept the bomb being used "for aggressive purposes." See David Alan Rosenberg, "American Atomic Strategy and the Hydrogen Bomb Decision," *Journal of American History*, vol. 66, no. 1 (June 1979), p. 67. Also see Harry S. Truman, *Years of Trial and Hope* (Garden City, NY: Doubleday, 1956), Vol.2, p. 359 and p. 383.

[34] NSC-68, in *Foreign Relations of the United States* (hereinafter *FRUS* followed by year and volume), 1950, vol. 1, National Security Affairs, pp. 281-282. According to General Nathan Twining, the moral issue was the most important factor in NSC-68's rejection of preventive war. Nathan F. Twining, *Neither Liberty nor Safety* (New York: Holt, Rinehart and Winston, 1966), p. 49.

[35] Anderson stated: "Give me the order to do it and I can break up Russia's five A-bomb nests in a week...And when I went up to Christ - I think I could explain to Him that I had saved civilization." Austin Stevens, "General Removed over War Speech, *The New York Times*, September 2, 1950, p. 8.
[36] See Trachtenberg, "A 'Wasting Asset,'" pp. 106-107 and p. 123; and *USAF Basic Doctrine*, October 1951, K239.71605-1, Air Force Historical Research Center, Maxwell AFB, AL, p. 3.
[37] Project Control suggested the following might be an appropriate definition of "aggression" calling for a U.S. military response after issuing the ultimatum: "Any nation that persists in the development and production of military force capable of threatening the existence of the Free World and whose political actions and stated national intent leaves no doubt that she intends to use military force to conquer or subjugate free countries should be considered as an aggressor who is preparing to commit an aggressive act against the United States." Quoted in Tami Davis Biddle, "Handling the Soviet Threat: 'Project Control' and the Debate on American Strategy in the Early Cold War Years," *The Journal of Strategic Studies*, vol. 12, no. 3 (September 1989), p. 287.
[38] *Ibid*, pp. 291-292.
[39] Matthew Ridgway, memorandum for the record, May 17, 1954, historical records file 1/15-6/30, Box 30, Ridgway papers, U.S. Army Military History Institute. Originally cited in David Alan Rosenberg, "The Origins of Overkill: Nuclear Weapons and American Strategy, 1945-1960," *International Security*, vol 7, no. 4 (Spring 1983), p. 34.
[40] Memorandum by the Chief of Staff, U.S. Air Force, to the JCS on The Coming National Crisis, (August 21, 1953), Twining Papers, series 2, topical series, nuclear weapons 1952-1961 folder, USAF Academy, Colorado Springs, CO.
[41] Memorandum of Discussion, NSC meeting, November 24, 1954, *FRUS*, 1952-54, Vol. 2, National Security Affairs, part 1, p. 792.
[42] In the future, he wrote in a top secret memorandum to Dulles in September 1953, the United States "would have to be constantly ready, on an instantaneous basis, to inflict greater loss upon the enemy than he could reasonably hope to inflict on us": "This would be a deterrent - but if the contest to maintain this relative position should have to continue indefinitely, the cost would either drive us to war - or into some form of dictatorial government. In such circumstances, we would be forced to consider whether or not our duty to future generations did not require us to *initiate* war at the most propitious moment that we could designate." Memorandum by the President to the Secretary of State, September 8, 1953, *ibid*, p. 461 (emphasis in original).
[43] Robert H. Ferrel (ed.), *The Diary of James C. Hagerty* (Bloomington. IN: University of Indiana Press, 1983), p. 69. Also see Trachtenberg, "A 'Wasting Asset'," p. 141 and McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988), p. 140.
[44] Just as civilian leaders may choose offensive doctrines for rational strategic reasons, they could choose preventive war if they believed the costs were low and the probability of war in the long run was extremely high. See Scott D. Sagan, "1914 Revisited: Allies, Offensives, and Instability," *International Security*, Vol. 11, No. 2, (Fall 1986), pp. 151-176 and Shai Feldman, "The Bombing of Osiraq - Revisited," *International Security*, Vol. 7, No. 2, (Fall 1982).
[45] When the U.S. preventive war advocates presented their views in 1954, U.S. intelligence estimates of Soviet nuclear capabilities were highly uncertain, but nonetheless significant: estimates of the Soviet nuclear stockpile ranged from 188 to 725 nuclear weapons; and an estimated 300 Soviet bomber aircraft could be launched in a first strike, or possibly launched upon warning, of a U.S. attack, "200 to 250 of which might reach their targets [in the United States]." NIE 11-4-54 (August 28, 1954), Declassified Documents Reference System, 1981, No. 283A; and Memorandum by the Acting Special Assistant to the Secretary of State for Intelligence to the Acting Secretary of State, (March 1, 1954), *FRUS*, 1952-1954, Vol. 2, National Security Affairs, part 1, p. 634.
[46] Although advocacy of preventive war diminished within the U.S. military in the late 1950s, common organizational proclivities continued to influence military thinking about nuclear war. Goal displacement was especially pronounced in the early integrated war plans which enabled the JCS to argue, as late as 1961, that the United States would "prevail in the event of general nuclear war," even

if the USSR struck first. Prevail in this context did *not* mean avoiding massive U.S. casualties, however; it simply meant achieving the damage expectancy war aims set out in the guidance given to war planners. See Scott D. Sagan, "SIOP-62: The Nuclear War Plan Briefing to President Kennedy," *International Security*, Vol. 12, No. 1 (Summer 1987), p. 36.

[47] Estimates of the size and status of the Indian and Pakistani weapons arsenals are very uncertain. India claims it has not built actual weapons, though it has significantly more weapons-grade plutonium and could develop a larger arsenal over time, if a decision to deploy weapons is made. Pakistani authorities, however, suggest that Pakistan has already constructed, or could rapidly assemble, a small number of weapons. See David Albright, "India and Pakistan's Nuclear Arms Race," *Arms Control Today*, Vol. 23, No. 5, (June 1993), pp. 12-16 and "Pakistani Quoted as Citing Nuclear Test in `87," *New York Times*, July 25, 1993, p. A-12.

[48] Stephen P. Cohen, *The Pakistan Army* (Berkeley, CA: University of California Press, 1984), p. 112.

[49] On the preventive motivations for Pakistan's 1965 attack see *Ibid*, p. 139; Gowher Rizvi, "The Rivalry Between India and Pakistan," in Barry Buzan and Gowher Rizvi (eds.), *South Asian Insecurity and the Great Powers* (Basingstoke, UK: Macmillan, 1986), pp. 107-108; and Sumit Ganguly, *The Origins of War in South Asia* (Boulder, CO: Westview Press, 1986), pp. 57-95.

[50] Richard Sisson and Leo Rose, *War and Secession: Pakistan, India, and the Creation of Bangladesh* (Berkeley, CA: University of California Press, 1990), pp. 276-277. Some scholars view Pakistan's 1971 attack against India as a preventive war, although it is less clear cut case since limited numbers of Indian forces had covertly intervened in the civil conflict in Bengal prior to Pakistan's major offensive. See *Ibid*, pp. 227-230, Cohen, *The Pakistan Army*, p. 145, and Fazal Muqeem Khan, *Pakistan's Crisis in Leadership* (Islamabad: National Book Foundation, 1973), pp. 192-194.

[51] On the 1990 crisis see John M. Broder and Stanley Meisler, "Terrifying Pursuit of Nuclear Arms," *Los Angeles Times*, January 19, 1992, p. A1 and Seymour M. Hersh, "On the Nuclear Edge," *The New Yorker*, March 29, 1993, pp. 56-73. Also see, however, Douglas Jehl, "Assertion India and Pakistan Faced Nuclear War is Doubted," *New York Times*, March 23, 1993, p. 3.

[52] See *Strategic Survey 1990-1991* (London: IISS, 1991), pp. 214-216.

[53] See Mahnaz Ispanhani, *Pakistan: Dimensions of Insecurity*, Adelphi Paper 246, (London: International Institute for Strategic Studies, Winter 1989/90), pp. 10-15. As George Perkovich notes: "The uncertain and ad hoc nature of the Pakistani political system makes it extremely difficult to predict how decisions to construct or use nuclear weapons would be made." Perkovich, "A Nuclear Third Way in South Asia," *Foreign Policy*, no. 91 (Summer 1993), pp. 90-91.

[54] Stephen Foye, "Civilian-Military Tensions in Ukraine," *Radio Free Europe/Radio Liberty Research Report*, Vol. 2, No. 5, (June 18, 1993), p. 66.

[55] Paul Quinn-Judge, "Yeltsin Weighed Nuclear Strike on Ukraine, Soviet Report Says," *Boston Globe*, October 25, 1991, p. 10 and "`Nuclear Strike' Rumors Blamed on Media, Yeltsin," *Izvestiya*, October 25, 1991, FBIS-SOV-91-207, October 25, 1991, p. 17.

[56] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 58.

[57] Posen, "The Security Dilemma and Ethnic Conflict," p. 39.

[58] See Miller, "The Case Against a Ukrainian Nuclear Deterrent," p. 73.

[59] On Soviet planning during the crisis see Bruce G. Blair, *The Logic of Accidental Nuclear War* (Washington, DC: Brookings, 1993), p. 25 and Raymond L. Garthoff, *Detente and Confrontation* (Washington, DC: The Brookings Institution, 1985), p. 209. According to Arkady Shevchenko, Defense Minister Andrei Grechko advocated preventive war against China in 1969, while first deputy chief of the General Staff, General Nicolai Orgarkov was more restrained. Arkady Schevchenko, *Breaking With Moscow* (New York: Knopf, 1985), p. 165.

[60] See Michael C. Desch, "Why the Soviet Military Supported Gorbachev, but Why the Russian Military Might Only Support Yeltsin for a Price," *Journal of Strategic Studies*, Vol. 16, No. 4 (December 1993) and Robert Arnett, "Russia After the Crisis: Can Civilians Control the Military?", *Orbis*, Vol. 38, No. 1 (Winter 1994), pp. 44-57.

[61] Waltz, *The Spread of Nuclear Weapons*, p. 17.

[62] *Ibid*, p. 15.

[63] Waltz, "Nuclear Myths and Political Realities," p. 732.
[64] *Ibid*," p. 731; Waltz, "Origins of War in Neorealist Theory," p. 51.
[65] Halperin, *Bureaucratic Politics and Foreign Policy*, p. 28. Also see the analysis of "development channeling" in Paul N. Stockton, "Services and Civilians: Problems in the American Way of Developing Strategic Weaponry," (Unpublished PhD dissertation, Department of Government, Harvard University, 1986).
[66] See Henry S. Rowen and Richard Brody, "The Development of U.S. Nuclear Strategy and Employment Policy," in Andrew W. Marshall (et. al.), (eds.), *On Not Confusing Ourselves* (Boulder, CO: Westview Press, 1991) p. 32 and Fred Kaplan, *The Wizards of Armageddon* (New York: Simon and Schuster, 1983), p. 99.
[67] See Bruce L. R. Smith, *The RAND Corporation* (Cambridge: Harvard University Press, 1966), pp. 205-216.
[68] *Ibid*, pp. 222-223.
[69] As Smith notes, "it is doubtful whether an Air Force officer, an 'in house' advisory group made up of Air Force career personnel, or even a civilian advisory group attached to a unit within the normal chain of command, would have the same opportunity or incentive to by-pass immediate superiors and press for the adoption of controversial ideas at higher levels." *Ibid*, p. 226.
[70] Harvey M. Sapolsky, *The Polaris System Development* (Cambridge, MA: Harvard University Press, 1972) p. 15.
[71] *Ibid*, pp. 17-18. Opposition also existed because another navy tradition—that ships should only have one commanding officer—was also challenged by the development of ballistic missile submarines which used two commanders and crews, so that replacements could take over immediately after a lengthy patrol at sea. *Ibid*, p. 35.
[72] *Ibid*, p. 18. Also see Vincent Davis, *The Politics of Innovation: Patterns in Navy Cases*, University of Denver Monograph Series in World Affairs, vol. 4, no. 3, 1966-67, p. 23.
[73] Indeed, in its 1961 and 1962 budget requests, the navy budgeted for only three Polaris submarines, after which the Kennedy Administration increased the number to ten. The navy then requested that the funds should not come out of the navy budget. See Halperin, *Bureaucratic Politics and Foreign Policy*, p. 34.
[74] Edmund Beard, *Developing the ICBM* (New York: Columbia University Press, 1976), p. 8. Also see George A. Reed, "U.S. Defense Policy, U.S. Air Force Doctrine and Strategic Weapons Systems, 1958-1964: The Case of the Minuteman ICBM," (unpublished PhD dissertation, Department of History, Duke University, 1986).
[75] Robert Frank Futrell, *Ideas, Concepts, Doctrine: A History of Basic Thinking in the United States Air Force* (Maxwell AFB, AL: Air University, 1971), p. 257; Beard, *Developing the ICBM*, p. 85.
[76] Beard, *Developing the ICBM*, pp. 153-194.
[77] On Chinese civil-military relations, see Harry Harding, "The Role of the Military in Chinese Politics," in Victor C. Falkenheim (ed.), *Citizens and Groups in Contemporary China* (Ann Arbor: University of Michigan Center for Chinese Studies, 1987), pp.213-256; David Shambaugh, "The Soldier and the State in China," *China Quarterly*, no. 127, (September 1991), pp. 527-568; and Ellis Joffe, *The Chinese Army after Mao* (Cambridge: Harvard University Press, 1987).
[78] See John Wilson Lewis and Hua Di, "China's Ballistic Missile Programs: Technologies, Strategies, and Goals," *International Security*, vol. 17, no. 2 (Fall 1992), pp. 18-19 and p. 28.
[79] Chong-Pin Lin, *China's Nuclear Weapons Strategy* (Lexington, MA: Lexington Books, 1988), p. 64; He Chiang, "PRC Ballistic Missiles: A Preliminary Survey," *Conmilit*, vol. 2, no. 7, (August 1978), p. 12, as quoted in *Ibid*, p. 63.
[80] Lewis and Hua, "China's Ballistic Missile Programs," p. 24.
[81] See *Ibid*, p. 12 and p. 27. The continuing low operational readiness rates in the Chinese submarine fleet may also reflect lower priority, as represented by operational budgets, given to the Chinese Navy. See James Fitzgerald and John Benedict, "There is a Sub Threat," *U.S. Naval Institute Proceedings*, volume 116\8\1,050, (August 1990), p. 58.
[82] See Cameron Binkley, "Pakistan's Ballistic Missile Development," in Harlan Jencks and William

Potter, (eds.) *The International Missile Bazaar* (Boulder, CO: Westview Press, 1994), pp. 75-97.
[83] Nadav Safran, *From War to War* (New York: Pegasus, 1969) p. 319.
[84] *New York Times*, May 26, 1967, p. 16. Also see Anthony Nutting, *Nassar* (New York: E.P. Dutton, 1972), p. 398.
[85] Edgar O'Ballance, *The Third Arab-Israeli War* (Hamden, CN: Archon Books, 1972), p. 65. This is not a uncommon problem. Despite assurances to the contrary, U.S. aircraft at bases in Florida were discovered to be deployed wing-tip to wing-tip at the height of the Cuban missile crisis. See Allison, *Essence of Decision*, p. 139 and *Chronology of JCS Decisions Concerning the Cuban Crisis*, Historical Division, Joint Chiefs of Staff, December 21, 1962 (National Security Archives, Washington, D.C.), pp. 31-32 and pp. 40-41.
[86] O'Ballance, *The Third Arab-Israeli War*, p. 63 and Safran, *From War to War*, p. 321.
[87] See Mearsheimer, "Back to the Future," pp. 37-38 and Van Evera, "Primed for Peace," p. 54.
[88] Waltz, *The Spread of Nuclear Weapons*, p. 16.
[89] *Ibid.*
[90] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 63.
[91] Van Evera, "Primed for Peace," p. 54 (emphasis added).
[92] The best examples of "high reliability theory" are Joseph G. Morone and Edward J. Woodhouse, *Averting Catastrophe: Strategies for Regulating Risky Technologies*, (Berkeley, CA: University of California Press, 1986); Todd R. La Porte and Paula M. Consolini, "Working in Practice But Not in Theory: Theoretical Challenges of 'High Reliability Organizations'", *Journal of Public Administration Research and Theory*, vol. 1, no. 1, (January 1991), pp. 19-47; Karlene H. Roberts (ed.) *New Challenges to Understanding Organizations* (New York: Macmillan, 1993); Aaron Wildavsky, *Searching For Safety* (New Brunswick, N.J.: Transaction Books, 1988); and Jonathan B. Bendor, *Parallel Systems: Redundancy in Government* (Berkeley: University of California Press, 1985).
[93] Charles Perrow, *Normal Accidents: Living with High-Risk Technologies* (New York: Basic Books, 1984) *passim.*
[94] Sagan, *The Limits of Safety*, *passim.*
[95] For details on these and other nuclear weapons safety incidents during the Cuban crisis see *Ibid*, pp. 53-155.
[96] *Ibid.*, pp. 219-222.
[97] *Ibid*, pp. 156-203.
[98] Communications from the Thule radar would go dead, the bomb alarm would report a detonation, and efforts to contact the B-52 would not succeed.
[99] Gary Milhollin, "Building Saddam Hussein's Bomb," *New York Times Magazine*, March 8, 1992, p. 32.
[100] See Avner Cohen and Benjamin Frankel, "Opaque Nuclear Proliferation," *Journal of Strategic Studies*, Vol. 13, No. 3, (September 1990), p. 34 and Feaver, "Proliferation Optimism and Theories of Nuclear Operations," pp. 175-178.
[101] Peter Feaver makes an important counter-argument: when civil-military relations are volatile in a proliferating nation, civilian authorities have increased incentives to put a highly "assertive" (as opposed to a "delegative") control system in place. While such incentives may exist, it is by no means clear that civilians in such states would have the political power to order that assertive control systems be imposed on the military or that the system would be fully implemented if so ordered. See Peter D. Feaver, "Command and Control in Emerging Nuclear Powers," *International Security*, Vol. 17, No. 3 (Winter 1992/93), pp. 176-178.
[102] *Weapons Proliferation in the New World Order*, Hearing before the Committee on Governmental Affairs, U.S. Senate, 102nd Congress, 2nd session, January 15, 1992, p. 25. According to the *Economist's* newsletter, *Foreign Report*, "America has made sure that electrical connections for making the bomb ready in mid-flight have not been delivered...That might offend safety standards in the American air force, but Pakistan's standards are probably lower." *Foreign Report*, January 12, 1989, p. 2.
[103] Seymour Hersh quotes an unidentified U.S. intelligence source as follows: "They had F-16s

prepositioned and armed for delivery—on full alert, with pilots on the aircraft. I believed that they were ready to launch on command." Hersh, "On the Nuclear Edge," p. 65.

[104] "Russian says Ukraine Strengthening Control over Nuclear Arms," Moscow UPI Press Report, September 14, 1993 and "Russia Refuses to Recognize Ukraine's START I Retification," Moscow UPI Press Report, November 26, 1993. Also see "Russia Warns Ukraine on Decay of Warheads," *New York Times*, November 6, 1993, p. 5 and Victor Litovkin, "Second Chernobyl Brewing in Ukraine's Missile Silos," *Izvestiya*, February 16, 1993, FBIS-SOV-029, February 19, 1993, p. 1.

[105] "2 Leaky Nuclear Warheads Cause Worry as Ukraine, Russia Bicker," *The San-Diego Union-Tribune*, October 20, 1993, p. A-12.

[106] Waltz, *The Spread of Nuclear Weapons*, pp. 10-11. Also see Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 63.

[107] Indeed, even the safety systems of the most advanced nuclear weapons in the U.S. arsenal have not been designed and tested to withstand the effects of being hit simultaneously by numerous bullets or multiple pieces of shrapnel. See Sidney D. Drell, Testimony on Nuclear Weapons Testing before the Defense Nuclear Facilities Panel of the House Armed Services Committee, March 31, 1992, p. 2 and John R. Harvey and Stefan Michalowski, *Nuclear Weapons Safety and Trident: Issues and Options* (Stanford: Center for International Security and Arms Control, 1993), pp. 26-27.

[108] William Potter, "Nuclear Threats from the Former Soviet Union," Center for Security and Technology Studies, Lawrence Livermore National Laboratory, March 16, 1993, p. 6. The U.S. nuclear production complex is not immune to such sabotage problems in the post-Cold War world. According to a 1993 DOE report, "questions about the future mission of the facility" led to "several tampering incidents" at the main plutonium facility at Los Alamos National Laboratory in 1992. "Potential consequences include either a fire-induced or explosion-induced release of plutonium and other radioactive or toxic material" See Department of Energy, Office of Nuclear Safety, *New Directions in Nuclear Safety Management and Organization*, April 16, 1993, p. 35.

[109] See Leonard S. Spector, *Going Nuclear* (Cambridge, MA: Ballinger, 1987), pp. 25-32.

[110] John Wilson Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988), pp. 202-203.

[111] See especially Hans J. Morgenthau, *Defending The National Interest* (New York: Knoph, 1951) and George F. Kennan, *American Diplomacy* (Chicago: University of Chicago Press, 1951).

[112] Kenneth N. Waltz, *Theory of International Politics* (New York: Random House, 1979), p. 118. In his 1986 essay Waltz similarly argued that "the international system is a competitive one in which the less skillful must expect to pay for their ineptitude. The situation provides enough incentive to cause *most of the actors* to behave sensibly." Waltz, "Response to My Critics," p. 331, (emphasis added).

[113] Waltz, "Response to My Critics," p. 331.

[114] See Bruce G. Blair *Strategic Command and Control* (Washington: Brookings, 1985); Paul Bracken, *Command and Control of Nuclear Forces* (New Haven: Yale University Press, 1983), and Scott D. Sagan, *Moving Targets: Nuclear Strategy and National Security* (Princeton: Princeton University Press, 1989).

[115] See Desmond Ball, *Politics and Force Levels: The Strategic Missile Program of the Kennedy Administration* (Berkeley: University of California Press, 1980); Michael E. Brown, *Flying Blind: The Politics of the U.S. Strategic Bomber Program* (Ithaca: Cornell University Press, 1992); Robert F. Coulam, *Illusions of Choice: The F-111 and the Problems of Weapons Acquisition Reform* (Princeton: Princeton University Press, 1977); and Thomas L. McNaugher, *The M-16 Controversy* (New York: Praeger, 1984).

[116] Posen, *Sources of Military Doctrine*, p. 239. In my view, however, this conclusion was largely determined by Posen's selection of cases, since the late 1930s was "a period that saw major innovations in doctrine," and balance of power theory predicted innovation, while stagnation was predicted by Posen's use of organizational theory. *Ibid*, p. 41.

[117] For a variety of new organizational perspectives on security issues see Deborah D. Avant, "The Institutional Sources of Military Doctrine: Hegemons in Peripheral Wars," *International Studies*

Quarterly, Vol. 37, No. 4 (December 1993) pp. 409-430; Sun-Ki Chai, "An Organizational Economics Theory of Antigovernment Violence," *Comparative Politics*, Vol. 26, No. 1, (October 1993) pp. 99-110; Chris C. Demchak, *Military Organizations, Complex Machines* (Ithaca: Cornell University Press, 1991); Jeffrey W. Legro. "Military Culture and Inadvertent Escaltion in World War II," *International Security*, Vol. 18, No. 4 (Spring 1994), pp. 108-142; Robert L. Kahn and Mayer N. Zald. eds. *Organizations and Nations-States* (San Francisco, Jossey-Bass, 1990); Elizabeth Kier, *Imagining War: British and French Military Doctrine Before World War II* (Princeton: Princeton University Press, forthcoming 1994); Donald MacKenzie, *Inventing Accuracy: A Historical Sociology of Nuclear Missile Guidance* (Cambridge, Mass: MIT Press, 1990); Sagan, *The Limits of Safety*; Marc C. Suchman and Dana P. Eyre, "Military Procurement as Rational Myth: Notes on the Social Construction of Weapons Proliferation," *Sociological Forum*, Vol. 7, No. 1 (March 1992), pp. 137-161; and Kimberly Martin Zisk, *Engaging the Enemy: Organization Theory and Soviet Military Innovation* (Princeton: Princeton University Press, 1993).

[118] For example see the discussions of Waltz and Mearsheimer in Ravi Shastri, "Developing Nations and the Spread of Nuclear Weapons," *Strategic Analysis* (New Delhi), vol. 11, no. 12, March 1988, pp. 1379-1391 and "Kiev and the Bomb: Ukrainians Reply," *Foreign Affairs*, vol. 72, no. 4, (September/October 1993), pp. 183-186.

[119] The best analysis of U.S. options is Steven E. Miller, "Assistance to Newly Proliferating Nations," in Robert D. Blackwell and Albert Carnesale, eds. *New Nuclear Nations* (New York: Council on Foreign Relations, 1993), pp. 97-131.

France, Civil-Military Relations, and Nuclear Weapons

Samy Cohen
Fondation Nationale des Sciences Politiques, Centre d'Etudes et de Recherches Internationales, Paris
Translated by Cynthia Schoch

The attitude of civilian and military leaders toward the use of armed force has not been the subject of specific political science research in France, unlike the United States. Generally speaking, civil-military relations have not sparked interest among political scientists. No systematic research has been undertaken since Raoul Girardet's study on the military crisis in France and Jean Planchais's on the crisis of modernism in the army.[1]

Research in the field has not been encouraged. There is a cultural taboo that inhibits members of the military from publicly airing their views about their relations with political authorities. Civilians, too, exercise caution to avoid triggering a dispute with the military establishment, which in the past has more than once challenged political authority. This said, civilians and members of the military do sometime discuss their relations in private on the understanding that their identities not be disclosed.

The present report is based on research, primarily interviews, carried out during the past several years on the relations between political authorities and military leaders under the 5th Republic. The scope of investigation covers five areas: nuclear strategy, tactical deterrence, overseas military operations, choices in development of nuclear arms and conventional weapons, and arms sales. Its purpose is to assess the degree of political control over military affairs. In recent years, a great number of articles and books have cast doubt on the ability of political authorities to control decisions made by military leaders, a grave accusation should it turn out to be founded.[2] It would indicate a deterioration in the decision-making process, a purloining of political decision-making by a state body.

In the context of this research we have broached the problem of the use of armed force. Interest in this problem arises from an established phenomenon: civilians have been wielding increasing influence in military matters and show a tendency to behave like warlords. In the United States numerous studies devoted to the "military-industrial complex"[3] and to crisis management[4] have shown that civilian leaders are often more prone to recommend the use of force than the military.

What is the situation in France? The evidence does not offer a clear-cut answer. Distinctions must be made according to the periods and areas studied. The nuclear age, in contrast to preceding periods, has been characterized by the emergence of stable norms of

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behavior which, however, tend to vary considerably, depending on their application in one of the following three major areas: nuclear strategy, the doctrine of tactical nuclear weapons employment, and military operations abroad.

Civilians And Military In The Pre-Nuclear Era

Only at the risk of confusing the issues can any general statements be made about the attitude of civilian and military authorities toward the use of force prior to the advent of the nuclear age. One cannot, in any case, assert that the military was systematically in favor of its use. The years preceding the First World War brought to light the military penchant for the offensive doctrine, which was said to be elevated to the status of a "cult."[5] But in the interwar years a diametrically opposed tendency prevailed: staff officers adopted a basically defensive strategy. Of course, some officers such as Marshal Foch advocated an offensive doctrine, but they were a strict minority. The French army was dominated by the personality of Pétain, who favored a defensive strategy, believing it possible to establish an "inviolable" frontier made up of fortifications defended by strong firepower. The dominant idea was to build up a solid defensive front which, in the event of war, would allow time for mass mobilization; in this manner alone could a counteroffensive be launched in a second phase.[6] But several historians hold that the concept of "rapid intervention" was absent from "official military philosophy."[7] Naval doctrine was resolutely defensive. The air force saw its mission as the defense of French airspace. As for the infantry, the principal armed force, it possessed very few motorized units. Most politicians supported the Maginot Line even as French diplomacy was developing a network of alliances, notably with the East, which logically implied an offensive military strategy. But this contradiction was never properly addressed by the country's political leaders whose prerogative and duty it was to ensure coherence between diplomacy and strategy.

When on 7 March 1936 German troops entered the demilitarized zone on the left bank of the Rhine, a split occurred between civilian authorities, in favor of a quick military response, and the more reluctant military. The military high command, attached to its defensive doctrine, refused to move to the offensive unless the government declared a general mobilization. General Gamelin, National Defense Chief of Staff, went so far as to mislead the government by supplying it with erroneous information on the number of German troops reoccupying the Rhineland, grossly inflating the figures so as to justify his request for general mobilization. Jean-Baptiste Duroselle writes that in addition to the 60,000 men actually stationed as of March 11, General Gamelin reported, "*despite the 2nd bureau's estimates*," 235,000 auxiliary troops; "moreover, *instead of talking about 235,000 unorganized men, he converted this estimate into 15 divisions, in other words, units prepared for combat.*"[8] By placing the government in a quandary—having to choose between all-out mobilization for war a few weeks before legislative elections and inaction—the militaries imposed their point of view without much difficulty and passed up "the last chance to beat Germany," to quote Gamelin's expression in his "memoirs."[9] The army played a major role in the wars of Indochina and Algeria, but the offensive/defensive doctrine debate did not arise. In neither case was it a question of war against an outside enemy; rather it was an internal conflict concerning the union of France. The question then was whether France should continue to exercise its role as a colonial power.

The major problem characterizing civil-military relations in the pre-nuclear era was the inability of the former to control the latter, the army tending to act as an autonomous body beyond the reach of any civilian interference. Relations between political authorities and the army were for a long time governed by a basic, unwritten rule: the army did not get involved in politics. In exchange, the government did not interfere with the running of military affairs except through military budget allocations. This was particularly true from the 1920s on. This unwritten pact in fact granted the military a large influence over foreign and defense policy. Intimidated by the uniform and little versed in military affairs, political leaders, with few exceptions, willingly left all decisions in questions of defense up to military leaders.

In the Rhineland crisis, Premier Albert Sarraut and Foreign Minister Pierre-Etienne Flandin rallied to the military view with no real attempt to put pressure on the armed forces, request further information, or put the issue to debate. The government did not even have access at the time to detailed information held by the Second Bureau on the strength of German military forces.[10] Not for a moment did the Premier dream of disregarding the recommendations of the National Defense Chief of Staff, backed by the War Minister, General Maurin. The government unquestioningly ratified the suggestions of the military high command. The prestige of the victors in the Great War still intimidated statesmen, who refused to interfere when it came to questions of warfare.

Before the Parliamentary Investigation Committee on the events in France from 1933 to 1945, Albert Sarraut admitted to the backing down of political authorities, to their "absolute, timidity-bound, faith in the military...Statesmen and heads of government still feared to tread on military grounds, either to make certain inquiries, or to issue certain authoritarian directives. There was a realm which to them seemed off-limits so to speak—it's stupid, but that's how it is—and that was the realm of strategy. We had no right to interfere in that area and when, from time to time, a statesman took the liberty of passing judgments on the military that weren't strictly budgetary, you should've seen how the press immediately raised a stink, declaring, 'What is this? The military knows its business. You don't know it like they do! Keep your nose out of this!'"[11]

The image Gamelin has left is one of a "devoted servant of the people",[12] in keeping with the 3rd Republic "republican tradition of military power's subordination to the civil political power." But this devotion and respect masks the imbalance of powers in favor of the military and its capacity to manipulate a spiritless political power.

The imbalance weighed as much, if not more, than other constraints (nearly unanimous public opposition to the war; British refusal to take part in a military operation). Albert Sarraut was later to state somewhat ingenuously: "General Gamelin was well aware...that his personal relationship with me and the nature of my personality allowed him the liberty of addressing me with even brutal directness. If he had grabbed me by the lapels, looked me in the eye and said: 'President, this is what we have to do,' I guarantee that not even the British vetoes, not even the pervading oppositions would have prevented me from replying: 'Go ahead'."[13]

Georges Clémenceau alone appears to have fully exercised his prerogatives as head of government. The 4th Republic only partially remedied this constitutional weakness. Defeat obliterated the blind trust that political leaders and the nation had placed in the army. But shirking its responsibilities remained one of the major shortcomings of the 4th Republic. The wars in Indochina and Algeria were conducted contrary to the precepts of Clausewitz, which subordinate the military viewpoint to the political viewpoint.

Though invested by the Constitution with the powers "to lead the armed forces" and "coordinate implementation of national defense," premiers only demonstrated occasional interest in them, preferring to devote their time to resolving political and financial problems and delegating their powers to National Defense Ministers without sufficient authority to impose their point of view on the other members of the cabinet.[14] "From 1946 to 1958," states Colonel Barberot, "all the National Defense Ministers were people who played important roles among the Free French or in the Resistance. None, from Koenig to Chaban-Delmas, has left his mark. None undertook a needed reform, none sought to examine the nature of war...These National Defense Ministers, all very respectable men, are just like the field marshals under the Empire: excellent instruments in the hands of Napoleon, but incompetent when his back was turned. It's quite astounding, for one might think that they are mediocre individuals. Not at all, they were men of substance."[15]

Successive administrations were consistent in granting the commander-in-chief considerable leeway. The result was to divorce war from politics. In February 1954, the government proposed a conference on Indochina without bothering to first inform General Navarre, who had set up the retrenchment camp at Dien Bien Phu, which the Viet-Minh were determined to control so as command a stronger bargaining position at the negotiation table. The weakness of the political authorities was compounded by a poor distribution of powers among the cabinet members. The Defense Minister was in charge of the military on the domestic level but was not empowered to control operations in Indochina, a responsibility devolved on the Undersecretary for Relations with Associated States. But the latter did not dispose of his own military leverage. Only the Premier could settle problems of conflicting powers when he had the time and the political desire to do so.

In his memoirs, General Navarre criticized the government for having failed to perform its "duty of conducting the war."[16] Why hadn't he made the criticism when it was still time? Actually, the blame must largely be shared by civilian officials and military leaders who wanted free rein and looked disapprovingly on any encroachment by political authorities on their realm of competence. General Paul Ely (Chief of General Staff at the time), an admired and respected servant of civilian governments, confirms this unambiguously: "The government and the high command in Paris strove to keep up with the battle in Indochina with a view to helping the commander-in-chief conduct operations. There was obviously no question of superseding General Navarre in decision-making that could only be his own responsibility, but it seemed necessary in moments of crisis like the one the local commander was undergoing at the time to let him exercise his authority with all the calm and serenity called for."[17]

But never had statesmen gone as far in the abandon of their prerogatives as during the Algerian war. Never had they so completely unloaded their responsibilities on the army. The "military power" that took hold at the end of the 4th Republic was largely the consequence of political resignation. The army was invested with heavy responsibilities, reestablishing order, and reconquering the Muslim population by psychological means: "Cutting the population off from the rebel faction, seeking its support, convincing it to take the side of France, such were, consequently, the basic missions the army found itself officially assigned."[18]

Disappointed by the political establishment, which had failed in its duty in Indochina and had robbed soldiers of military victory in Suez in 1956, the army became wary from that point on. It began to evolve outside all political control, making successful pacification its personal affair, engaging itself so wholeheartedly in the battle that it became a formidable

task for the civilian authorities to regain control of the situation. The principles of obedience and subordination were openly and publicly scoffed with no reaction by the political authorities. They took a back seat to the commitment the army set for itself: political reconquest of Algeria.[19] Discredited and divided, the civilian authorities let things ride. No sanctions were made in the wake of the unfortunate decision by the French air force commander to bomb the Tunisian village of Sakhiet Sidi Youssef, on 8 February 1958 (69 casualties including 21 children), in reprisal for an ambush organized on Tunisian territory during which some twenty French soldiers were killed.

At the first hints of abandon in May 1958, the army had no qualms about putting pressure on political authorities to keep the French flag flying in Algeria. "The French army would unanimously consider the abandon of this national possession an outrage. Its potential despair is not to be underestimated," was the telegrammed warning sent 9 May to General Ely, Chief of General Staff in Paris, by Generals Salan, Allard, Massu, and Jouhaud, who reiterated their request to Ely to draw the French President's attention to their "distress, which only a government absolutely determined to keep our flag flying in Algeria can alleviate." On 13 May, the army openly challenged the political leadership and proclaimed its wish to see de Gaulle, the sole person capable in its eyes of opposing French withdrawal from Algeria, return to power.

The Advent Of Nuclear Weapons And The Primacy Of Politics

The 5th Republic brought a major turnabout in relations between political authorities and military leaders. The political order has overridden the military order, thereby confirming the triumph of Clausewitzian theory. The head of State has become the de facto commander-in-chief of the armed forces that he always should have been. He is no longer generalissimo, he has become Caesar. He defines political objectives, strategy, and means.

The generals, with the help of the Algerian affair, had voluntarily encroached on political turf. With de Gaulle and the 5th Republic, political authorities reentered the sphere of military command. They assumed responsibility for the main policy guidelines without necessarily seeking the advice of military leaders who were relegated to auxiliaries, perhaps not always cooperative ones, but in general subject to political authority.

5th Republic civilian leaders had no qualms about getting their hands dirty and interfering in the military field of competence, or even substituting themselves for army chiefs. Feeling directly responsible for the nation's security, entrusted with major peace-keeping duties due to nuclear weapons, they savor the exercise of their military power. At times they of course seek to shirk responsibility, as was seen in the Greenpeace affair, the Luchaire arms scandal uncovered in the early 1980s surrounding the illicit sale of hundreds of thousands of shells to Iran, or in military aid to Iraq, but change has generally won over continuity.[20] Their predecessors, with a few exceptions, fled their responsibilities in military matters. Knowledge was thus not their primary concern. But civilian authorities under the 5th Republic have not shied away from examining affairs of technical substance.

Generals of the 5th Republic have not been as fortunate as their predecessors were. They can, of course, still try to manipulate information, at times underestimating it, at others presenting such and such an option as unfeasible, and some do not deprive themselves of doing so. The 5th Republic has not totally eliminated the risk but has reduced it consider-

ably. In areas where residents feel they have personal responsibilities, they have not hesitated to acquire the necessary knowledge. Civilian authorities have lost much of the timidity mentioned by Sarraut. The military establishment is confronted with political authorities who are no longer satisfied with passively listening to the staff officers. Presidents personally study dossiers regarding matters for which they feel responsible, demanding further details when information is lacking, and they have not hesitated to refute or dispute the well-foundedness of reports. The military leader's word has lost its sacred aura. Army leaders are subject to pressures from political authorities who are eager to be informed. The army has to convince and it can no longer peremptorily declare what is desirable and feasible. The military no longer intimidates; it is intimidated.

Nuclear weapons no doubt have played an important role in this shift, but they are not the cause of it. They may have given the country's leader sole power to squeeze the nuclear trigger and consequently the need to assume global responsibilities in questions of both diplomacy and defense as well as in crisis management, whether or not it implies risks of nuclear escalation. But the primacy of the political order over the military order precedes the development of the "*force de frappe.*" It came about in a context in which nuclear strategy was developed far from the armed forces preoccupied in Algeria. The change took root in de Gaulle's political desire to reassert the authority of civilian leadership, after he was convinced that "modern strategists are no longer, as they once were, leaders of the armed forces but leaders of people, for example Churchill, Stalin, Roosevelt or even Hitler and Mussolini."[21] The founder of the 5th Republic wanted to "normalize" the situation in France. Moreover, political authority was not reestablished overnight simply by the magic of de Gaulle's return to power. It was a process that began with brushing aside generals suspected of wanting too much independence and was accomplished by weeding out others following the aborted coup in April 1961. In the meantime, military leaders who had remained loyal had the time to gauge the nature of the new political power: supported by a large majority of the French, inflexible, on its guard, secretive, concerned above all with keeping the armed forces in their place, out of politics. This could be sensed as early as July 1958.[22] The *"force de frappe"* was still in development. It was in the course of these years (1958-1962) that the new balance of power between civilians and the military was taking shape, that new rules were established. Nuclear capability of itself did not account for the change in the balance of power. The supremacy of politics preceded the nuclear age in Great Britain, the United States, and Israel. In France it took hold over the armed forces before the nuclear factor penetrated people's minds.

Nuclear weapons nevertheless helped this change take root. The conjunction of institutional change and the evolution of nuclear technology introduced rules of behavior regarding the use of force that are stable but variant, depending on whether it is a matter of strategic nuclear forces, tactical nuclear forces, or military operations in Africa or the Near East.

Nuclear Strategy Or The Sacrifice Of The Militaries

In the field of nuclear strategy, French civilian and military authorities alike have demonstrated the utmost caution. The situation cannot be compared to that of the United States. A preventive strike such as that once envisaged by certain American military commanders is

unthinkable in France for it would be suicidal. As a minor nuclear power and a latecomer to the Nuclear Club dominated by two giants, France has a doctrine founded on massive counter-city retaliation, even though in reality, technological progress has made France since the late 1970s capable of attaining military targets and communication centers. There has been an easing of the counter-city strategy, which has never been officially declared.

The use of the "*force de frappe*," later baptized "nuclear deterrent force," is not foreseeable except in the case of a threat to its "vital interests" which, moreover, have never been clearly defined—not only to leave the adversary wondering but especially to preserve the greatest latitude of action for the president.

Civilian authorities have devoted particular attention to ensuring that they have exclusive control over releasing nuclear weapons. Procedures have been set up with the help of the Chief of Staff of the Armed Forces and the Atomic Energy Commission (CEA) so that the president can transmit his orders directly to the strategic air force (FAS), and to the commanders of missile-launching nuclear submarines (SNLE), with no possibility of an order being altered. In one of his public education broadcasts on *TF1* in November 1980, Valéry Giscard d'Estaing, then head of state, gave a partial explanation of this: "It is important to know...that the submarine commander is unaware of what target his missile will strike. He receives an order which sets off calculators and the missile's computer and, from this order, the missile itself aims at the target that has been selected."

The Chief of Staff of the Armed Forces cannot interfere in this chain of command.[23] On strategic air force bases, nuclear warheads are guarded not by forces of the FAS but by national *gendarmerie* units who deliver them only on direct order from the President or another senior official assigned that task by the head of State. A complex signaling device enables the executant to confirm the identity of the person who gives the order with no risk of confusion whatsoever.

The role of the Chief of Staff of the Armed Forces is not, however, reduced to nothing. He has responsibility in setting up, keeping in a state of alert, and protecting the nuclear forces. Together with the CEA and the *Délégation générale pour l'armement*, he is responsible for ensuring the modernization of these weapons. He also draws up strike plans and suggests a choice of targets to the president in accordance with the directives the latter has issued. It is again the chief of staff of the armed forces who oversees any movement of nuclear forces from manufacturing sites to the bases or within the bases where they are stored.[24]

But the military has never had more than a maintenance role. In contrast with the American and Soviet armed forces, it has not sought to reflect on nuclear strategy, nor develop concepts of use, and it has contributed practically no new ideas, limiting itself to what the experts call operational strategy.[25] In contrast to examples from abroad, it has remained aloof from any in-depth thought, whereas there has been no lack of opportunities in which it might have helped adapt strategic plans to shifts in the international context. The army has lost the influence it once held over strategy. Excepting a few momentous circumstances—France's withdrawal from NATO, the post-Cold-War debate on strategy—the military rarely has been involved in major foreign policy issues that affect them.

The reasons for this distance are multifold: historical, political, corporatist, and ontological. The initial controversy between the army and the political authorities regarding the utility of nuclear weapons has played a major role. France is the only nuclear power to have thrust nuclear weapons upon the military. Everywhere else the army was involved early in the decision to build the bomb. The French army entered the nuclear age crab-like,

constrained and forced to adapt itself to the reorganization that de Gaulle imposed on it. At first, only those most abreast of new technology took an interest in plutonium. But as an institution, the army rejected the bomb.[26] They viewed it as too massive a weapon, ill-suited to colonial conflicts. "How is the atom bomb going to help us pacify Algeria?" General Jouhaud demanded to know in 1958.[27] Many saw in it proof that Algeria had ceased to be a priority in the defense effort, even a telltale sign of a huge upheaval leading to a withdrawal to mainland France and a defense concentrated on the European continent. Lastly, nuclear arms condemned conventional weapons to disuse and obsolescence.

The military was to be subjected to some rough blows. Within the space of a few years, it had to resign itself to abandoning Algeria and a heavy reduction in troops; it had to unlearn what it had drawn from experiences in Indochina and Algeria, and assimilate radically new thought patterns on nuclear deterrence. This adaptation did not occur without resistance, occasionally overt criticism on the part of certain generals, and resignations. Hostility toward nuclear weapons was buttressed by de Gaulle's decision to leave NATO's integrated military organization. Nuclear weapons would not have been so thoroughly rejected by the military had they not implied almost simultaneously for de Gaulle that France could brandish its own nuclear sword. For a large majority of the military, leaving NATO was an aberration,[28] a blow to fundamental solidarity, a lapse into insanity on the part of an aging leader who hinted that France could from then on ensure its own security, relying on nuclear deterrence represented at the time by Mirage IV bombers alone.[29] Leaving NATO fueled the debate on the usefulness of the nuclear deterrent force. It was a source of further hostility from many military officers.

But the army bowed to the head of state's determination. All things considered, writes Claude d'Abzac-Epezy, "General de Gaulle had to put together his strategic nuclear force with the help of air force chiefs of staff who were either openly hostile...or had reservations about certain aspects of his policy."[30]

The effect of these reservations was to implicate the political authorities even more deeply in nuclear strategy. de Gaulle demonstrated unfailing watchfulness, personally overseeing the work of experts, making sure he was regularly kept up to date on the work in progress, and spurring it on directly when necessary to speed up the manufacturing process of the H-bomb.

Did the founder of the 5th Republic ever imagine that when he stepped down, these generals, who had spent years denigrating the "*force de frappe*," were to become its staunchest defenders? The army did much more than simply come around to the nuclear view, it became the vigilant protector in any decision likely to weaken the "*force de frappe.*" "As nuclear capability was gradually achieved, military authorities understood its emerging significance, the grandeur it conferred on France, the independence it allowed her, the position we enjoyed among nations through membership in this Nuclear Club and, whatever the criticisms formulated against us, the effort that we had made."[31]

They had put a damper on Pompidou's and Giscard d'Estaing's inclination for "premature sufficiency" as one chief of staff has put it. The reversal in the 1970s was spectacular: it was the political authorities who wanted to put a damper on improving the strategic nuclear force and it was the military leaders who insisted they pursue it.

But joining the nuclear cause never led the military to lose interest in conventional arms. On the contrary, military leaders have never ceased sounding the alarm and demanding more funding for conventional forces, so much so that at times they have appeared somewhat schizophrenic. Military leaders have rarely needed to fight for nuclear weaponry

funding. Funding for conventional equipment, the development of which has suffered due to the priority granted to nuclear armament, is another story. What the army has always called for is, as General Guy Méry states, "that this necessary priority for nuclear forces not be to the detriment of other weapons and to the detriment of training with those other weapons..."[32] Since the end of the 1960s, their leitmotif has invariably been: "Yes to reinforcing nuclear forces, no to the weakening of conventional forces."

The army's lack of involvement with strategic planning stemmed from the very nature of the doctrine laid out in the early days of the 5th Republic—that of counter-city retaliation. Such a monolithic doctrine constituting a single response to a serious threat hardly induced reflection. American civilian and military strategists could contribute to strategic analysis with a broader and more flexible scope for thought.

The main intellectual efforts within the armed forces focused rather on the possibility of a conventional conflict in Europe. Nuclear weapons were the tools of massive reprisal, they belonged part and parcel to the political authorities. As instruments of deterrence and not of battle, they did not stimulate the military imagination, which preferred to concentrate on what would happen before nuclear weapons were unleashed: those first instances in which conventional forces would have their role to play, either in preventing the deflection of deterrent maneuvers, or in demonstrating France's determination to resist a large-scale offensive—these being the only moments in which a military's commitment took on full meaning.

But political authorities also have their share of responsibility in this situation. They have contributed to a large extent to smothering strategic analysis among the military. They have encouraged strategic reflection only at times when they required the military's insight in order to achieve a set goal. In France, "everything that does not come from the Elysée is countered by the Elysée." This remark, made by a former head of a strategic "think tank" to the Secretary-General of National Defense (SGDN), is a telling reflection of the tendency of French presidential rule to stifle any debate that is not initiated by the state's highest authority.

The reasons for this presidential authoritarianism are multifold: fear that such flurries might lead to questioning certain tenets of France's strategic doctrine; fear of seeing the armed forces develop an autonomous strategic philosophy; fear that this activity might lead to questioning presidential authority. Another reason is fear of slips of the tongue that might lead to diplomatic tension or domestic policy problems. Any act or statement, even a word that might hint at a waning of the Gaullian legacy, inflames passions as though de Gaulle had left a signed and sworn testament. General Méry's speech of 1976 on "extended sanctuarization"[33] caused an uproar, forcing the President and his military advisor to abandon a vocabulary considered unorthodox, and encouraged his successor François Mitterrand to observe the utmost caution in his use of strategic rhetoric.

Vigilance was also in order due to the fear that a slip-up might lead to diplomatic complications. France's nuclear deterrence is based on an ambiguous, if not contradictory, principle: national independence and solidarity with the Atlantic allies. France's entire nuclear policy involves striking a delicate but perfect balance between these two concepts—depending on the desired political or diplomatic effect. In the dialogue with the Soviet Union and the Third World, independence was stressed; to reassure the Germans and Americans, solidarity was emphasized.

French nuclear deterrence is based on silences and omissions, which have as much weight as sacrosanct presidential speeches.[34] There is silence, for instance, on the definition of vital interests. Where do they start? At the Rhine or the Elbe? The 1972 White Paper allows both interpretations. Declaring that vital interests are limited to the Rhine could spark off a crisis of confidence with Germany. Acknowledging that they stretch as far as the Elbe could raise other concerns among the Germans and lead them to request a double-locking device on the use of strategic nuclear weapons.

We might point out as well the omissions concerning the very close cooperation with NATO, which has continued to develop since the Lemnitzer-Ailleret accords signed in 1967 while de Gaulle was still in office.[35] The topic is broached by the government only with the most extreme caution, when it is deemed necessary to counter possible criticism of a break from the policy of national independence or reintegration under NATO's wing.

The concept of tactical or pre-strategic use of short-range nuclear weapons also has repercussions for relations with Germany, which is opposed to using these arms on its territory. Adopting the concepts of "pre-strategic" and "final warning" was to some extent connected with a desire to show Germany that their use would be limited.

For all these reasons, the president must retain a monopoly on strategic discourse. This power can be shared neither with the military nor with any other civilian official, be it the prime minister or the defense minister. All speeches are strictly controlled by the president's office.

Only rare individuals (Generals Ailleret, Beaufre, Gallois, and Poirier), acting on the fringe of the army high command, have undertaken the genuine task of strategic analysis.[36] Unquestionably the most significant work is that of General Pierre-Marie Gallois whose philosophy and writings directly influenced de Gaulle. At a time when France was beginning to build its "*force de frappe*," the notion of the "equalizing power of the atom," which Gallois defended, could only encounter positive feedback from the founder of the 5th Republic. It supported his conviction that a nation with limited resources could command the respect of a power equipped with a nuclear arsenal several times superior in size.

Inspired by Gallois, de Gaulle adopted the doctrine of massive retaliation as the only one suited to a medium-sized power incapable of building a nuclear arsenal comparable to those of the superpowers. But their convergence had limits. Gallois had such faith in nuclear deterrence that in his mind it was sufficient to discourage any attack. This belief led him to recommend the abolition of conventional forces, the existence of which might lead one to doubt France's determination to make use of the "*force de frappe.*" It also led him to reject making any commitment to any ally whatsoever.

For Gallois, nuclear deterrence was only valid for defense of the "national sanctuary." It could not be extended to other countries and was consequently incompatible both with commitments made within the Atlantic Alliance and with the possession of tactical nuclear weapons, which would infer that France would accept an intermediate status between an all-or-nothing strategic posture.

It would be a mistake to confuse this "absolutist" viewpoint with de Gaulle's, which was more pragmatic, flexible, and ambiguous as well. De Gaulle did not dismiss solidarity with NATO members or the utility of conventional forces, backed by tactical nuclear armament, or the notion of battle, even though a consensus formed around him rejecting the idea that France could sustain a prolonged battle that would transform Europe into a wasteland. Moreover, France did not have the means to take part in a long-term conventional conflict.

De Gaulle acknowledged that deterrence could fail or be circumvented by a clever adversary wishing to make certain gains without reaching the stage of actual nuclear warfare and that the highest decision-maker would therefore be sinning against France if he did not entertain intermediate solutions between nuclear escalation or the acceptance of the *fait accompli.* [37]

The Concept Of Tactical Nuclear Weapons Employment: The Bone Of Contention

On the other hand, in the field of tactical nuclear weapons, the military, particularly the army, were clearly more in favor of the use of force than civilian political authorities.

Even before the first weapons were put in service in 1972, a rather heated debate pitched political leaders against some of the top military officers. The latter wanted to see the 1st Army stationed in Germany empowered with the fullest possible authority in the use of the *Plutons*. These military authorities believed that—in contrast with the instance of strategic nuclear weapons—they had direct responsibility in releasing tactical nuclear weapons, the central component of the air-land counteroffensive. In their eyes, this claim was justified by operational constraints: to counter mobile targets such as enemy combat units, decisions must be prepared down to the finest detail and swiftly executed, or else a missile may fail to strike its target. Consequently, though the basic decision rests with the president, the moment to strike and choice of target fall to the 1st Army commander. But political leaders saw things differently. Pompidou and Debré were the first to realize fully the considerable risks of leaving these arms even partially under military control. They were both haunted by a vision of the vast destruction an exchange of nuclear fire would wreak in Central Europe, the huge risks for Germany's civilian population, the danger for allied as well as French forces, and especially the risks of nuclear escalation. Michel Debré therefore considered at one time relieving the 1st Army of *Pluton* units and placing them under separate command directly answerable to the president. The former defense minister thus sought to put tactical nuclear weapons completely under political control. The military leaders most directly affected by this decision voiced their disapproval. For them, nominating a "*Pluton* general" independent of the 1st Army would create yet another level in the decision-making process, thus lengthening reaction time. They did not feel that political authorities were in a position, from such a distance, to identify targets and play atomic artillery men. Dissatisfied, but nonetheless convinced that the viewpoint was a sound one, Pompidou and Debré yielded to these arguments.

The accepted "compromise" left the President with the power to decide on recourse to all or part of the *Plutons*, depending on the 1st Army commander's suggestions. The President would give a general authorization and not a case-by-case one as the Defense Minister had at one time planned. On the other hand, the military commander would have to specify the target of each weapon used. Once the presidential green light was given, it would be up to the 1st Army commander to carry out the plan submitted previously to the head of state.

The anxiety of the political establishment did not vanish, however. The fear of escalation remained vivid. In the years following the deployment of the first tactical nuclear weapons, each president took steps intended to reinforce political control and reduce military freedom of maneuver to virtually nothing:

- Change in the nature of target. Wariness of tactical nuclear weapons resulted in greater emphasis on stationary targets—enemy air force bases, bridges, control centers, and airfields—to the detriment of mobile forces. This change enabled missions to be transferred to the FATAC (tactical air force) without recourse to *Pluton.* As early as March 1974, Armed Forces Chief of Staff General François Maurin publicly stressed that there could not be a single category of valid targets for tactical nuclear weapons, "targets of opportunity," such as a concentration of enemy units but that there were also "interdiction targets, fixed targets of infrastructure: crossing points, airfields, radars, etc."[38] The preamble to the *loi de programmation militaire* (program-law) for 1977-1982, drafted during Valéry Giscard d'Estaing's presidency, followed the same lines, evoking as it did the possible "destruction of selected installations located behind combat lines."
- The extension of the range of the *Hades* missile, which would replace the *Plutons* in the late 1980s. Studies to develop a replacement for the *Pluton* were undertaken during Valéry Giscard d'Estaing's term of office. In 1981, Charles Hernu and his civilian advisors obtained an extension of missile range to include targets beyond Federal Republic of Germany territory.[39] This decision was imposed on the army, which accepted it halfheartedly since it nullified army control for short-range tactical strikes.
- Modification of the concept of tactical nuclear-weapons employment: the study begun under Georges Pompidou led to Valéry Giscard d'Estaing's adopting the concept of "final warning." On orders from the President, tactical nuclear weapons would be launched in the form of a massive strike against the aggressor's military targets, the final step before the use of strategic nuclear forces. This shift in doctrine dates from Giscard d'Estaing and not, as many believe, from Mitterrand. It is mentioned in all the working papers of the late 1970s.
- François Mitterrand was to put the finishing touches on the work of his predecessors by severing all organizational ties between the 1st Army and tactical nuclear weapons. In 1982, the decision was made to place the *Hades* missiles (upon their installation) under the direct authority of the armed forces chief of staff, who took his orders directly from the president. Any other intermediary was excluded. François Mitterrand remained inflexible on this measure, which alienated many army officials. The goals statement in the military *loi de programmation* for the 1984-1988 period explicitly provided for the creation of a "large autonomous tactical unit," placed directly under the authority of the armed forces chief of staff. General Jeannou Lacaze, Chief of Staff of the Armed Forces, confirmed this disengagement: "Extending the range of the *Hades* missile will break the automatic link between the threat of using tactical nuclear firepower and the disposition and maneuver of forces."[40]

The decision announced in 1984 by Charles Hernu to rebaptize nuclear weapons as "pre-strategic" weapons went along the same lines. The "pre-strategic label" no doubt tends to make the adversary aware that use of these weapons is not related to the American doctrine of gradual reprisal, but rather that it foreshadows a strategic strike. But the weapons and their doctrine are just as much "rhetorical device," as Jacques Isnard points out, aimed at making the French military community aware that these weapons did not

belong to it and "that there is no difference in nature, in the minds of political authorities, between a kiloton weapon or even battlefield neutronic weapons and heavily loaded thermonuclear arms..."[41]

In 1992, the *Hades* missiles were grouped under a separate brigade of the army corps and placed under the president's direct authority. In October 1991, pre-strategic air force equipment—the Mirage 2000 N capable of carrying a 300-kiloton medium-range air-land missile *ASMP* (over fifteen times the force of Hiroshima)—previously the responsibility of the tactical air force (FATAC), was placed under the command of the strategic air force. Here too, the President wanted to demonstrate his will to avoid any confusion between battlefield arms and the national deterrent posture. Furthermore, François Mitterrand repeatedly affirmed that the final warning would not be issued on German soil. If most army staff officers refrained from public criticism of Mitterrand's strategy, it is probably because nothing was made irreversible.[42] The communications system set up toward the end of the 1980s allowed the possibility of reconciling political control over the tactical nuclear weapons with strikes against mobile forces. This would imply that in the long run, François Mitterrand left several options open, particularly that of a possible pre-strategic nuclear strike on German soil.

Military Aversion To Foreign Interventions

On the other hand, policy on interventions abroad developed for the most part against the will of the chiefs of staff, who were more rebellious than their younger subordinates. For young officers and soldiers, participation in military action, be it offensive, defensive, or for humanitarian reasons, is an experience not to be refused. Most see it as the opportunity to prove their usefulness, their professionalism, or, more prosaically, a chance to travel overseas and get a taste of adventure. Even for risky humanitarian operations such as in the former Yugoslavia, the army has no trouble finding volunteers to don the blue helmet of the United Nations. [43]

But enthusiasm is less widespread among chiefs of staff. Their reluctance, not to say aversion, toward operations abroad has three basic reasons. The first has to do with an "ontological" divergence. The principles on which foreign intervention policy is based are, for the chiefs of staff, often incompatible with the army's *raison d'être*. Government authorities force military leaders into playing a role for which they do not feel prepared. Often in the military establishment there reigns an incomprehension, a refusal even, toward the aims political authorities assign them, for these goals are rarely those of traditional warfare with victory as a final prospect.

France has committed itself in various types of operation: political backing (for an imperiled Arafat in Beirut, for an African despot threatened with destitution); deterrence moves (the Manta operation in Chad, sending aircraft carriers to the coast of Beirut in 1989, or in September 1990 after Iraq's invasion of Kuwait); public policing operations (Somalia, 1992); humanitarian aid support (in Iraqi Kurdistan or the former Yugoslavia) under the French or the United Nations banner; but also war operations (against the Polisario in 1977, in Kolwezi in May 1978, the bombing of the Baalbeck barracks in 1983 and the Ouadi-Doum air force base in Chad in March 1986, the war against Iraq).[44]

In most cases, the objective is not victory by arms. Faithful to its image as a nonbelligerent, international law-abiding nation, France has avoided involvement in protracted military conflicts liable to cause heavy losses. Since the end of the Algerian war, France no longer believes in gunboat policy to preserve its interests overseas. It views its role in Third World countries as one of support rather than opposition. France does, however, have a vested interest in the political stability of certain threatened regions, in the protection of certain vassal states with which it has signed defense and cooperation agreements, and in the protection of its political influence and economic interests. It believes that the maintenance of peace demands and justifies certain military interventions, particularly for humanitarian reasons. But its dilemma resides in intervening without stirring up the hostility of public opinion and political regimes, without making enemies, and without jeopardizing its image as champion of Third-World independence, all the while preferring defensive operations to offensives. The use of force must, as far as possible, avoid bloody reprisals that would be an ugly reminder of colonial wars, escalation, or entanglement, and must also avoid the risk of Soviet intervention, an important consideration during the decades of cold war.

The order of the day is *crisis management*, which President Kennedy made popular in the wake of the Cuban missile crisis, driving home the notion that conventional military strategy was ill-suited to a situation characterized by the risk of nuclear escalation. At the time, Kennedy and his secretary of defense, Robert MacNamara, urged defense strategists to draw up a military plan capable of providing a variety of military options, able to satisfy limited political aims, to make a flexible use of force, to portion out threats of coercion and offers of compromise, muscle-flexing, and concession. This new "coercive diplomacy" was to allow political authorities to delay the use of force at a moment's notice or to use it in a limited manner as a show of its determination.[45] In France, crisis management was theorized by Raymond Aron in terms that gained wide acceptance in the Defense Ministry: "When war is unthinkable...crisis is that form of restrained violence, thwarted confrontation, designed to weaken the adversary's determination and bring it around to renounce its legitimate interests and grant concessions that are not worth the stakes, and the risk, of full-scale war."[46]

This policy of foreign intervention was imposed on a military hierarchy poorly prepared for such political-military acrobatics. Most of the interventions it has been requested to engage in have but a distant rapport with the image it has of its role, which is to protect France's vital interests. Bombing Polisario columns to back the king of Morocco or the president of Mauritania, maintaining in power successive Chadian despots, bailing out some African dictator, playing the peace-keepers in Beirut, the former Yugoslavia or Cambodia at the expense of numerous casualties—such interventions certainly serve France's political interests but are questionable actions in the eyes of an institution that, since the end of the Algerian war, has dedicated itself to defending continental France against its principal threat, the Soviet Union.[47] In Africa, the Near East, or the former Yugoslavia, France is not fighting for its vital interests. At the same time such fighting endangers the life of its combatants, at the risk of tarnishing the army's image. The outburst of Admiral Lanxade, current Armed Forces Chief of Staff, regarding ex-Yugoslavia—"Either we use force or get out!"—is an accurate reflection of the dominant state of mind in the army.[48]

The Manta operation in Chad was intended to aid Hissène Habré's government without directly attacking Libya. French officers stood at readiness for months on end, training and hardening government troops for battle until they were ready to inflict a crushing defeat on Qadhafi's army. Manta was an operation resulting from political decision. France was perfectly capable of driving the Libyans out of the Aouzou strip. But military logic had to

bow to political logic. France would have had to suffer the loss of several reconnaissance planes to conduct a retaliatory operation: bombing the Libyan Ouadi-Doum air force base in March 1986 was meant to avenge the loss of Jaguar planes shot down on a reconnaissance flight over northern Chad.

The French navy, however, puts up less resistance. Foreign military operations enhance its role, whereas the army can only deploy slowly and has everything to fear from an entanglement. Calling out an aircraft carrier benefits from greater press coverage and enhances the navy's image.

There is a second reason behind the senior military leaders' reservations. Crisis management implies that the one who initiates it exercises tight control, and it requires minute synchronization between military action and diplomatic maneuvers. There must be no gesture or blunder likely to jeopardize the general undertaking or to negate the political symbolism, the particular message behind such an undertaking. Consequently, no longer is military logic indifferent to politics—the level of force deployment, the choice of arms committed, the place or time, and the intensity of the action all become political. No longer is there anything to distinguish the conduct of the war as a political affair, from the conduct of operations as the domain of the military. All military, economic, diplomatic, and media means are subordinate to political control.

The military establishment is generally aware of these constraints. The chiefs of staff do not question the necessity of political control. What irritates them is direct political involvement in conducting operations, such as the intervention of a defense minister or member of his staff who issues directives to the commander in the field, short-circuiting the armed forces chief of staff. Operation Barracuda, which removed Jean-Bedel Bokassa from the throne in Central African Republic, was controlled from start to finish by the presidential advisor on African affairs, René Journiac, who was quick to designate each of the targets for commandos of the SDECE (*Service de documentation extérieure et de contre-espionnage*—"Foreign intelligence and counter-espionage agency"), much to the dismay of Valéry Giscard d'Estaing's military advisors. When the various intervention forces were sent to Beirut, the military strongly criticized Charles Hernu for having attempted to play generalissimo and communicate orders directly to the heads of operations. Such meddling does not sit well with the armed forces chiefs of staff, who see it as a disruptive element, which can only confuse a commanding officer's train of thought with contradictory instructions that could lead to serious blunders in the field. Not to mention that these interventions weaken the armed forces chief of staff's authority over his troops. Armed Forces Chief of Staff Admiral Lanxade, however esteemed by political authorities, has also found himself often confronted with this kind of interventionism from Defense Ministry staff, contradicting his own instructions.

For the armed forces chiefs of staff, it should be up to military leaders to assess the risks. Political authority should not mistake "the conduct of war" in the Clausewitzian sense of the term, for the conduct of operations, which is the military's responsibility. Yet these government "encroachments," which de Gaulle said had brought "great misfortune" upon entire populations, have been numerous.[49] Paradoxically, it has been civilian presidents like Valéry Giscard d'Estaing and François Mitterrand (more than General de Gaulle, who respected the prerogative of the military high command) who have allowed this practice to develop. Valéry Giscard d'Estaing had the courage, or the vanity, to acknowledge this: "I overstepped my

competence," he writes regarding the instructions he issued to Armed Forces Chief of Staff General Méry in April 1978 for the use of artillery to check the Toubbou and Libyan offensive against Chad's central government.[50]

Lastly, the aversion of military leaders to this sort of intervention is also related to the problem of risk evaluation. A major and recurrent divergence exists between the military and civilians, the former accusing the latter of levity and lack of realism, of wanting to use force "over a trifle," while underestimating the risks they place on the military, overestimating the French army's capabilities, and believing somewhat naively that the army is able to fulfill any mission with which it is entrusted.

Hence there may be an impression among civilians that the high command has been throwing a wrench into the works, by exaggerating the risks and inflating the threat. Staff officers are conscious of their duty to prepare an operation with the utmost precaution. The high command indisputably does not want military operations to tarnish the image of the armed forces and add to past traumas. It is not surprising that in this case the civilians look like warmongers and the military comes across as pacifists. Doubts among the military high command about the capacities of the military machine are not always shared by civilians. Post-Algerian-war generals suffer from a lack of self-confidence. Since 1962, they have not been through any military test of strength and France's modest contribution in the Gulf War (12,000 French soldiers sent to fight alongside 400,000 American G.I.s) did not change this fact. Certain small states (e.g., Israel, Iraq, Syria) have conventional capabilities similar to, if not greater than, France's. The lack of self-confidence fosters a search for overprotection that politicians take for unwillingness to go into action. During the Gulf War, Armed Forces Chief of Staff Maurice Schmitt predicted that the war with Iraq would cause some 100,000 casualties. But this error of assessment was largely shared by the coalition partners. It involved more self-delusion than bad faith at the service of corporatist interests.

This is one of the reasons that crisis management never occurs without friction. The 5th Republic generals' obsession with security bears some resemblance to that of the 1930s. There is a bit of the General Gamelin in them, seeking armor in infinite precautions before going off to root out the S.A. troops sent by the Führer into the Rhineland. But the military's ability under the 5th Republic to scare politicians into indecisiveness has weakened considerably. Political attitudes toward military violence have changed. Generals are confronted with political authorities who complacently espouse their role of warlords, and who, like Clémenceau, believe that war is much too serious a thing to be entrusted to the military. These civilians set themselves up as experts in military affairs until the day comes when they are obliged to admit that war is too complicated a matter for them to conduct; that is when they assail the military with highly specialized technical questions. The military must then persuade public officials. They must either demonstrate and convince or run the risk of reproach for being useless, or for costing taxpayer money without being able to satisfy the needs of the nation.

Furthermore, it is not rare that the president refuses to heed military warnings. François Mitterrand would not have sent the army into Kuwait had he relied solely on the assessments of the Armed Forces Chief of Staff. The situation would be alarming if presidents systematically abided by their generals' recommendations. Nothing of the sort has happened under the 5th Republic. In a limited number of cases presidents have come around to military opinion. More often, they have imposed their views on the military. The balance of power leans clearly in favor of civilian authorities. Still, cooperation between political authorities and military leaders is better than it has been in the past. Despite initiatives and tensions,

politicians and the military have grown closer. Civilians have learned to better understand the limits of military force and the high command has gradually accepted the inevitability of political interventionism.[51]

Conclusion

By way of conclusion (provisional no doubt), I would like to make two observations:

The first has to do with the end of the cold war. Military officials and civilian authorities alike are somewhat at a loss. For the first time, France does not have a clearly designated enemy and the military is wondering seriously about its role in France's defense. There is a consensus to maintain the nuclear deterrent force, seen as a guarantee against possible threats in the future and an asset in international politics. The consensus does not preclude clashes. The military has made known its strenuous disagreement with François Mitterrand's decision, taken just after the March 1992 regional elections, to halt nuclear testing. In their view, France should give itself a few more years to perfect new nuclear warheads.

There is, however, widespread agreement on improving conventional capability for foreign intervention. The threat of a major conflict with the Soviet Union has been replaced by a more diffuse menace emanating from countries of the Southern hemisphere, some of which have undertaken military nuclear programs and aspire to acquire ballistic missiles. But no one has a very clear idea what form this threat could take. France, like many other western countries, is going through a period of uncertainty that paralyzes any clear-cut strategic choice. Under the incentive of Pierre Joxe, defense minister from 1991 to 1993, France tried to draw some conclusions from the Gulf War, by giving itself intelligence means independent of the United States and by improving the interoperability of its conventional forces. But those are operational adaptations, not strategic ones, which are currently nonexistent. The absence of a military *loi de programmation* for 1992-1994 is one of the manifestations of this inability to devise a defense policy valid for the coming decade.

The second observation deals with one of the questions asked earlier: between civilians and the military, "who is the more hawkish of the two?" This question has no clear answer here. Three notions—the use of armed force, the concept of warfare, and doctrine—must not be confused. Their interrelations are complex and are not necessarily causal. To take the case of strategic nuclear weapons: some presidents have asserted that, in the event of a serious threat to France, they would not hesitate to employ these weapons. Does it follow then that civilians are more in favor of the use of force than the military, or that civilian French leaders see the threat of strategic nuclear-weapons employment as a deterrent purpose, to avoid war? Another case is the one of tactical nuclear weapons: should one conclude that the military is more hawkish than civilian authorities, or that for many civilian and military leaders tactical nuclear weapons reinforce deterrence by discouraging any attempt of limited conventional aggression and by showing France's determination to step across the nuclear threshold? In the area of foreign military operations, it is indeed civilian authorities who generally lead the country to intervene, but with the utmost precaution by reducing as much as possible the risk of blunder. Was not "crisis management" conceived to prevent actual war?

The dividing line between hawks and doves is without a doubt more difficult to make out. Several factors have helped soften the distinction: (a) Nuclear weapons: France has been

a victim of the paradoxes of its own nuclear deterrence doctrine. Consequently, the development of sophisticated weapons can give rise to contradictory interpretations: some view it as a reinforcement of deterrence, others as an evolution toward a doctrine of use (this is particularly the case with regard to the current debate on nuclear testing); (b) The relative weakness of French nuclear and conventional weapons compared to those in the United States, Russia, Ukraine, and even elsewhere, combined with the reluctance on the part of French public opinion to see France get involved in a drawn-out conflict, prompt political leaders and the military alike to proceed with extreme caution when it comes to the use of armed force.

Notes

[1] GIRARDET (RAOUL), *La crise militaire française*: 1945-1962 - Aspects sociologiques et idéologiques, A. Colin, Cahiers de la FNSP, n. 123, 1964, and PLANCHAIS (Jean), "Crise de modernisme dans l'armée," *Revue française de sociologie*, 1961, II, pp. 118-123.

[2] See GUISNEL (Jean), *Les généraux: Enquête sur le pouvoir militaire en France*, Paris, La Découverte, 1990; MARION (Pierre), *Le pouvoir sans visage: le complexe militaro-industriel*, Paris, Calmann-Lévy, 1990; SANGUINETTI (Antoine), "L'administration française des armées: une bureaucratie incontrôlée et incontrôlable", *Revue française d'administration publique*, June 1988 and "Défense de la France ou subventions aux lobbies?" *Le Monde diplomatique*, November 1990; DANIEL (Jean), "Le Complexe" du Président, *Le Nouvel observateur*, November 20, 1987; CHENAIS (François) et SERFATI (Claude), *L'armement en France: genèse, ampleur et coût d'une industrie*, Paris, Nathan, 1992; CLOSETS (François de), *Tant et plus: comment se gaspille notre argent*, Paris, Grasset-Seuil, 1992.

[3] See in particular ROSEN S. (ed.), *Testing the Theory of the Military-Industrial Complex*, MA. Lexington Books, 1973, and SARKESIAN S. (ed.), *The Military-Industrial Complex - A reassessment*, Beverly Hills, Sage Publications, 1972.

[4] BETTS (Richard K.), *Soldiers, Statesmen and Cold War Crisis*, Cambridge, Harvard University Press, 2nd edition, 1991.

[5] See MILLER (Steven E.) (ed.), *Military Strategy and the Origins of the First World War*, Princeton, Princeton University Press, 1985.

[6] See DUROSELLE (Jean-Baptiste), *Politique étrangère de la France: la décadence 1932-1939*, Paris, Coll. Points-Histoire, 1983.

[7] According to MICHALON (Roger) and VERNET (Jacques), "L'armée française et la crise du 7 mars 1936," in *La France et l'Allemagne 1932-1936*, collective work, Ed. du CNRS, pp. 288-314.

[8] DUROSELLE (J.-B.), op. cit., chapter V. Author's italics.

[9] GAMELIN (General), *Servir*, Vol. 2, Plon, 1947, p. 215.

[10] DUROSELLE (J.-B.), op. cit., pp. 167-168.

[11] *Les événements survenus en France de 1933 à 1945. Témoinages et documents recueillis par la Commission d'enquête parlementaire*, Vol. III, PUF, 1947, p. 671.

[12] BENOIST-MECHIN (Jacques), *A l'épreuve du temps. Souvenirs, 1, 1905-1940*, Paris, Julliard, 1989, p. 294.

[13] *Les événements survenus en France de 1933 à 1945...*, op. cit., Vol. III, p. 646.

[14] GERBET (Pierre), "Les rapports entre pouvoir civil et pouvoir militaire en France dans l'élaboration de la politique de défense," Paper presented at the *5th World Congress of the Interantional Association of Political Science*, 26-30 September 1961, p. 13.

[15] Colonel Barberot's account, quoted by MARTIN (Nicolas), and CREPIN (Marc): *L'armée parle*,

Fayard, 1983, p. 290.
[16] NAVARRE (General Henri), *Agonie en Indochine*, Plon, 1958, p. 94.
[17] ELY (General Paul), *Mémoires Vol. 1: L'Indochine dans la tourmente*, Plon, 1964, p. 92.
[18] GIRARDET (Raoul), op. cit., p. 188.
[19] In the *Revue de Défense Nationale* (April 1957), General André Zeller called for open protest against the army's traditional values: "In the world crisis we are currently engaged in and faced with determined adversaries, an army can no long obey or sacrifice itself for words such as duty or discipline that for it have become litterly devoid of meaning."
[20] On the Greenpeace affair, see DEROGY (Jacques) and PONTAUT (Jean-Marie), *Enquête sur trois secrets d'Etat*, Paris, Robert Laffont, 1986; and FAVIER (Pierre) and MARTIN-ROLAND (Michel), *Le décennie Mitterrand, Vol. 2. Les épreuves*, Paris, Seuil, 1991. On the Luchaire scandal, see GAETNER (Gilles), *L'argent facile: Dictionnaire de la corruption en France*, Paris, Stock, 1992.
[21] Quoted by MESSMER (Pierre) and LARCAN (Alain): *Les écrits militaires du général de Gaulle*, PUF, 1985, p. 448.
[22] For enlightening reading, see the writings of General Paul Ely: *Mémoires. Vol. 2. Suez et le 13 Mai*, Plon, 1969, p. 363 ff.
[23] Since 1981, however, a high-level military official has had access to the president's code. But the authentification procedures in force do not allow him to launch a nuclear strike. The danger would exist if all levels of the military chain of command agreed to take over nuclear power. See COHEN (Samy), *La défaite des généraux: Le pouvoir politique et l'armée sous la Vème République*, Paris, Fayard, January 1994.
[24] ISNARD (Jacques), "Cent vingt mégatonnes sous le doigt du Président," *Le Monde*, 21 and 22 October 1984.
[25] For a comparison with the situation in the United States, see SAGAN (Scott D.), *Moving Targets: Nuclear Strategy and National Security*, Princeton, Princeton University Press, 1989.
[26] In his book *Going Nuclear* (Cambridge, Massachussets, Ballinger Publishing Company, 1987), Leonard S. Spector suggests that from April 22 to 24, 1961, the Reggane nuclear test base in the Sahara came under the control of militaries rallied to the cause of the Algiers putsch (pp. 25 ff). He refers in particular to an article by Jean Planchais published in *Le Monde*, April 4, 1986. But Planchais wrote no such thing. In the April 27-28, 1986 issue of *Le Monde* (and not April 4 as Spector erroneously writes), Planchais merely states that General Thiry, commander of the Reggane base, "despite formal orders from Algiers [...] had an experimental atom bomb exploded." In *La fronde des généraux*, a book written in 1961 (not quoted by Spector), Planchais and Jacques Fauvet write: "The atmosphere [at Reggane] is rather turbulent, nothing more. The civilian technicians for the most part display a very scientific detachment from the distant events taking place in the North. General Thiry bagged the formal counter-order addressed him by Algiers and went ahead and exploded the bomb[...]." Paris, Arthaud, p. 231. For de Gaulle, the experiment was a manner of demonstrating to the world that the French government was obeyed even in the farthest reaches of the Sahara.
[27] JOUHAUD (General), "L'heure d'un choix," *L'Air*, 15 December 1958.
[28] PLANCHAIS (Jean), "L'armée et le tournant de 1958," *Pouvoirs*, 1986, n_ 38.
[29] LACOUTURE (Jean), *De Gaulle*, Vol. 3: "Le Souverain, 1959-1970," Paris, Seuil, 1986, chap. 17.
[30] ABZAC-EPEZY (Claude d'), "Les militaires face à la politique du général de Gaulle, 1958-1963," in *Les droites et le général de Gaulle*," Christian Bidegaray and Paul Isoart, eds., Paris, Economica, 1991, pp. 133-144.
[31] According to the testimony given by Pierre Dabezies recorded in *L'armée parle*, p. 291.
[32] *L'armée parle*, p. 326.
[33] See DUVAL (Marcel) and LEBAUT (Yves), *L'arme nucléaire française: Pourquoi et comment*, Paris, Kronos, 1992; and YOST (David), *La France et la sécurité de l'Europe*, Paris, P.U.F., 1985.
[34] See the remarkable article by COUTAU-BEGUARI (Hervé), "La politique de défense de la France," *Stratégiques*, n_ 53.
[35] See BOZO (Frédéric), *La France et l'OTAN: de la guerre froide au nouvel ordre eurpéen*, Paris, Masson, 1991. Read also ULLMAN (Richard H.), "The Covert French Connection," *Foreign Policy*,

Summer 1989, n_ 75, article discussed by F. BOZO.

[36] GERE (François), "Quatre généraux et l'apocalypse: Ailleret, Beaufre, Gallois, Poirier," *Stratégiques*, no. 53.

[37] This was never officially stated out of a concern to maintain the effectiveness of nuclear deterrence.

[38] *Défense nationale*, July 1974.

[39] See FAVIER (Pierre) and MARTIN-ROLAND (Michel), *La décennie Mitterrand*, Vol. 1: Les ruptures, Paris, Seuil 1990, p. 388.

[40] *Défense nationale*, June 1983.

[41] ISNARD (Jacques), "Un arsenal pré-stratégique," *Le Monde*, 31 Octoer 1984.

[42] David Yost rightly points out that the "essential characteristic" of the use of tactical nuclear weapons is to allow a wide array of possible uses, *La France et la sécurité de l'Europe*, op. cit., p. 144.

[43] ISNARD (Jacques), "La stratégie du soldat de plomb," *Le Monde*, 26 December 1992.

[44] For a more complete view on foreign operations, see: *La Revue d'administration publique*, n_ 62, April-June 1992, devoted to "La gestion des crises internationales: l'expérience des armées"; *La politique de défense de la France, Textes et documents*, presented by Dominique David, Fondation pour les études de Défense Nationale, 1989, 331 p., the chapter "Hors Europe," pp. 148 ff.; SERVRANCKX (Jacques), "Les actions récentes de la France en Afrique," *Défense nationale*, November 1980.

[45] GEORGE (Alexander), "The Tensions between 'Military Logic" and Requirements of Diplomacy in Crisis Management," in GEORGE (A.), ed., *Avoiding War. Problems of Crisis Management*, Westview Press, 1991, pp. 15 ff.

[46] Quoted by Charles Hernu in his speech at the IHEDN on 25 May 1985, *Défense nationale*, July 1985.

[47] See DUFOUR (Jean-Louis), *Les vraies guerres...*, Prais, La Manufacture, 1990, p. 220.

[48] *Libération*, 10 December 1992.

[49] See MESSMER (Pierre) and LARCAN (Alain), op. cit., p. 444.

[50] GISCARD D'ESTAING (Valéry), *Le pouvoir et la vie*, Vol. 1, Cie 12, 1988, p. 237.

[51] R. Betts comments on the influence of the U.S. military: "Influence was highest when it was direct and negative, that is when military advisers recommended against use of force...The...lowest level of military influence is direct and positive, that is, when they explicitly recommended force." Op. cit., pp. 11-12.

Civil-Military Relations, the Use of Force, and Nuclear Weapons: Reflections on the British Experience

Len Scott
Department of International Politics, University College of Wales, Aberystwyth

"The armed forces are not a phalanx poised against civilian officials." So concluded Richard Betts in his study of American civil-military relations, published in 1977. [1] According to Betts, "the stereotype of a belligerent chorus of generals and admirals intimidating a pacific establishment is not supported by the evidence." [2] Where some military figures were more "aggressive" than civilian counterparts in advocating the use of force, this was balanced by the attitudes and advice of other military officials. Betts did find that field commanders were more belligerent than senior commanders, and that the air force and navy were more hawkish than their army counterparts. However, overall, "in decisions whether to commit American armed forces, military advisers were usually divided, and their recommendations echoed civilian advice more often than they differed." [3]

Few attempts have been made to establish whether similar patterns can be found in other democratic (or indeed non-democratic) states. Nor has the perspective of civil-military relations been used to explore decisions about nuclear weapons. This paper examines the British experience of civil-military attitudes and asks whether the British military have been more belligerent toward the use of force. It also explores military attitudes to nuclear weapons. As Scott Sagan observes, there has been little attention given to this latter question even in the American context. [4] Britain's experience as a nuclear-weapons state should be of value to any broader study of civil-military relations in this field.

The study of British nuclear policy, however, presents serious challenges to historians, certainly in comparison with the United States. This is because of the very different political culture and official attitudes to the disclosure of information. Nevertheless some broad conclusions can be advanced, and avenues for further research delineated. Three major conventional conflicts involving British armed forces are examined: the Korean War, 1950-3; Suez, 1956; and the Falklands war, 1982. Four nuclear aspects are then explored: policy, strategy, use, and crisis. The principal conclusion is that, while differences between military and civilian attitudes do emerge in different contexts, the overall appearance is one of shared objectives and common understanding of the problems involved.

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Britain and the Use of Force

Differences between military and civilian decision makers on the use of force have attracted little systematic attention from students of British defence policy. Yet the British experience provides much material for exploring differences between military and civilian officials as well as between the different services.

There have been more than one hundred occasions when British armed forces have been used since the Second World War. These have ranged from minor skirmishes to extended "low-intensity operations" (Malaya 1948-60, Northern Ireland 1969-) to large-scale conventional conflict (Korea, the Falklands, the Persian Gulf). Most, though not all, of these actions have been founded upon political consensus, and agreement between the leaderships of the principal political parties. Yet even where such a political consensus did not exist there was (and remained) little concern in Britain that political leaders were under the deleterious influence of a bellicose military.

This contrast with the U.S. experience reflects American concerns that predate the Vietnam War, but which were greatly exacerbated by the conflict in Southeast Asia. In Britain there has been nothing comparable to the Vietnam experience. Suez certainly marked a collapse of the political consensus underpinning British defence policy and the use of force, but this was a brief episode in which it was the political authorities who insisted on using force, and Prime Minister Eden was clearly responsible for the decision to take military action.

There have been specific occasions where the views of military and civilian leaders in war have diverged [5] but few instances where this has given rise to the kind of fears about the military that arose in Vietnam. Northern Ireland has been a major preoccupation of the British army since 1969, but the commitment does not compare with the American war in Southeast Asia, not least because military conscription has not been involved. Equally, in Britain there has been a strong and enduring consensus at Westminster on the army's role, despite evidence that British public opinion favored withdrawal. No evidence has emerged of fundamental disagreement between military and civilian authorities over the level of force or the nature of counter-insurgency strategy. However, there have been allegations over the 'shoot to kill' policy, some of which imply that the activities of the security forces are not wholly accountable, and that subordinate commanders have taken decisions at variance to the stated policy of the government. [6]

The Post-Colonial Context

Since 1945 withdrawal from the empire provided the context for many decisions about strategy and defence planning and the circumstances for military engagements, particularly 'low- intensity' operations against insurgents and movements of national liberation. Civil-military relations in the post- colonial context is a veritable subject in its own right, but one important comparison can be made with the French. Withdrawal from the empire (and specifically from Algeria) helped precipitate a crisis of civil-military relations in France and the politicization of the French armed forces. Nothing comparable occurred in Britain. Despite its strong historical association with India, for example, the British army accepted the political decision to leave, even though the Chief of the Imperial General Staff (CIGS), Sir Alan Brooke, regarded the loss of India as disastrous, [7] and when the decision to withdraw was taken in 1946 the service chiefs were not consulted. [8]

Some historians have argued that the British service chiefs played too great a role in British defence policy after the war [9] and there is certainly reason to believe that the Chiefs of Staff's threat of resignation in 1947 was an important factor in defeating Attlee's attempt in 1945-7 to withdraw from the Middle East. [10] Decolonisation presented great challenges, but did not create the problems that beset the French. That was the case with successful campaigns, such as Malaya, as it was with failures, such as Palestine.

Rhodesia might have been an exception to that rule. If Harold Wilson's government had tried to intervene in 1965 against white Rhodesians in support of black African nationalists (as many in the Commonwealth and the British Labour Party wanted) this could well have presented problems. According to Denis Healey, the Defence Secretary at the time, "at one point I heard there had been some mutinous muttering among senior officers about our policy on Rhodesia, and I had to give the Chief of the General Staff a severe warning about it." [11] However, as Healey's own account suggests, military advice against intervention was based on professional appreciations of the enormous military and logistic difficulties of military action. [12]

Colonial and post-colonial struggles have been one concern for successive British governments, and have led to often protracted counter-insurgent operations, for example in Palestine, Cyprus, and Malaya. The role of force in these types of conflicts clearly raises different issues than large-scale conventional conflict and, even more obviously, than the use of nuclear weapons. What seems clear is that the pattern of British military intervention developed as lessons were learned, and a coherent strategy for the conduct of counter-insurgency operations developed. The model for such warfare was the Malayan emergency, where it is clear that the military commander, Field-Marshal Sir Gerald Templer, was responsible for developing a strategy that placed the emphasis on the struggle for the 'hearts and minds' of the population and the coordination of political and military activity. [13]

Conventional Conflict

To examine British attitudes to the use of conventional forces, three examples will be discussed : the Korean War, the Suez conflict, and the Falklands war. These have been the major conventional conflicts in which British forces have been involved since 1945 and where there is sufficient archival or other evidence to sustain this kind of inquiry. The case studies provide an opportunity to explore differences between military and civilian attitudes and advice. They are also valuable in distinguishing between the services, and between the different types of civilian official.

Korea

From 1945 the view of the British Chiefs of Staff was that there were no British military interests in Korea, and when the North Koreans invaded in June 1950 there was agreement among them that little could be done by Britain other than in the naval field. [14]. The attitude of the Chiefs of Staff toward British involvement reflected their concern about Soviet moves elsewhere. In the words of the official historian : "The blaze might be in Korea just now but if [Stalin] starts fires elsewhere over the range of oceans and continents they [the service chiefs] would run out of fire brigades." [15] When the Americans began to make

requests for land forces the British military were reluctant. One option canvassed in the Chiefs of Staff Committee on 17 July by the Chief of the Air Staff, Sir John Slessor, was to use British air power to bomb "certain selected towns in North Korea." [16] This accorded with the RAF's inter-war role in counter-insurgency and its wartime experience of strategic bombing. There was support for Slessor in the Chiefs of Staff committee, though the Foreign Office was less enthusiastic, rightly believing that the Americans looked to land power to defeat the advancing North Koreans. [17]

While Foreign Office officials came quickly to regard the war as "a costly military commitment in an area of little strategic importance,"[18] political and strategic factors predominated. British concern over the possible use of the atomic bomb loomed large in the view of both Foreign Office and Chiefs of Staff. A key intervention came from the British ambassador in Washington, Sir Oliver Franks, who, convinced of the need for British troops to join the Americans in Korea, wrote directly to the Prime Minister on 15 July 1950 explaining why. [19] Attlee was already coming to the conclusion that the British government could not expect special collaboration with their American partners if the British role was to be restricted principally to advice. [20] The Chiefs of Staff also reconsidered their position, and on the 24 July the CIGS, Sir Bill Slim, told the Defence Committee that:

> Although in their view it was still militarily unsound, they recognized the strong political arguments...it would be wrong to provide less than a Brigade Group. Nothing less would achieve the political objective. [21]

What is apparent is that though there were differences in perspective between military and civilian officials there was common understanding of the political issues. This was evident when it came to both escalation of the war and the use of atomic weapons.

One of Richard Betts' principal conclusions was that "there is a distinct difference in the tendency to aggressiveness between recommendations about the initiation of the armed intervention and advice on escalation of the use of force once armed conflict begun." [22] According to Betts, "Generals prefer using force quickly, massively and decisively to destroy enemy capabilities rather than rationing it gradually to coax the enemy to change his intentions."' [23] This is not borne out in the Korean example.

When the issue arose of whether UN forces should cross the 38th Parallel to defeat the North Koreans and unify Korea the British Chiefs of Staff counseled caution. On 2 October 1950 Sir John Slessor made clear that "the risks involved and the inevitable military commitment...more than outweigh the political advantages to be obtained." [24] The fear of Chinese intervention was the key concern. According to the official history the government's officials and military advisers were evenly divided as to whether the Chinese threat of intervention was a bluff [25]

Within the Chiefs of Staff committee there was some disagreement. Slim argued, at one point, that failure to cross the 38th Parallel could lead to a greater UN military commitment than not going forward. [26] However, on 4 October the Prime Minister was told that the Chiefs of Staff believed "that any crossing of the 38th Parallel will clearly risk an extension and aggravation of the war." [27] While the military situation might in due course necessitate such action, '"he Chiefs of Staff are of the opinion that there is no immediate military need for such a crossing." They recommended that MacArthur be instructed to pause on the parallel pending a North Korean surrender.

The British service chiefs' cautious attitude to the escalation of the war was fully shared by diplomatic advisers and ministers. Foreign Office officials were gravely concerned at the implications of extending the war to China and also fearful that the United States would become embroiled in Asia at the expense of its commitment to Europe, which was beginning to take shape. It is clear that there were differences between military and civilian officials and between the services, but the overriding impression is one of shared objectives and concerns.

The Korean War also provides evidence about Foreign Office attitudes to the use of force, which are of note and relevant in other contexts. British diplomats argued for the deployment of British forces in Korea to sustain British political objectives in Washington. Certainly in Korea, possibly over Cuba, and arguably in the Gulf war, British diplomats recognized the need for military action in support of American objectives in order to maintain or pursue British political goals vis-a-vis the United States.

Suez

Whereas Korea involved the careful management of British-American relations by military and civilian leaders, Suez entailed the subordination of the "special relationship" to Britain's imperial legacy. If in 1950 Britain went to war because of its alliance with Washington, in 1956 it did so in spite of the "special relationship." Military action against Egypt divided the government's military advisers as it divided the country as a whole. The political consensus between government and opposition collapsed, with the leader of the Labour Party, Hugh Gaitskell, publicly castigating the government even as British troops were going into battle. [29] Official advisers were likewise divided. The Permanent Secretary at the Foreign Office, Sir Ivone Kirkpatrick, strongly supported the government's approach toward Nasser. [30] The Permanent Secretary at the Ministry of Defence, Sir Richard Powell, in contrast, was strongly opposed to the use of force—an attitude that was much more representative of Whitehall opinion in general. [31]

Within the military there was clear disagreement. The First Sea Lord, Admiral Mountbatten, was strongly against British military action. According to his official biographer, "Dickson [the Chief of the Air Staff] agreed with him but was ill and often absent. Boyle [Vice-Chief of the Air Staff] was at the most undecided, and Templer [the Chief of the Imperial General Staff] deplored his attitude, at one meeting going so far as to accuse him of being yellow." [32]. Field-Marshal Templer strongly favored the overthrow of Nasser and British military action to secure that aim. Mountbatten, however, was strongly opposed.

The attitude of the First Sea Lord (and acting Chairman of the Chiefs of Staff Committee) is of great interest for several reasons. At the start of the crisis, in July 1956, he drafted a letter to the Prime Minister explaining his opposition to the use of force. This was not sent after he was advised by several ministers (who were sympathetic to his arguments) that it would be constitutionally improper for the First Sea Lord to approach the Prime Minister on a 'political' decision. This illustrates an important constitutional convention concerning the advice that ministers receive. Nevertheless, Mountbatten's anxieties continued, and in August he drafted a letter of resignation to Prime Minister Eden, warning of the risk of provoking thermo-nuclear war and of "Britain's retrograde and absolutely indefensible step" in flouting the principles of the United Nations. [33]. The letter was not sent though. By way of compromise, Mountbatten offered his resignation to the First Lord of the Admiralty, Lord Cilcennin. This was rejected after a meeting with Cilcennin and the Minister of Defence, who "questioned the propriety of a serving officer refusing to carry out his orders" [34] and dissuaded the First Sea Lord from his course of action.

Mountbatten's dealings with the Prime Minister were circumscribed by convention, though in the Chiefs of Staff committee, he was uninhibited in his arguments. He nevertheless ensured that his subordinate commanders, including those in charge of the operation, had no inkling of his doubts. [35] He finally made plain his views to the Prime Minister on 2 November with the British-French invasion fleet four days from Port Said and with the first paratroopers due to land within seventy-two hours :

> I am writing to you to accept the resolution of the overwhelming majority of the United Nations to cease military operations and to beg you to turn back the assault convoy before it is too late, as I feel the actual landing of the troops can only spread the war with untold misery and world-wide repercussions.
>
> You can imagine how hard it is for me to break with all service custom and write direct to you in this way, but I feel so desperate about what is happening that my conscience would not allow me to do otherwise. [36]

Eden ignored Mountbatten's entreaties and Mountbatten was obliged to carry through what proved to be a politically disastrous operation and which finished Eden's career. What is clear is that, despite support for the operation from Templer, the Chiefs of Staff played an important role in modifying the military plans. The original political directives called for an amphibious assault in densely populated areas preceded by massive air and sea bombardment. At a crucial meeting with Eden on 7 September the Chiefs of Staff, and Commander-in-Chief designate, General Keightley, argued strongly for a revision of the plans to reduce the scale of the operation. [37] This example runs counter to Betts' finding that military advisers favor overwhelming use of firepower once a decision has been taken to intervene.

What is also clear is that Mountbatten was not just concerned with narrow military judgments, but broader political issues. In response to Templer's call for "resolute action" he argued "The Middle East conflict is about ideas, emotions, loyalties...You cannot, I suggest, fight ideas with troops and weapons." [38]. His wartime experience and his role in India after the war led him to consider the fundamental political consequences in the Middle East and elsewhere that would arise from British military action. [39]

Suez divided the country, the government, and the military. The divisions within the military do not reflect Betts' general finding about which service is most likely to favor the use of force. The Chief of the Imperial General Staff supported military action against Egypt, while the First Sea Lord was adamantly opposed. A second observation is that whatever their views on the decision to use force the British service chiefs did not seek the massive and overwhelming use of force, and were deeply conscious of possible civilian casualties in the original military plans, which they succeeded in getting revised. Third, Mountbatten's views, at least, were based on overtly political judgments and an understanding of the diplomatic and strategic consequences of British military action.

The Falklands War

The occupation of the Falkland Islands (Islas Malvinas) on 2 April 1982 by Argentine forces was a coup de main, which took the British government by surprise. The suddenness of the attack was an important element in shaping and constraining the options available to the Thatcher government. There were no British casualties either among the small detachment of

marines on the lands or among the civilian population. Nevertheless, both within the Conservative party and in the House of Commons, great pressure emerged for a military response to what was seen as an unprovoked act of aggression by a brutal military dictatorship. A central question, upon which only the professional military advisers could adjudicate, was whether it was militarily and logistically possible to send a British fleet 8,000 miles to recapture the islands should further diplomacy fail.

Several decisions and phases of decision-making can be discerned. [40] In 1981, as part of a comprehensive and far-reaching defence review, the new Defence Secretary, John Nott, had proposed the withdrawal and scrapping of the Antarctic survey ship, *HMS Endurance,* at the end of its 1981-82 deployment. [41] This decision was accepted by the navy insofar as the loss of *Endurance* was preferable to scrapping an additional frigate. Opposition to the withdrawal of the survey ship came from the Foreign Office and the Foreign Secretary, Lord Carrington.

The view of the military reflected different perceptions. In September 1981 the Chiefs of Staff approved an assessment of the options available in the event of Argentine actions. This stated that

> to deter a full-scale invasion a large balanced force would be required, comprising an Invincible class carrier with four destroyers or frigates, plus possibly a nuclear powered submarine, supply ships in attendance and additional manpower up to brigade strength, to reinforce the garrison. Such a deployment would be very expensive and would engage a significant portion of the country's naval resources. There was a danger that its despatch could precipitate the very action it was intended to deter. If then faced with Argentine occupation of the Falkland Islands on arrival, there could be no certainty that such a force could retake them. [42]

These differing perceptions about conventional deterrence in the South Atlantic are of significance and reflect, among other things, the Cold War priorities of the service chiefs. Britain's NATO responsibilities came first. This perspective was shared by civilian and military advisers, particularly within the Ministry of Defence, and was at variance with the Foreign Office view.

It is now believed that the junta took the decision to invade the Falkland Islands on 26 March, though the British government did not obtain clear evidence that an invasion was imminent until 31 March. [43] On 28 March the Prime Minister and the Foreign Secretary decided to send a nuclear-powered hunter-killer submarine to support *Endurance* and this was followed shortly by the despatch of a second submarine. However a third boat was not sent because "the Ministry of Defence took the view that there would be significant operational penalties elsewhere." [44]

The second and critical decision was whether to send the fleet once the invasion had taken place, and with the aim of retaking the islands by force should diplomacy fail. This decision had to be based on military judgements on whether it was possible to retake the islands, and what level of risk should be accepted in sending a task force 8,000 miles to launch an amphibious assault with only limited air cover. The key decision-making group in Whitehall was a subcommittee of the Cabinet Overseas and Defence committee, which became known as the War Cabinet. A key adviser to this group was the Chief of the Defence Staff, Admiral Lord Lewin, who was responsible for presenting the views of the service chiefs

to ministers. The Chiefs of Staff themselves attended when necessary, including when the decision to invade the islands was taken.

When the Argentines occupied the islands the critical questions for the British concerned naval capabilities and logistics, and whether Argentine air power was an insurmountable obstacle to recapturing the islands. The view of the government's naval advisers was critical. It seems clear that the role and attitude of Admiral Sir Henry Leach, the First Sea Lord, was of paramount importance. When Argentine intentions became known, Leach returned to London to discover two briefs, prepared by his staff, one advising that no military action should be taken and the other that invasion was imminent. [45] According to Leach:

> These two briefs did not add up and I had an immediate and acute feeling, 'What' the hell's the point in having a navy if you're not going to use it?' John Nott, the Defence Secretary, was even then being briefed, I wasn't sure to which brief, so I rushed along to get in on the act...The Prime Minister was obviously seeking positive actual data, on which to make up her own mind as to whether this thing was on or not, and one of the more pertinent [questions] (they were all pertinent, but this was particularly pertinent and almost the final crunch) was 'Could we do it?' against all the risks as we'd previously discussed. And I said, 'Yes, we could, and in my judgement, we should,' which was not my business because all that was a political matter, and she was on to that in a flash, 'Why do you say that?', and I said, 'Well, because I think if we don't, or if we do it half-heartedly, and are not completely successful, we shall be living in a different country, which counts for very much less'. [46]

Leach's account is of interest for several reasons. First, his statement that it was not his job to advise on whether the fleet should be sent, merely whether it could it attain its declared objectives, reflects the accepted constitutional position of the Chiefs of Staff. Second, his visceral remarks that Britain would count for very much less were wholly divorced from his professional capacity. Third, and perhaps most significant, was his belief that the intervention was decisive in giving the Prime Minister the advice that enabled her to take a decision to which she was strongly inclined—a view corroborated by her own account of the meeting. [47]

What is clear is that, while Leach's advice was subsequently endorsed by the Chief of the Defence Staff, Admiral Lewin, the initial view prepared for civilian ministers and staff officers was against a military response—a cautionary approach clearly shared by Defence Secretary Nott. [48] There were also indications of reluctance from the other service chiefs, but within the Chiefs of Staff Committee there was no dissent from the recommendation, first, to despatch the Task Force, and then when diplomacy failed, to invade the islands. When on 18 May the War Cabinet took this second decision, Mrs Thatcher insisted that each of the service chiefs make clear his position. [49]

The Falklands war is a clear example of where military advisers took a hawkish line on the use of force, though it is far from clear that outside the Ministry of Defence, civilian advisers played any significant or more cautionary role. The government's actions were against the background of political consensus extending beyond intra-Whitehall debates into Westminster, where there was cross-party support for military action. [50]

As British warships headed for the South Atlantic the policy of the government was to pursue a diplomatic settlement to secure Argentine withdrawal from the islands. A month of

intensive diplomacy followed with mediations from U.S. Secretary of State Haig, President Belaunde of Peru, and UN Secretary- General de Cuellar endeavouring and failing to broker a peaceful solution. Various conspiracy theories have emerged to explain the behaviour of the British government, including the claim that the decision to sink the Argentine warship *General Belgrano* was a politically motivated act designed to scuttle the Peruvian peace plan at the moment when a settlement was possible, thus ensuring that military conflict was inevitable. [51]

The decision to sink the *Belgrano* was a significant escalation, though the Argentine navy and air force were already trying to launch attacks on the British task force. The sinking of the *Belgrano* preceded the destruction of a British warship only because meteorological conditions prevented an attack from the Argentine aircraft carrier. [52] Much controversy has surrounded the sinking of the Argentine cruiser, not just over whether the government was negotiating in good faith, but also on whether Parliament was subsequently misled. [53]

The commander of the British Task force, Admiral Woodward, was tasked with recapturing the Falkland Islands. To ensure political control over the use of military force rules of engagement were established, and in addition the British government issued a series of public statements explaining the basis on which action would be taken against Argentine forces. On 7 April the government announced a Maritime Exclusion Zone (to operate from 12 April) 200 miles around the islands. Any Argentine military force within that zone would be liable to attack. On 28 April a Total Exclusion Zone was declared encompassing all air and sea movements taking effect on 30 April. In addition to these measures the government announced on 23 April that any Argentine forces approaching any British forces would be regarded as hostile and would meet with an appropriate response.

With the imposition of the Total Exclusion Zone the British sought to enforce their blockade and air attacks were mounted on the Falklands Islands. The Argentine navy split into three groups, one of which included the *Belgrano* with two destroyer escorts deployed well to the south of the 200 mile zone. The main group, led by the aircraft carrier *25deMayo*, attempted to launch attacks on the fleet (as did land-based Argentine aircraft) without success. The *Belgrano* was soon discovered by the British hunter-killer submarine, *HMS Conqueror* and the Task Force commander, Admiral Woodward, gave orders to sink the ship. For technical reasons this order had to be routed through naval headquarters at Northwood in London, where the Commander-in-Chief of the Fleet, Admiral Fieldhouse, believed that a change in the rules of engagement laid down by ministers was necessary. Accordingly, he instructed *Conqueror* not to attack the ship until ministerial approval was given. This was sought by the Chief of the Defence Staff, who, with Admiral Fieldhouse, drove to a meeting of the War Cabinet at Chequers.

This vital meeting was not attended by the Foreign Secretary nor for the key discussion by one of the principal diplomatic advisers, Sir Michael Palliser (though the Permanent Secretary at the Foreign Office, Sir Antony Acland, was present). While the Attorney-General, Sir Michael Havers, raised the issue of the international reaction to sinking the ship, the War Cabinet quickly accepted the arguments of Admiral Lewin. The rules of engagement were changed to allow *Conqueror* to attack the *Belgrano* outside the exclusion zone. However, by the time the submarine was told of this decision the cruiser and its escorts had turned and were moving away from the Falklands. This news was transmitted by the submarine, but the information was not considered significant at Northwood, and neither Woodward or Lewin, nor the War Cabinet, were appraised of the news. The *General Belgrano* was torpedoed by *HMS Conqueror* on 2 May.

The Decision to Invade

The sinking of the *Belgrano* and the subsequent Argentine air attack on *HMS Sheffield* marked a significant escalation in the conflict, though they did not mark the end of diplomatic efforts to mediate a solution. When these efforts failed the government was faced with a clear choice: to invade or withdraw. The service chiefs played an important role in framing that choice, in as much as they considered the climatic and logistic factors to be decisive. The decision to invade the islands was considered by the War Cabinet on 18 May in what Margaret Thatcher described as "as perhaps the most crucial moment." [54]. Each of the Chiefs of Staff was required to indicate whether they supported the decision. There was no reported dissent from them, or from senior civilian officials. The Cabinet strongly backed invasion when it met to reach a formal decision on 20 May, though according to Thatcher the Foreign Secretary, Francis Pym, did put forward a compromise proposal. [55]

The Bomb and the British Military

"Statesman and soldiers are partners in preventing war and fighting it. The primary job of the politicians and diplomats, however, is to ensure that the unthinkable does not happen, that deterrence does not fail." [56] In the United States, as Betts recounts, in the 1960s "as nuclear strategic doctrine evolved within the government...some issues separated the opinion of the military...from the dominant civilian opinion." [57] It should be noted that this pattern had changed by the 1980s, when on a range of nuclear strategy and arms control issues, civilian advisers and officials emerged as hawks in contrast to military doves (or owls). [58]

In Britain it is more difficult to establish what kind of pattern exists. In part this reflects the problems of studying British nuclear history. Despite recent initiatives by the Major government on the release of historical documents much nuclear and intelligence material is still withheld, and material not available under the thirty-year rule has yet to emerge. Discussions about targeting or strategy after 1963 are therefore limited to published sources, except where British involvement with NATO planning has provided insight into British government attitudes.

The approach here is to distinguish four discrete, if interrelated, areas of analysis: policy, strategy, crisis, and nuclear use. The overall conclusion is that while disagreements have emerged, military and civilian officials shared common assumptions and values. In some of the areas the conclusions are more tentative than others, and the pattern varies among those areas. The overall impression is one of a national consensus among policy-makers transcending civil-military lines of demarkation.

Nuclear Policy: To Have or Not To Have

Prior to the collapse of the Soviet Union, Britain was the only nuclear-weapons state where there was extended public debate on whether the country should possess weapons of mass destruction. On two occasions the principal opposition party advocated that Britain should relinquish nuclear weapons irrespective of the decisions of other nuclear states. [59] There has also been debate, common among other NATO members, about the basing of American nuclear weapons on British territory.

Decisions to build or acquire nuclear weapons do not in themselves signal intent to use them, except insofar as any credible deterrent must reside upon a conditional intention to threaten use of weapons of mass destruction. British governments have taken a number of nuclear procurement decisions since 1945, many of which have been the focus of fierce political debate. Opposition to British nuclear weapons (and deployment of American nuclear weapons in Britain) emerged as a potent political force in the late 1950s and the early 1980s. This has been the context in which advice on procurement, deployment, and other nuclear decisions has been provided to ministers.

The most closely studied nuclear policy has been the Attlee government's decision to build British atomic weapons. According to Margaret Gowing the decision to make a bomb simply emerged from a general body of assumptions [60]. She identifies three reasons for the decision to proceed with an independent atomic capability: strategic, status, and the nature of Britain's relationship with the United States. The military's argument for possession of an independent atomic capability was automatic, if not instinctive, and reflected Britain's recent experiences of the war against Nazi Germany. The concept of deterrence was grasped and articulated immediately. As the Prime Minister's military secretary, General Hollis, advised in October 1945:

> It is clear that in the event of the failure to secure international agreement, possession of atomic weapons would be vital to our security. The best method of defence against the new weapon is likely to be the deterrent effect that the possession of the means of retaliation would have on a potential aggressor. [61]

Prime Minister Attlee was already convinced of both the need for a British bomb and of the first principles of deterrence, even though he drew some very different political conclusions from the Chiefs of the Staff concerning Britain's commitments in the Middle-East. [62] There was opposition to the acquisition of atomic weapons within government, though the only sustained and coherent criticism to the strategic and foreign-policy case for an independent deterrent came from the government's scientific adviser, Professor P.M.S. Blackett, who went on to become a vociferous public critic of British policy. [63] More significant opposition came in 1946 from the Chancellor of the Exchequer, Hugh Dalton, and the President of the Board of Trade, Stafford Cripps, who attempted to halt the programme on grounds of cost. [64] Concern about the economic consequences of the atomic-weapons programme was to emerge as a perennial issue in subsequent procurement and policy decisions. Where doubts about a British deterrent emerged, such as those of the Minister of Supply, Reginald Maudling, in 1956, these reflected primarily economic concerns. [65]

Most of these subsequent decisions have not yet been systematically explored by historians, though various accounts exist about various weapons systems. [66] Two general observations can be made. The first is that British nuclear policy-making has been configured and constrained by the relationship with the United States. Nuclear weapons have been at the heart of the special relationship, and the political and military consequences of this have shaped the attitude and advice of civilian, diplomatic, and military advisers. Second, economic constraint has been of vital importance. In all aspects of procurement and strategy economic factors have played an often decisive role, although little systematic work has been done on the post-war influence of economic advisers (or the role of the Treasury). [67]

Eventually, the British were able to produce atomic and thermo-nuclear weapons of their own, as well as a first generation of strategic nuclear delivery systems—the Vulcan, Victor,

and Valiant (V) bombers. However, with the cancellation of the Blue Streak Intermediate Range Ballistic Missile (IRBM) in 1960 Britain came to depend on the United States for long-range ballistic missile technology. To sustain an independent operational capability meant entering into an increasingly dependent relationship with the United States in technological and, more arguably, political terms. However, even before this technological dependence the service chiefs recognised that the principal deterrent to war would be United States strategic forces. In their view this did not obviate the need for British nuclear forces, indeed, as will be seen, quite the reverse.

The principal studies of British nuclear policy and strategy have cast light on the role and advice of military and civilian officials. [68] A systematic analysis is beyond this paper, but while the overall conclusion that military officials favour possession of British strategic weapons is unsurprising, it is clear that some military figures have opposed a British strategic deterrent. Indeed two former Chiefs of the Defence Staff, Admiral Lord Mountbatten and Field-Marshal Lord Carver, publicly questioned the need for a British national deterrent. [69] It is also clear that certain categories of civilian officials—in particular government scientific advisers—had an important role and a distinctive outlook on British nuclear-weapons policy.

There has also been military opposition to tactical nuclear weapons. In the 1950s all three services argued for tactical nuclear-delivery systems for their respective services, including Mountbatten, then the First Sea Lord. [70] However, in the 1980s Mountbatten and Carver again emerged as public critics of British and NATO strategies based on using tactical nuclear weapons to compensate for conventional inferiority. [71]

Military opposition to British strategic and tactical nuclear weapons was shared by some key civilian advisers, though it is often difficult to identify views of senior civil servants [72]. The opinions of scientific advisers are more identifiable, and at least until the early 1960s they were more likely to challenge orthodox assumptions and oppose nuclear procurement decisions. The scientists had been crucial in the early atomic research and they played a key role in subsequent British nuclear policy. Yet, Lord Solly Zuckerman, Chief Scientific Adviser to the MOD and then to the government, 1960-70, has described the relationship between scientists and the military as an "uneasy alliance" reflecting fundamentally differing perspectives. [73] "Where it is the habit of the scientists to question, it is that of the soldier to obey." [74] Yet Zuckerman himself later noted the organisational self-interest of the nuclear-weapons laboratories and the fact that the technicians had a deleterious effect on decision-making:

> It is he, the technician, not the commander in the field, who is at the heart of the arms race, who starts the process of formulating a so-called military need. [75]

There is insufficient evidence to assess Zuckerman's criticisms of the British scientific establishment and the decisions of the 1980s and 1990s. However, earlier examples do provide support for his view that scientific advisers were willing to question existing policy assumptions. Blackett's opposition to a British deterrent has already been noted [76]. Again, in 1949, after the explosion of the Soviet atomic bomb, the then Chief Scientific Adviser, Sir Henry Tizard, strongly pressed his view that Britain should abandon its atomic programme, rely on the United States deterrent, and divert resources into defensive guided-missile research. [77] Zuckerman himself was strongly opposed to the idea of using tactical nuclear weapons in war to offset Soviet conventional superiority, and made this clear within both the

British government and NATO. [78] The main counter-example to this pattern was Churchill's scientific adviser, Lord Cherwell, who had played a key wartime role in pressing for the bombing of German cities and who, according to Margaret Gowing, was instrumental in persuading Churchill of the case for the H-bomb. [79]

There is no evidence to suggest that senior civil servants shared the views of the more radical scientific advisers and the handful of senior military officials who expressed opposition to an independent deterrent. Where such opposition emerged within government it was invariably explicit in relying on American nuclear weapons. This was in contrast to much (though not all) anti-nuclear opposition outside of government, where there were also demands for the removal of American nuclear bases from the United Kingdom, and in some quarters for withdrawal from NATO.

Nuclear Strategy

One of Betts' findings was that the U.S. Air Force was generally more hawkish toward nuclear strategy than the other services. In Britain, in the 1940s and 1950s, the principal advocates of strategic deterrence, and a policy of attacking Soviet cities, were the Royal Air Force. A key figure was the Chief of the Air Staff, Sir John Slessor, who became the main architect of British nuclear strategy in the early 1950s. Yet certainly in the period 1946-49, Clark and Wheeler argue, the RAF also wanted to target Soviet air bases and submarine ports as part of a policy of "offensive defence" designed to limit damage to the United Kingdom. [80]

There have been important disagreements over British strategy, both between the services and concerning the emphasis on nuclear as against conventional forces. These debates reflected inter-service competition for resources, which were exacerbated as governments sought to reduce defence expenditure. Yet there has also been an enduring military consensus (individual critics notwithstanding) on the need for a national deterrent, as well as for tactical nuclear weapons.

Characterising debates over nuclear strategy in terms of hawks and doves is problematic, because of the inherently problematic nature of nuclear deterrence. In American debates about nuclear strategy the hawks often advocated war-fighting nuclear strategies that emphasised targeting options short of all-out attack on cities, while the doves emphasised destruction of cities. At other times the doves sought to avoid the all-or-nothing posture of massive retaliation by providing credible options for exercising control over nuclear forces. These are crude simplifications of complex arguments, but they illustrate some of the difficulties in using debates over strategy to examine whether military advisers are more "aggressive."

This is well illustrated by the example of Rear-Admiral Anthony Buzzard, who, while Director of Naval Intelligence, 1951-54, was the principal critic of the policy of strategic deterrence enshrined in the 1952 Global Strategy paper. [81] Within government, and then in public, Buzzard challenged the prevailing British orthodoxy championed by Sir John Slessor. Buzzard's critique emphasised the need for British tactical nuclear capabilities and a strategy that would withhold attacks on Soviet cities to provide incentives for the Soviets to refrain from similar attacks. What is clear is that Buzzard's views on Graduated Deterrence were informed not just by his understanding of the problems of strategy in an era of mutual annihilation, but were also guided by the author's ethical and religious scruples about the nuclear bombardment of civilians.

The orthodox view was that Britain needed a strategic deterrent, even though some of its keenest proponents also sought a capacity to attack Soviet military targets as part of a damage-limitation strategy. [82] In part this reflected understanding that the principal deterrent to war would be that of the United States. A British deterrent was necessary to enable Britain to influence U.S. planning and targeting, while ensuring that airfields and other "retardation" targets could be destroyed by the RAF at the outset of war. The relevance of such thinking dwindled in the 1950s as United States targeting capabilities grew considerably, though the idea that a British nuclear role would facilitate influence over American decisions continued to be widely held in government.

Clark and Wheeler argue that in the period 1945-1955 a distinctive British view of nuclear strategy emerged, and one which reflected shared perceptions of military and civilian figures. At the root of this was the concept of deterrence and the belief that Britain was uniquely vulnerable to weapons of mass destruction. The vulnerability of the United Kingdom to attack from nuclear, biological, and chemical weapons was recognised at the outset of the nuclear age, and this realisation extended from military to political leaders. As Attlee wrote to Truman in September 1945, "I have so far heard no suggestion of any possible means of defence. The only deterrent is the possibility of the victim of such an attack being able to retort on the victor." [83] Attlee's grasp of deterrence was immediate:

> We recognise or some of us did before this war that bombing could only be answered by counterbombing. We were right. Berlin and Magdeburg were the only answer to London and Coventry. Both derive from Guernica. The answer to an atomic bomb on London is an atomic bomb on another great city. [84]

Within government acceptance of this logic extended across the services and formed the foundation of British nuclear-targeting policies and strategies, though not, as noted, at the expense of a doctrine of limited counter-military targeting. It was a logic founded upon the twin experiences of the allied bombing offensive against German cities and the German V-2 missile attacks on Britain.

While factors of history and geography had rendered Britain uniquely vulnerable in the eyes of the government, it was not until the advent of the Soviet ballistic missiles (and the H-bomb) that the vulnerability of Britain's airborne deterrent became an immediate preoccupation. Once the British deterrent was deployed on submarines the problem was effectively solved. For the first two post-war decades the need for Britain (and the United States) to initiate strategic nuclear attacks was clear among the service chiefs. Likewise at the theatre level all three services quickly began to plan on the early use of tactical nuclear weapons to compensate for inferior conventional forces, and this was true of early planning in Europe, the Middle East, and the Far East. [85] When NATO developed its strategy of Flexible Response such thinking was at the heart of British and allied planning.

In the United States evidence has emerged to show that elements within the U.S. military supported the idea of preventive nuclear war. [86] There is no evidence that senior British military officials gave serious consideration to this, though, according to Lord Moran, Churchill discussed the idea with Eisenhower at their Bermuda summit in 1953. [87]

The issue of preemption was somewhat different, because from the outset it was recognised that Britain would need to initiate nuclear attacks against Soviet ports and air bases. As the Joint Planning Staff stated in 1948 weapons of mass destruction meant there was "a premium to strike first." [88] Churchill was indeed publicly explicit that in a future

war Britain would need to attack enemy air bases [89] These views did not go unchallenged. In 1947 the Vice-Chief of the Air-Staff, Sir William Dickson, argued against the initiation of nuclear war, inter alia, because it was not politically acceptable. [90] Subsequently a number of military officials were to question the credibility of initiating attacks that would invite retaliatory annihilation on the United Kingdom, an issue central to NATO's strategies of Massive Retaliation and Flexible Response. [91] Clark and Wheeler nevertheless conclude:

> The British Chiefs of Staff never conceived of launching a 'bolt from the blue' attack against the Soviet Union, and were aware that in a crisis strategic preparations by either side could be construed as provocative and might lead to inadvertent escalation and war. [92]

Yet in the earlier period the incentives for nuclear preemption were high, and with the development of Soviet ballistic missiles the vulnerability of British forces was called into question, eventually leading to the abandonment of the Blue Streak IRBM. The Polaris sea-based deterrent proffered a solution to the problem of vulnerability, and for more than a decade to the difficulties of penetrating Soviet air defence. It also reduced and constrained the targeting options of a British deterrent, insofar as it was essentially a counter-city weapon. The development of a credible rationale for a British deterrent within NATO also emerged as an issue, as British nuclear forces became increasingly integrated into NATO planning and targeting. From the outset NATO strategies envisaged the initiation of nuclear war, and certainly in 1957 the Chiefs of Staff saw nuclear preemption, once hostilities had begun, as a viable option for the alliance as a whole:

> In the unlikely event of Soviet aggression against the Western Powers with conventional weapons, without simultaneous nuclear air attack, it is conceivable that we might have the nuclear initiative and decide to use it. In this case we consider that allied strategic target policy should be to concentrate initially on destroying the enemy's ability to launch a nuclear attack against the West. [93]

In the 1980s the prospect of a new strategic system, Trident, opened up a range of options and debates. Accounts suggest that the Chiefs of Staff were important, though not decisive, participants in the policy process, and although there was disquiet at the opportunity costs of Trident for the defence equipment budget, they supported the acquisition of the missile. [94] Trident offered targeting options not available to the existing Polaris system (which had been modified with the Chevaline warhead to penetrate Moscow's Anti-Ballistic Missile defences) and there does appear to have been a shift in policy. According to Lawrence Freedman,

> [A] review of targeting policies seems to have been instituted in the early 1980s. Part of the impulse appears to have been the view that it was neither necessary nor wholly proper to concentrate on Soviet cities. This view was associated with Michael Quinlan, the leading civil servant on nuclear issues in Whitehall. [95]

There is little information about these debates, and no clues about the attitude of the military. Nor, beyond declaratory government statements, is the outcome clear.

Pressing the Button

The few occasions when a British government has considered the use of weapons of mass destruction have been when American governments contemplated such a decision. No British Prime Minister has considered using British nuclear weapons independently of the United States. The only moment when Britain acted in defiance of the United States was in 1956, shortly after Britain had acquired an operational nuclear capability. Soviet nuclear sabre-rattling over Suez does not appear to have been taken seriously by the government [96] and no evidence has emerged that any alerts or other precautionary measures affecting Britain's nuclear deterrent were undertaken.

British concern with the use of nuclear weapons has been inextricably involved with American deliberations, dating back to Truman's decision to drop atomic bombs on Japan. Under the terms of the 1943 Quebec agreement the British and American governments resolved that "we will not use it [the atomic bomb] against third parties without each other's consent." [97] In September 1944 Churchill and Roosevelt secretly agreed that "when a bomb is finally available, it might after mature consideration, be used against the Japanese, who should be warned that this bombardment will be repeated until they surrender." [98]

British agreement to the attack on Japan was given by Winston Churchill. It certainly did not follow any "mature consideration" on the part of the British government. According to Margaret Gowing ministerial discussion was "cursory" [99], and as Churchill later recounted "there was never a moment's discussion as to whether the atomic bomb should be used or not." [100] There is no evidence that military or other advisers expressed any doubt to ministers. General Ismay later recorded his "revulsion" at the bomb, though nothing has emerged to suggest that the Prime Minister was made aware of any such feelings. [101]

Churchill was no longer in office when President Truman consulted the British government over the use of the bomb. The Labour leader, Clement Attlee, later recounted that:

> Agreement for the dropping of the bomb by the United States had already been given by Sir Winston Churchill on behalf of Britain. I was, therefore, not called upon to make a decision, but if I had been I should have agreed with President Truman. His was the decision and courageously he took it. [102]

Again there is no evidence that military or other advisers expressed doubts or objections to the new Prime Minister.

Korea

As seen above the British service chiefs were reluctant to commit British troops in Korea and to escalate the war by crossing the 38th Parallel. Diplomatic advisers were more strongly committed to a token British commitment at the outset, but shared the fear of escalation. There was universal concern in Whitehall at the possible use of the atomic bomb. The attitude of the Chiefs of Staff reflected the views of some of their American counterparts, such as General Bradley. [103] In part the British Chiefs of Staff opposed using the bomb because:

> Militarily and psychologically the use of the bomb on targets in Korea when considered in relation to its killing and destructive effect under likely conditions in Korea, will not prove decisive. [104]

Yet the British service chiefs were also concerned with the broader strategic considerations, which went beyond narrow appreciations of the effect in Korea. The use of atomic weapons against Chinese targets "would bring in Russia and a 3rd World war could hardly be avoided." [105] For the Foreign Office and for Attlee this was a preoccupying concern, and the search for British influence over Truman's decision was the key objective. It was fuelled by recognition that in a global war American bombers in Britain would be priority targets for the Soviets. Equally, the overriding concern of the Chiefs of Staff, the Foreign Office, and the government was to secure the American commitment to Western Europe.

The Cuban Missile Crisis

In 1950 Britain was not a nuclear power. It did not begin to deploy operational nuclear weapons until 1955 and there is no evidence that these played any role in the Suez crisis when Soviet leaders implied willingness to use nuclear weapons against Britain. [106] It is known that in 1973 the U.S. government raised the alert status of its European forces to DEFCON-3 without prior consultation with the Heath government. [107]

So far as is known the only occasion when British nuclear weapons were alerted during a period of international tension was in October 1962. During the Cuban missile crisis it is now clear that the alert status of both British and U.S. nuclear forces based in Britain was raised, though it is still unclear whether the respective political authorities were responsible or indeed fully aware of the measures taken by the military. This raises interesting questions about the management of the crisis by the British government, and certainly suggests that certain military figures adopted a more hawkish approach to preparing for nuclear war. Equally, it is still extremely unclear how the British government and its advisers would have responded if the crisis had deteriorated and the risk of war in Europe, over Berlin or Turkey, had grown.

Contrary to the impression created in his memoirs [108] Macmillan's immediate response to Kennedy's declaration of a blockade was concern and doubt over the President's actions. Though promising Kennedy "all the support we can in the Security Council" [109] Macmillan alluded to doubts about the legality of the American blockade (or "siege" of Cuba as described it in Cabinet). [110] The Prime Minister was deeply concerned about possible Soviet counter-measures that might precipitate escalation to world war, or should Khrushchev succeed in trading Berlin for Cuba, to the disintegration of the Western alliance. According to his biographer, Macmillan nevertheless considered advising Kennedy to invade Cuba and have done with it. [111] Instead he cabled Ambassador Ormsby-Gore in Washington:

> Since it seemed impossible to stop his action I did not make the effort, although in the course of the day I was in a mind to do so. I feel sure that a long period of blockade, and possibly Russian reaction in the Caribbean or elsewhere, will lead us nowhere. [112]

At the outset Macmillan was concerned about a Soviet response elsewhere—"it might be in South-East Asia, in Iran, possibly in Turkey, but more likely in Berlin." The prospect of escalation in Europe was discussed by Macmillan and Kennedy on the telephone during the crisis. [113] We do not yet have the Joint Intelligence Committee appreciations on the likelihood of war either in the Caribbean or Europe, though Lord Home, the Foreign Secretary, told the Cabinet on the 23rd October,

> Soviet setbacks on agriculture and the failure of their economy to meet earlier hopes of overtaking the West might be leading Mr Khrushchev into a military gamble...But he himself thought it unlikely that Mr Khrushchev wanted to start a war. It was more probable that he was seeking to improve his bargaining position, particularly in relation to Berlin, and that he wanted the United States Government to appreciate from their own experience the Soviet reaction to the presence of United States' missile bases in Europe close to Russia and their determination to secure their removal. [114]

The cabinet met twice during the week of the crisis but did not discuss military preparations or contingencies, and the Chiefs of Staff did not attend either meeting. During the Berlin crisis in 1961 the government gave considerable thought to crisis machinery within Whitehall. During the Cuban crisis no such machinery was activated. There were meetings among the Chief of the Defence Staff, the Minister of Defence, and the Prime Minister on 25 October, and on 28 October key officials were assembled.

At the outset of the crisis the Chiefs of Staff considered various courses of action arising from the American decision to blockade Cuba and made various suggestions to ministers which were accepted. [115] In addition, contingency plans for the evacuation of British citizens from Cuba were reviewed. It is not clear what actions the Chiefs of Staff recommended but a number of British military activities did take place, [116] in addition to American military activities on British territory.

From the outset the government was opposed to the idea of NATO mobilisation, and the Foreign Secretary cabled Washington for Dean Rusk to be advised against "some kind of alert" in advance of possible trouble in Berlin. [117] Macmillan made clear his views to General Norstad at dinner on 22 October when he told SACEUR "that mobilisation had sometimes caused war."[118]. Yet it is clear that British strategic nuclear weapons were alerted during the Cuban missile crisis. According to the Commander-in-Chief of Bomber Command, Air Marshal Sir Kenneth Cross, "We very quickly brought the whole [V-bomber] force to readiness without any fuss or without any bother." [119] According to Air Vice Marshal Menaul, then Senior Air Staff Officer at Bomber Command HQ, Bomber Command was already engaged in one of its frequent alert-and-readiness exercises when they learned from SAC that the Americans had moved to DEFCON-2 and took "preliminary measures." [120] The exercise was extended on Friday 26 October, and on the Saturday the Bomber Command was formally placed on Alert Condition 3. [121] Fifty-nine of the RAF's 60 Thor IRBMs were at fifteen-minutes readiness [122] as were the Vulcan, Victor, and Valiant nuclear bombers, none of which appear to have been airborne.

Menaul states that "it is doubtful if more than a handful of people outside of Bomber Command had any idea of what happened." [123] It appears that the Foreign Secretary was oblivious of the alert and the Minister of Defence was only told afterwards. [124] Lord Zuckerman states that,

> I do not recall that the Prime Minister, the Secretary of State or Lord Mountbatten, the Chief of the Defence Staff, were directly concerned with what Bomber Command would do...to the best of my knowledge, the Ministry of Defence did not order him (Air Marshal Cross) to increase the readiness of his force. [125]

It thus appears that when British nuclear forces were alerted in 1962 ministers were unaware of this crucial fact, and that the action may well have been at variance to the Prime Minister's wishes. It appears that the measures were initiated by the commander of Bomber Command rather than the Chiefs of Staff. However it should be noted that Air Marshal Cross does not appear to have exceeded his authority. Political authorisation was only required under Alert Condition 2, when the V-bombers moved to their dispersal airfields. [126] As this did not happen, Cross could act on his initiative.

How military officials saw the crisis and what advice they offered is not wholly clear. Some contingency actions were set in hand in the Caribbean [127] and with regard to Berlin. One fascinating account has been provided by Lord Zuckerman:

> The fateful Sunday, 28 October, was approaching when, if the Russians did not give way, it was widely expected that 'the nuclear balloon' would burst. On the Saturday, word was sent to the Ministry of Defence's three top staff—the Chief of the Defence Staff, the Permanent Under-Secretary and the Chief Scientific Adviser—as well as to the Chiefs of Staff, to meet the Secretary of State the next morning. When I joined Peter Thorneycroft, the Minister, I learnt that the crisis was over, and that the Russians had accepted the American's terms without loss of face. We sat around the table just looking at each other. Dickie [Mountbatten] broke the silence. 'Well what would we have done if the Russians had not pulled out'. No-one knew, but he was the only one to put the question. To the best of my knowledge, neither he nor anyone else has yet provided an answer. Perhaps there is none. [128]

It is now clear that Macmillan was prepared go to considerable diplomatic lengths to help defuse the crisis, including immobilising the Thors as a quid pro quo for the Soviet missiles in Cuba [129]. Yet those same missiles were erected, targeted, and prepared for firing, apparently unbeknownst to the Prime Minister. This gives some support to the view that subordinate military commanders take a more robust approach to fighting a nuclear war. Yet there is no evidence to suggest the Chiefs of Staff counselled anything other than caution to ministers.

Conclusion

The notion that the British military have been intrinsically militarist in their attitude to the use of force can be readily discounted. Richard Betts' conclusion that military commanders were often less belligerent, that they were frequently divided, and that their advice echoed that of civilian officials is certainly applicable to the examples above. In the Falklands war the navy was keen to use force and the views of the First Sea Lord strayed into political opinion. Yet if Korea and Suez are typical, concern with political and strategic judgements was the norm among the British Chiefs of Staff. This might be seen as a vestigial legacy of the empire. Yet what is clear in both conventional and nuclear decision-making is that British officials, whether in uniform or not, have had to grapple with the reality of Britain's newly subordinate relationship with the United States. Increasingly, British decisions about nuclear weapons were inextricably involved with American policy-making.

Betts' conclusion that military advisers can be reluctant to commit troops but subsequently keen to escalate is not borne out in the case of Korea and Suez. It is clearly of great importance to nuclear strategy. Here there was agreement on the need for a British national deterrent, and recognition of the primacy of the U.S. deterrent for European security. However, on the available evidence there is little to suggest a coherent military perspective over time that can be distinguished from that of civilian advisers in Whitehall toward NATO strategy and Britain's role therein. Such conclusions are unavoidably tentative, but what does seem clear is that the British military's attitude to the use of force forms part of a national consensus (among policy-makers), which has been an important characteristic of British strategic culture.

Notes

1. Richard K. Betts, *Soldiers, Statesmen, and Cold War Crises* (Harvard University Press, 1977) p. 4.
2. Ibid, pp. 4-5.
3. Ibid. p. 4.
4. Scott D. Sagan, "The Nuclear Sword and Scepter: Civil-Military Relations and the Perils of Proliferation" Draft paper at conference on Civil-Military Relations and Nuclear Weapons, Center for International Security and Arms Control, Stanford University (June 1993) pp. 17-8. For Betts discussion see *Soldiers*, op. cit., pp. 104-114.
5. For an account of Churchill's troubled relationship with the military during the war see Michael Carver, "Churchill and the Defence Chiefs" in Robert Blake and William Roger Louis, *Churchill* (Oxford University Press, 1993) pp. 353-74.
6. For a recent account see Mark Urban, *Big Boys'Rules-The SAS and the Secret Struggle Against the IRA* (Faber and Faber, 1992). See also Jonathon Bloch and Patrick Fitzgerald, *British Intelligence and Covert Action* (Brandon, 1983).
7. Brooke Diaries, 5 April 1946, Alan Brooke papers, 5/12. Imperial War Museum.
8. Public Record Office (PRO) : DO (47) 23, 7 March 1947, CAB 131/4.
9. See Philip Darby, *British Defence Policy East of Suez 1947-1968* (Oxford University Press, 1973).
10. See Nigel Hamilton, *Monty,Vol. 3.,The Field-Marshal 1944-1976* (Sceptre, 1986) p. 676.
11. Denis Healey, *The Time of My Life* (Michael Joseph, 1989) p. 332.
12. Both Healey and Ken Flowers, head of the Rhodesian security service, believe that Wilson's main mistake prior to the declaration of independence was to make clear to Smith that he had ruled out military intervention. Healey, ibid., pp. 331-3, Ben Pimlott, *Harold Wilson* (HarperCollins, 1992) pp. 368-71.
13. For an account of Templer's role in Malaya, see John Cloake, *Templer—Tiger of Malaya* (Harrap, 1985). For analyses of the British counterinsurgency campaign see Robert Thompson, *Defeating Communist Insurgency* (Chatto and Windus, 1966) and Anthony Short, *The Communist Insurrection in Malaya 1948-60* (Frederick Muller, 1975).
14. The British naval Commander-in-Chief, Admiral Brind, had already decided on his own initiative to provide assistance to his American counterpart. Anthony Farrar-Hockley, *The Official History of the Korean War—Volume1: A Distant Obligation* (HMSO, 1990) p. 43.
15. Ibid., p. 47.
16. Ibid., pp. 99-102.

17. Ibid., p. 101.
18. PRO: FO to Washington, Telegram 5028, 13 November 1950, FO 371/84113, quoted in Michael L. Dockrill, "The Foreign Office, Anglo-American Relations and the Korean War, June 1950–June 1951," *International Affairs* (Vol 62, No 3, Summer 1986) p. 463.
19. PRO: FO371/84089 (FK 1022/22) letter from Sir Oliver Franks to Prime Minister, 15 July 1950, quoted in Farrar-Hockley, op. cit., p. 103.
20. Farrar-Hockley, op. cit., p. 103.
21. PRO: DO (50) 15th, 24 July 1950, CAB 131/8.
22. Betts, op. cit., p. 4.
23. Ibid., p. 5
24. Farrar-Hockley, op. cit., p. 217.
25. Ibid.
26. PRO: COS (50) 160th, 3 October 1950, DEFE 5/21.
27. Farrar-Hockley, op. cit., p. 223.
28. See Dockrill, op. cit.
29. Philip Williams, *Hugh Gaitskell* (Jonathon Cape, 1979) pp. 418-43.
30. Keith Kyle, *Suez* (Weidenfeld and Nicolson, 1991) pp. 88, 224, 225-6, 509.
31. Ibid., p. 201.
32. Philip Ziegler, *Mountbatten* (Collins, 1985) pp. 540-1.
33. Ibid., p. 542.
34. Ibid.
35. Ibid.
36. Ibid., p. 545.
37. Ibid., p. 543. see Kyle, op. cit., for detailed discussion of British military planning.
38. Ziegler, op. cit., pp. 539-40.
39. See for example Mountbatten's comments on the potential political consequences in David Carlton, *Britain and the Suez Crisis* (Basil Blackwell, 1988) p. 61.
40. These can be evaluated mainly thanks to the report of a group of Privy Counsellors under Lord Franks who had unprecedented access to defence, diplomatic, and intelligence records and officials, and who produced a unique, if controversial, account of British policy making. See *Falkland Islands Review, Report of a Committee of Privy Counsellors* (Cmnd 8787,January 1983). For an analysis of the report see Alex Danchev (ed) *International Perspectives on the Falklands Conflict* (Macmillan, 1992) pp. 127-52. For the best overall account see Lawrence Freedman and Virginia Gamba-Stonehouse, *Signals of War* (Faber and Faber, 1990).
41. For an analysis of the Nott review see John Baylis, *British Defence Policy: Striking The Right Balance* (Macmillan, 1989) pp. 104-17.
42. Franks, para. 112.
43. Ibid., para. 225.
44. Ibid., para. 223.
45. Denys Blakeway, *The Falklands War* (Sidgwick and Jackson, 1992) p. 36.
46. Ibid., pp. 36-7.
47. Margaret Thatcher, *The Downing Street Years* (HarperCollins, 1993) p. 179. The formal Cabinet decision was taken on 2 April.
48. Blakeway, op. cit., pp. 36-7.
49. Thatcher, op. cit., p. 223.
50. The Labour opposition supported military action, though it preferred a diplomatic settlement. At the outset, the party leader, Michael Foot, strongly supported a military response. His shadow Foreign Secretary, Denis Healey, who was abroad, has suggested that he would have tried to moderate Foot's rhetoric. Healey, op. cit., p. 496.
51. Arthur Gavshon and Desmond Rice, *The Sinking of the Belgrano* (Secker and Warburg, 1984). See also Tam Dalyell, *Thatcher's Torpedo—The Sinking of the Belgrano* (Cecil Woolf, 1983). For the Parliamentary investigation into the sinking of the *Belgrano* see the report of the House of Commons

Select Committee on Foreign Affairs—*Events Surrounding the Weekend of1-2 May1982* (HMSO, 22 July 1985).
52. Freedman and Gamba-Stonehouse, op. cit., p. 259.
53. For an insider's account of this see Clive Ponting, *The Right to Know—The Inside Story of the Belgrano Affair* (Sphere Books, 1985).
54. Thatcher, op. cit., p. 223.
55. Ibid., p. 224.
56. Betts, op. cit., p. 108.
57. Ibid.
58. See, for example, Strobe Talbott, *Deadly Gambits* (Picador, 1985).
59. In 1960 the Labour party adopted the policy of "unilateral nuclear disarmament" and in the 1964 election opposed the idea of an independent deterrent. In the 1983 and 1987 general elections Labour sought an end to Britain's nuclear capabilities and the removal of American nuclear weapons from British territory.
60. Margaret Gowing, *Independence and Deterrence—Britain and Atomic Energy,1945-1952,Volume1: Policy Making* (Macmillan, 1974) p. 184.
61. PRO: Hollis to Attlee, 10 October 1945, PREM 8/116.
62. See PRO: "The Atomic Bomb" memorandum by the Prime Minister, August 1945, PREM 8/116, discussed in McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (Random House, 1988) pp. 150-7.
63. Gowing, op. cit., pp. 183-4.
64. Peter Hennessy, *Never Again, Britain 1945-1951* (Jonathon Cape, 1992) pp. 267-72.
65. Navias, op. cit., pp. 116-7.
66. For a good overview of the period until 1980 see Lawrence Freedman, *Britain and Nuclear Weapons* (Macmillan 1980). For analyses of the Trident decisions see Colin McInnes, *Trident—The Only Option?* (Brassey's, 1986) and John Greenaway, Steve Smith, and John Street, *Deciding Factors in British Politics: A Case Studies Approach* (Routledge, 1992) pp. 183-210.
67. Although the Treasury's role was most obvious in planning and procurement it is interesting to note that Harold Macmillan advised Margaret Thatcher to exclude the Treasury from the War Cabinet during the Falklands war. Thatcher, op. cit., p. 188.
68. These are: Margaret Gowing, *Britain and Atomic Energy 1939-1945* (Macmillan, 1964), *Independence and Deterrence, Britain and Atomic Energy,1945-1952,Volume 1*, op. cit., and *Independence and Deterrence, Britain and Atomic Energy, 1945-1952, Volume 2 Policy Execution* (Macmillan, 1974); Ian Clark and Nicholas J. Wheeler, *The British Origins of Nuclear Strategy 1945-1955* (Oxford University Press, 1989); Martin Navias, *Nuclear Weapons and British Strategic Planning 1955-1958* (Oxford University Press, 1991).
69. See his speech in the House of Lords,*Hansard* (House of Lords) 18 December 1979, vol. 403, col. 1628.
70. Clark and Wheeler, op. cit., pp. 148-9.
71. For Mountbatten's views see his "The Final Abyss?" in Earl Mountbatten, Lord Noel-Baker and Lord Zuckerman, *Apocalypse Now?* (Spokesman, 1980) pp. 9-14. For those of Carver, see *Nuclear Weapons in Europe* (Council for Arms Control, 1983).
72. A rare exception to the convention that civil servants do not express opinions on policy is Michael Quinlan (then Permanent Secretary at the Ministry of Defence) in "Nuclear Weapons and the Abolition of War," *International Affairs* (Vol. 67, April 1991) pp. 293-301.
73. Solly Zuckerman, *Scientists and War* (Hamish Hamilton, 1966) ch. 1.
74. Ibid., p. 9.
75. Mountbatten, Noel-Baker and Zuckerman, op. cit., p. 70.
76. For discussion of his views see Michael Howard's chapter in John Baylis and John Garnett, (eds.) *Makers of Nuclear Strategy* (Pinter, 1991) pp. 153-63.
77. Clark and Wheeler, op. cit., pp. 131-2.
78. See "Judgement and Control in Modern Warfare" address given at SHAPE in May 1961,

reproduced, with some deletions, in Zuckerman, *Scientists and War*, op. cit., pp.101-21.
79. Gowing, *Independence and Deterrence*, Volume 2, op. cit., pp. 405-50.
80. Clark and Wheeler, op. cit., pp. 91-111. For a critique of Clark and Wheeler's argument that Britain developed a counter-force targeting strategy from 1946-9, see Alan Macmillan, *Britain and Atomic Weapons, The Development of a Deterrence Frame of Mind* (Aberystwyth International Politics Research Papers, No. 9, 1991).
81. The 1952 Global Strategy paper was finally released (with minor deletions) in 1993. See Alan Macmillan and John Baylis, "The British Global Strategy Paper of 1952," *Journal of Strategic Studies*, Vol. 16, No. 2, June 1993. For an analysis of Buzzard's views see the chapter by John Baylis in Baylis and Garnett, *Makers of Nuclear Strategy*, op. cit., pp. 136-52.
82. See Clark and Wheeler, op. cit., for discussion.
83. PRO: GEN 75/3, 26 September 1945, PREM 8/116.
84. Attlee, "The Atomic Bomb," op. cit.
85. See Navias, op. cit., pp. 46-55.
86. See Marc Trachtenberg's essay "A Wasting Asset, American Strategy and the Shifting Nuclear Balance, 1949-1954" in Trachtenberg, *History and Strategy* (Princeton University Press, 1991) pp.100-152 and Scott Sagan, "The Nuclear Sword and Scepter," op. cit., pp. 16-31 for discussion of these issues.
87. Lord Moran, *Winston Churchill, The Struggle for Survival 1940-1965* (Constable and Company, 1966) p. 505. Apparently, Bertrand Russell also advocated preventive war in 1946 if the Soviets rejected American proposals for the international control of atomic energy. Gowing, *Independence and Deterrence,. Volume* 2, op. cit., pp. 497-8.
88. Clark and Wheeler, op. cit., p. 101.
89. Ibid., p. 12.
90. PRO: COS (47) 57th, 23 April 1947, DEFE 4/3.
91. For an account of British attitudes to the development of Flexible Response see Jane Stromseth, *The Origins of Flexible Response* (Macmillan, 1988) pp. 151-74. For the disagreements among the Chiefs of Staff see Solly Zuckerman, *Monkeys,Men and Missiles* (Collins, 1988) especially pp. 270-306.
92. Clark and Wheeler, op. cit., p. 194.
93. PRO: "Strategic Target Policy for Bomber Command" Memorandum by the Chiefs of Staff, COS (57) 224, 16 October 1957, AIR 8/2201.
94. McInnes, op. cit.
95. Lawrence Freedman, "British Nuclear Targeting" in Desmond Ball and Jeffrey Richelson, *Strategic Nuclear Targeting* (Cornell University Press, 1986) p. 124.
96. Navias, op. cit., p. 190.
97. Gowing, *Britain and Atomic Energy, 1939-45*, op. cit., p. 439.
98. Ibid., p. 447.
99. For an account of British attitudes see Gowing, ibid., pp. 370-86. Sir John Anderson and Lord Halifax both had misgivings, but there is no indication that these or other doubts were communicated to Churchill. Ibid., p. 371.
100. Winston Churchill, *History of the Second World War—Triumph and Tragedy*, (Cassell, 1953) p. 553.
101. Hastings Ismay, *The Memoirs of General the Lord Ismay* (Heinemann, 1960) p. 401. It should be noted that Ismay's remarks refer to the explosion of the test bomb, not the use of the weapon against Hiroshima.
102. Clement Attlee, "The Hiroshima Choice," *Observer*, 6 September 1959, quoted in Herbert Feis, *The Atomic Bomb and the End of World War 2* (Princeton, 1968) p. 114.
103. Clark and Wheeler, op. cit., p. 141.
104. PRO: COS (50) 191st, 1 December 1950, DEFE 4/38.
105. Ibid.
106. Navias, op. cit., pp. 188-91.

107. Simon Dukes, *US Defence Bases in the United Kingdom* (Macmillan, 1987) pp. 163-7.
108. Harold Macmillan, *At the End of the Day* (Macmillan, 1973) pp. 180-220.
109. PRO: FO Telegram 7396, 22 October, PREM 11/3689.
110. PRO: C.C. (62) 61st, 23 October 1962, CAB 128/36.
111. Alistair Horne, *Macmillan,1957-1986* (Macmillan, 1989) p. 365.
112. PRO: FO Telegram 7395, 22 October 1962, PREM 11/3689.
113. For accounts of these conversations see Macmillan, and Horne, op. cit. Horne states that Macmillan used the transcripts 'almost *inextenso*,' p. 667.
114. PRO: C.C. (62) 61st, op. cit.
115. PRO: COS (62) 67th, 25 October 1962, DEFE 4/148. The minutes of the previous meeting, at which the recommendations were discussed, have not yet been released.
116. For recent accounts see Len Scott, "La Grande-Bretagne et la Crise de Missiles" in Maurice Vaisse, *L'Europe et la Crise de Cuba* (Paris, Armand Colin, 1993) pp. 67-82 and Stephen Twigge, "Anglo-American Air Force Collaboration and the Cuban Missile Crisis: A British Perspective" paper presented to the 1993 Air Power History Symposium, Boiling Air Force Base, Washington, September 1993.
117. PRO: FO Telegram 7383, 22 October 1962, PREM 11/3689.
118. Macmillan's diary entry, 22 October 1962, quoted in Macmillan, op. cit., p. 190.
119. *The Nuclear Age* Oral History, Liddell Hart Centre for Military Archives, King's College, London. In the transcript the word "resonance" appears for "readiness." I am grateful to the Trustees of the Liddell Hart Centre for permission to quote Air Marshal Cross.
120. Stewart Menaul, *Countdown Britain's Strategic Nuclear Forces* (Robert Hale, 1980) pp. 114-5.
121. Bomber Command was placed on Alert Condition 3 (precautionary alert) at 1300 on 27 October, PRO: Headquarters No 1 Group, Operations Record Book, AIR 25/1703.
122. PRO: Commander-in-Chief's Conference of Group, Station and Squadron Commanders held at RAF North Luffenham on 14 and 15 November 1962, AIR 8/2689. See also Menaul, op. cit., p. 114-5.
123. Ibid., p. 116.
124. Scott Sagan, *The Limits of Safety: Organizations, Accidents and Nuclear Weapons* (Princeton: Princeton University Press, 1993) pp. 111-3.
125. Ibid., p. 112n.
126. For details of the bomber alert conditions see PRO: RAF Waddington Station Alerting System, March 1962, AIR 28/1657 and Operation Order 38/62—Measures to Exercise the Readiness of Bomber Command—Exercise "Mick," 2 November 1962, AIR 24/2689.
127. Twigge, op. cit., pp. 19-20.
128. Zuckerman, op. cit., p. 303.
129. Macmillan, op. cit., pp. 212-3.

Civil-Military Relations, Strategic Conduct, and the Stability of Nuclear Deterrence in South Asia

Peter R. Lavoy
National Security Affairs Department, Naval Postgraduate School, Monterey, California

The end of military rivalry between the United States and the Soviet Union has lowered the danger of nuclear conflict between the erstwhile superpowers, but nuclear war remains a serious fear in the post-cold war era. In addition to the five declared nuclear powers, several other states can now develop and deploy nuclear devices.[1] Conventional wisdom holds that one or more of these emerging nuclear states, all of whom are beset by domestic political instabilities and regional military disputes, eventually will detonate a nuclear weapon, either intentionally or inadvertently.[2] Having already fought three wars and more than once having flirted with a fourth, India and Pakistan are often identified as the two countries most likely to wage a nuclear war.[3] This concern is exaggerated. I show that the risk of nuclear conflict in South Asia is significant but controllable with the effective application of arms control and confidence-building measures and the continued stability of the civil-military structures in both India and Pakistan.

Arms Control: Managing the Risk of Nuclear War

Washington and Moscow regulated the dangers of their global nuclear rivalry through a series of unilateral actions, reciprocal measures, and formally negotiated agreements to establish mutual trust in a stable order of political and military conduct. In contrast, New Delhi and Islamabad have been slow to instill confidence and control their military competition. Indian and Pakistani leaders have learned to conduct military operations cautiously—they have concluded a handful of mutual confidence-building measures—but they do not yet accept arms control as a useful means to enhance military security and stabilize strained political relations. With both states engaged in costly and relatively unrestrained defense preparations, there loom over the subcontinent fears of surprise attack, military escalation, and even nuclear conflict.

Arms control was not instinctive for the superpowers. Almost two decades of hazardous cold war elapsed before Moscow and Washington embraced arms control as a vital part of their national security policies.[4] Early in the Cold War, the superpowers espoused lofty and

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propagandist proposals for general and complete disarmament. Gradually recognizing the futility of efforts to negotiate away the very forces on which they relied for national security, and shocked into action by the Cuban missiles crisis, Washington and Moscow finally began to pursue arms control in 1963, agreeing to a communications hotline in June, the Partial Test Ban treaty in August, and a ban on mass destruction weapons in space in September. A subsequent series of strategic arms reduction pacts, a score of mutual confidence-building measures, and some restraint in the development and deployment of military forces helped the superpowers avert the outbreak of global nuclear war.[5]

Although the historical circumstances are unique, nuclear arms control is suitable today for South Asia. We believe that arms control and confidence-building arrangements can help India and Pakistan avoid a war that neither side wants, minimize the costs and risks of their arms competition, and curtail the scope and violence of conflict should it occur again in South Asia.[6] Arms control is possible in South Asia because India and Pakistan both wish to avoid a fourth war. And it is essential for two main reasons.

First, because nuclear weapons are available to both states, the prospect of their use compels their careful control. Although neither India nor Pakistan has openly deployed nuclear forces, "both nations have nuclear weapons development programs and could, on short notice, assemble nuclear weapons."[7] According to one recent estimate, India possessed an inventory of about 290 kilograms of bomb-grade plutonium available for the manufacture of nuclear weapons at the end of 1991, enough for 50 to 60 weapons.[8] Although little is known publicly about the design and development of India's bombs—or even if India has produced any operational nuclear weapons systems—the 1974 "peaceful nuclear experiment" demonstrated the country's ability to manufacture nuclear weapons, and it is believed that the Indian Atomic Energy Commission conducts extensive research and development on smaller and more powerful nuclear explosives.[9]

On the other side of the border, Pakistan's enrichment plant at Kahuta is estimated to have produced between 130 and 220 kilograms of bomb-grade uranium by the end of 1991, enough material for 6 to 10 nuclear weapons.[10] Western intelligence agencies have reported Pakistani efforts to acquire, design, and construct the non-nuclear components needed to complete a functional nuclear weapon.[11] Pakistan and India both have aircraft capable of delivering nuclear weapons to targets inside the other's territory; and both states are developing, or seeking to obtain, ballistic missiles.[12]

India-Pakistan arms control is necessary also because each country engages in coercive strategic behavior—including provocative troop movements and military exercises near tense borders, alleged support for militant groups in unstable regions of the other country, and cross-border firing mainly along the line of control in Kashmir—and yet both governments understand that they can not afford escalation to full-scale military combat, much less nuclear warfare.[13]

In principle, arms control can enhance stability among states involved in fierce political disputes, but the stubborn sources of these disputes hinder efforts to control arms. In order to be successful, an arms control regime must alter at least some of the basic conditions underlying South Asia's cold war. In recent years a number of intriguing confidence- and security-enhancing measures have been proposed for India and Pakistan: a regional cutoff of fissile material production, a regional nuclear test ban, the placement of new and existing nuclear facilities under safeguards, extension of the nuclear no-attack pledge to cover population centers, strengthened international security assurances, regional risk-reduction centers, expanded and upgraded hotlines between military and political officials, and regular

exchanges of military personnel.[14] However, even the worthiest of these ideas cannot succeed without the prior creation of stable arms control customs and institutions in South Asia.

The aim of this paper is not to add to the already lengthy inventory of arms control and confidence-building proposals for India and Pakistan. As Ross Perot said in another context, plenty of good ideas already exist (several are described in the next section). Instead, this paper seeks to identify the many barriers impeding the creation of a regional arms control regime and to discuss how these barriers might be overcome. Inflexible institutions, persistent practices, and stubborn beliefs in and around the governments of India, Pakistan, and the United States obstruct efforts to instill confidence and enhance security in South Asia; I discuss these inhibiting conditions later in the paper. The following section examines the strategic relationship between India and Pakistan, discerns a set of specific military and nuclear problems in need of control, and evaluates existing or potential arms control "solutions" for each of these problems.

Nuclear Threats to Regional Security

Six specific concerns arouse consternation about the strategic and military consequences of nuclear proliferation in South Asia.[15] Experts fear that emerging nuclear-weapons states, such as India and Pakistan, may be led by internal or external circumstances to engage in preventive or preemptive military attacks, experience nuclear accidents or the unauthorized use of nuclear weapons, threaten or actually use nuclear arms for coercive purposes, or escalate a conventional conflict to the nuclear level.

Military Prevention

The first concern is that India's presumed nuclear superiority over Pakistan may create in New Delhi pressures for preventive war. Indian anxiety about the behavior of a nuclear-armed Pakistan or about the possible loss of strategic superiority could produce calls for decisive military action.[16] This fear became pronounced in the mid-1980s when a flurry of press accounts reported Indian contingency plans for preventive air strikes against the Kahuta uranium enrichment plant—the reported source of Pakistan's weapon-grade nuclear material.[17] Experts worried that India would try to do to Pakistan's nuclear weapon capabilities what Israel in 1981 and the U.S.-led coalition a decade later did to Iraq's nuclear facilities.[18]

A related concern is that nuclear forces could be used as part of a wider preventive war strategy. Such a military strategy underpinned Pakistan's war against India in 1965. India's surprising loss to China in the 1962 Himalayan border war led to a massive Indian effort to reinvigorate and reequip its armed forces. A deal with the Soviet Union to build on Indian soil a MiG aircraft assembly factory and the prospect that India might also get American F-104s from Washington helped to convince President Ayub Khan and his young foreign minister, Zulfikar Ali Bhutto, that Pakistan ought to take early military action against India if it ever were to wrest control of Indian-held Kashmir. According to Bhutto, time was on India's side: because of India's massive rearmament plans, within two or three years, India's military might would be such that "Pakistan would be in no position to resist her." India's

"ultimate objective" was nothing less than the "destruction" of Pakistan. Thus, the time to "hit back hard" was "now," to make it virtually impossible for India to embark on a total war against Pakistan for the next decade.[19] Pakistan's effort to cut Kashmir off from India—Operation Grand Slam—was a failure: Pakistan was forced to accept a humiliating UN cease-fire.

The failure of Operation Grand Slam has since dampened Pakistan's interest in further preventive military campaigns. Fears of a *nuclear* preventive strike in South Asia are abating for two reasons. First, Indian and Pakistani officials each believe that the other side has acquired the means to produce and employ at least several nuclear weapons. Islamabad and New Delhi probably reason that it is too late to prevent the development of military nuclear capabilities in South Asia. Moreover, any attack now carries the risk of nuclear retaliation.[20] Second, India and Pakistan have negotiated, signed, and implemented a formal pact essentially outlawing one important form of military prevention.

The Agreement on the Prohibition of Attack against Nuclear Installations and Facilities between Pakistan and India was signed by Benazir Bhutto and Rajiv Gandhi on 31 December 1988 and ratified on 27 January 1991. K. Subrahmanyam, then director of the Institute for Defence Studies and Analyses, floated the idea in July 1985 as part of a broad proposal for nuclear confidence-building between India and Pakistan.[21] Meeting in December 1985, Gandhi and Zia ul-Haq agreed in principle on the plan, under which:

> Each party shall refrain from undertaking, encouraging or participating in, directly or indirectly, any action aimed at causing the destruction of, or damage to, any nuclear installation or facility in the other country (Article I.).[22]

Article two of the pact mandates that at the beginning of each year the parties must exchange complete lists of the latitude and longitude of their nuclear facilities. In compliance with the accord, Islamabad and New Delhi exchanged these lists on 1 January 1992 and again on 4 January 1993.

The effectiveness of the nuclear no-attack pact is reduced by the reluctance of Islamabad and New Delhi to accept the legitimacy of the exchanged lists. Although neither government has made its inventory public, a Pakistani newspaper published what it claimed was an authoritative version of India's 1992 list of nuclear installations but questioned whether New Delhi had provided a complete accounting of its own facilities.[23] Mutual concerns that key installations were omitted from the 1992 lists exacerbated regional tensions and may even have heightened fears of military prevention: "The agreement does not protect the facilities not mentioned on the list," warned one Pakistani official.[24]

The mixed record of the nuclear nonaggression pact to enhance confidence and security in Islamabad and New Delhi suggests somewhat paradoxically that a prerequisite for effective confidence building is the prior existence of a considerable level of mutual trust. This observation supports a point developed by Colin Gray and revisited later in the paper: "Arms control can only till fields already cleared by hard political labor."[25]

Military Preemption

Western experts also worry about the "delicacy" of the subcontinent's first-generation nuclear forces: a small number of poorly hidden and weakly protected nuclear-weapons sites

in one country with limited early-warning capabilities could tempt the adversary to launch a preemptive military attack.[26] Because of Pakistan's limited strategic depth—all of Pakistan's air force bases are within range of India's bombers, and many are within range of India's Prithvi missile[27]—Islamabad may be forced to pursue a military doctrine of preemption, as it attempted against India at the outset of the 1971 Bangladesh war.[28] Recognizing Pakistan's strategic vulnerabilities and possibly fearing the proclivity of the Pakistan army to preempt, India also may be pressured to attack early in a crisis.[29]

India and Pakistan have not formally agreed to any mutual arrangement to reduce the prospect of military preemption, but such an agreement may not be necessary at this point in time. During the Cold War, the most effective measures Washington and Moscow employed to lower the risk of preemption included improving force readiness, dispersing weapons systems, increasing their mobility, and protecting them. The first two options involve loosening central control over nuclear forces and may increase the risk of another problem: unauthorized seizure or use of nuclear weapons. On the other hand, mobility and prevention are prudent and realistic force objectives. Although Lt. General Hamid Gul, former director of Pakistan's Inter-Services Intelligence Agency, told an American arms control expert that nuclear force survivability "...is not our issue. It is your concern,"[30] presumably Pakistan and India are taking steps to harden the shelters of their potential nuclear strike aircraft, upgrade air defenses around these and other nuclear installations, and introduce nuclear-capable mobile missiles such as the Prithvi and the M-11.

If the superpower experience is instructive, such unilateral military preparations may help more than any formal arms accord to enhance crisis stability in the subcontinent.[31] And again, the primacy of politics must be stressed. As Robert Jervis observes: "If relations remain extremely bad, war can occur even if strategic weapons are not vulnerable; if relations greatly improve, vulnerabilities will not be a major source of danger. Wars are caused predominantly by conflicts of political interests."[32]

Nuclear Accidents

Nuclear weapons systems, like nuclear power plants and many other modern, sophisticated technological systems, are inherently dangerous.[33] Accidental nuclear detonation is a risk for all states that possess nuclear weapons. For less technologically experienced and advanced states it can be an acute problem.[34] Little is known publicly about the safety and security of nuclear operations in India and Pakistan; thus the worst is feared.[35] Potentially catastrophic in their own right, nuclear accidents and operational failures can also have disastrous military repercussions. "In a crisis or conventional conflict," reasons Lewis Dunn, "a nuclear weapon accident, a command-and-control failure, or a breakdown of rudimentary, untested alert procedures may trigger nuclear escalation."[36]

India and Pakistan have not agreed to any formal measures to reduce the risk of accidental nuclear war. Such arrangements are worth pursuing. A possible model is the 1971 U.S.-Soviet Agreement on Measures to Reduce the Risk of Outbreak of Nuclear War. In the "Accidents Agreement," Moscow and Washington recognized that unilateral control procedures might not suffice to prevent the outbreak of a war resulting from technical malfunction, unauthorized actions, or a misinterpreted incident. The pact seeks to limit these possibilities by establishing certain procedures to be followed in the event of such an error. If India and Pakistan agree to acknowledge their own nuclear weapon "capabilities" or "materials," a similar arrangement for South Asia could be executed under bilateral or international auspices.

Unauthorized Nuclear Use

Terrorist violence afflicts both South Asian states; thus Western experts fear the prospect of nuclear weapons falling into the possession of a violent, separatist group.[37] A separate (although perhaps simultaneous) problem is usurpation of nuclear weapons control by a renegade element of the armed forces. Loss of governmental control over nuclear operations is seen as a particular concern for Pakistan, which has a long history of military intervention in domestic politics. This circumstance could also heighten pressures for Indian preemption: possible Indian doubts about the ability of the Pakistani political leaders to exercise control and restraint over nuclear decision-making could induce India to act precipitously in the next crisis or conventional war.[38]

Several American analysts have suggested "nuclear stability assistance" for emergent nuclear nations as a way of lowering the likelihood of accidents, terrorism, and unauthorized use.[39] Dunn and Giles, for example, suggest several specific aid packages for improving the security of nuclear forces (e.g., through the provision of PAL technology); increasing the safety of nuclear weapon systems through better designs that avoid unintended explosions; and improving the reliability of operational procedures.[40] Proponents of such technical assistance recognize that current international agreements and U.S. domestic law proscribe this kind of aid to emerging nuclear weapon states. Moreover, the provision of technical aid for the security, safety, and survivability of new nuclear forces might help to stabilize a regional deterrence relationship, but if it enhances the readiness and effectiveness of these forces it could make political and military leaders more comfortable with the idea of using nuclear weapons.[41]

The risk of unauthorized acquisition or use of nuclear weapons in South Asia, even in the absence of technical assistance, is not as high as Western observers fear. This is so for three main reasons. First, Indian and Pakistani officials invest heavily in physical security for their nuclear facilities. Few chances are taken with these important national resources. When communal violence broke out in Bombay in May 1984, for example, the Indian government quickly dispatched three army battalions, specialized in riot-control duty, to protect the Bhabha Atomic Research Center.[42]

Second, because the Indian and Pakistani armed forces are highly centralized and very loyal to the top echelons of military leadership, which in both countries displays considerable respect for political authority in national security matters, the prospect of unauthorized military action, including the seizure or use of nuclear arms, is remote. Third, the operational requirements of small, minimal deterrent forces mitigate the dangers of unauthorized use. These two points are not adequately known outside of South Asia. Thus brief discussions of civil-military patterns in India and Pakistan and the unique system of nuclear deterrence in South Asia follows.

Civil-Military Relations in India

The Indian armed forces operate under strict constitutional constraints and have a very limited role in decision making on national security issues. Inheriting an army steeped in the British tradition of absolute civilian control,[43] Nehru and the other civilian leaders of newly independent India created a system in which the military plays only a minute, advisory role in the shaping of defense strategy and security policies. Outside of one minor dispute in 1959 between military and civilian leadership over army administration,[44] and the more serious matter of military discontent over Nehru's (mis)handling of the 1962 military

campaign against China,[45] the Indian armed forces have accepted their restricted decision-making role without observable misgiving.

Except for the disastrous war against China, India has never faced a situation in which there was a sharp diversion between civilian and military approaches to military strategy. Thus there is little reason to fear military disobedience in security policy making. This is especially so in the nuclear area.

Decision making for India's military nuclear program has been and remains firmly in the control of the country's elected leaders. Prime ministers from Jawaharlal Nehru and Lal Bahadur Shastri through Indira and Rajiv Gandhi and now Narasimha Rao have dominated all significant decisions concerning the country's nuclear weapons program. The Indian army evidently has not been involved in any of these decisions;[46] however, the scientific leaders of India's Atomic Energy Commission (AEC) have been very influential in persuading the political leadership to approve incremental moves down the nuclear path.

After China conducted its first nuclear-weapon test in October 1964, for example, AEC chairman Homi Bhabha convinced Prime Minister Shastri to authorize research on nuclear explosions.[47] In October 1972 Indira Gandhi approved preparatory work for a nuclear explosive test (Peaceful Nuclear Explosion). A year later, when all "material problems" had been solved, Gandhi decided to go ahead with the experiment, which was conducted on 18 May 1974.[48] Reportedly, the military was completely out of the decision-making loop, other than the use of Army engineers to dig the hole needed for the test. The Cabinet was also kept in the dark, including the Defense Minister, who knew about the hole but little more. Mrs. Gandhi consulted only with the top leadership of the atomic-energy establishment and a very small group of advisers.[49] This pattern of personalized and instinctive political decision-making apparently persists for India's current nuclear weapons program.[50]

Although a loose coalition of hawkish scientists, bureaucrats, politicians, and defense analysts have urged the government to accelerate the nuclear bomb program and openly deploy weapons, no prime minister has ever approved such a bold policy shift.[51] According to former Army Chief K. Sundarji and defense expert K. Subrahmanyam, there have been no preparations for use or plans to integrate nuclear weapons use into the military doctrine of the Indian armed forces.[52]

The question remains on the time lag between a decision to make nuclear weapons and the actual assembly. Asked how quickly India could make a bomb in the event of an emergency, the chairman of the Indian Atomic Energy Commission, Dr. P. K. Iyengar said in late 1992: "that depends on how quick the requirement is."[53] He appears to have used the same language earlier in 1990: "In how much time we make it will depend on how much time we get."[54] Senior military officers reportedly "discuss the availability of nuclear weapons in private conversations" and "expect to have strategic nuclear bombs at short notice."[55]

If unauthorized use or control by the military as an institution is not a major worry, factionalism in the military is not a serious concern either. Although the Indian army has engaged in literally thousands of "aid-to-the-civil" operations to suppress domestic violence, this activity divided the armed forces on only one occasion. When the army assaulted the Golden Temple to root out Sikh extremists in June 1984, many Sikh soldiers, most of whom had been moved out of the Punjab before the attack occurred, deserted or mutinied. As many as 2,000 Sikh soldiers were arrested, and fifty killed.[56] Factionalism is a permanent concern in the armed forces of one of the world's most ethnically and linguistically heterogeneous countries, but the 1984 mutiny is the sole reported instance of serious disobedience in the history of independent India.

Civil-Military Relations in Pakistan

Although Pakistan has a long history of direct and indirect intervention by the military in governmental affairs, army officers have clashed with civilian decision makers several times over the planning of military and strategic policies, and military leaders (especially the chief of army staff) probably play a more central role in nuclear decision making compared to their Indian counterparts, the prospect of unauthorized nuclear control or use in Pakistan is not high. Military corps loyalty is as strong in Pakistan as in India: it is not likely that a renegade service faction will emerge, much less attempt to usurp control over nuclear weapons.[57]

Pakistan obviously inherited the same British view of civil-military relations as did India. Like Nehru, Mohammed Ali Jinnah, the founder of Pakistan, viewed military officers as "servants of the people." "You do not make national policy; it is we, the civilians, who decide these issues and it is your duty to carry out those tasks with which you are entrusted."[58] Jinnah's sudden death and a succession of greedy and incompetent politicians, however, created a reoccurring situation in which the Pakistan military has intervened directly and indirectly in political affairs in order to restore order in the country and to prevent or reverse civilian policies deemed damaging to the strength and integrity of the military. Each of these cases, with one exception—the Rawalpindi conspiracy—was conducted by the military as a corporate entity.[59] The Pakistan army has always been the most disciplined institution in the country and the least affected by kinship, ethnic, and religious considerations.

Pakistan's three military coups of October 1958, March 1969, and July 1977, and the score of less obvious instances of military interference in the affairs of state set Pakistan's pattern of civil-military relations well apart from India's, but it does not suggest a greater likelihood of unauthorized nuclear use. Unlike the present system of *civilian* nuclear-materials control in India, important decisions about Pakistan's nuclear weapons program probably are made jointly by the political leadership in Islamabad and the military command in Rawalpindi, with the military's consent an absolute requirement for any significant action. The Pakistan army was not always this deeply involved in the country's nuclear affairs.

The decision to launch Pakistan's nuclear-bomb program reportedly was made by Prime Minister Zulfikar Ali Bhutto at a secret meeting in Multan in January 1972, only one month after he had assumed power.[60] "Some fifty of Pakistan's top scientists and government officials" were present at the meeting, but it was Bhutto alone who made the fateful decision.[61] The military was not initially involved in bomb program. According to Stephen Cohen, "it was not until 1974 that the military seriously addressed itself to the strategic implications of an Indian—and then a Pakistani—nuclear weapon."[62]

It is generally believed that Zia ul-Haq controlled the nuclear program from the moment he wrested power from Bhutto in the July 1977 coup until he died in a mysterious plane crash in August 1988.[63] Prime Minister Mohammed Khan Junejo is reported to have paid a visit to the Kahuta enrichment facility but is believed not to have been taken into full confidence by Zia.[64]

Although all Pakistani leaders publicly assert that the prime minister directs the nuclear program with the president and army chief playing only advisory roles, it is generally believed that the military is responsible for physical control of Pakistan's nuclear weapons program. According to some reports, Prime Minister Benazir Bhutto (during her first term in office) "never paid a single visit to the sensitive installation (at Kahuta) nor had any control over Dr. Abdul Qadir Khan's projects.[65]

Recessed Nuclear Deterrence

Unlike the superpowers, India and Pakistan need not place their nuclear weapons under military control during peacetime; nor need they deploy large arsenals worldwide on land, sea, or underwater. As crises evolve, each country should have ample time to prepare for a nuclear exchange. India and Pakistan could keep their nuclear weapon components (nuclear explosive material, conventional high explosives, triggering devices, etc.) stored in disassembled form at civilian laboratories and separate from their delivery systems—in a condition that effectively precludes the theft or unauthorized use of operational nuclear weapons. According to General K. Sundarji, former Indian army chief:

> Very strong centralised negative controls can be exercised, if you are looking at it purely as a deterrent. If you're thinking of first use, on the other hand, then you have to decentralise. But if you see it purely as deterrence, there is no harm done if it is totally centralised, tightly held, because the response time is no longer critical.[66]

Prudent nuclear operations of this sort provide an important source of arms control and do not require time-consuming and politically contentious international negotiations.

Nuclear Coercion

The fifth regional security concern about nuclear proliferation relates images of the many disputes and antagonisms that threaten peace in the subcontinent with doubts about the reason and restraint of Indian and Pakistani leaders. Western analysts worry that a desperate or ambitious ruler of either state might try to use nuclear weapons to coerce or even to attack the other country in order to conquer territory or force political concessions. Even if Islamabad and New Delhi currently exercise caution in their mutual dealings, the fear is that a tyrannical figure could come to power during a governmental crisis and recklessly wield nuclear weapons against the foreign enemy. Because leaders of countries like India and Pakistan perceive the stakes of competition to be so high, some Western observers fear that they "may be ready to risk nuclear confrontation, if not even to accept a surprisingly high level of nuclear damage, in pursuit of their objectives."[67]

These concerns are overstated. Neither India nor Pakistan developed nuclear weapons with offensive or coercive military action in mind. As Stephen P. Cohen remarked fifteen years ago, nuclear weapons "are seen as defensive in character in the context of Indian or Pakistani possession. Those who advocate the acquisition of an Indian or Pakistani bomb view this step as protective insurance, the legitimate response of a relatively weak power to the threatening moves of neighbors or superpowers."[68]

Moreover, there is no cult of the offensive in South Asia; that is, the (incorrect) belief that the offense has a major advantage over the defense does not prevail in either country.[69] This is so for four main reasons. Neither state has exposed allies or vulnerable foreign possessions whose defense could require immediate aggressive action. Neither country has significant territorial ambitions (except in the case of Kashmir, though the sources of this dispute are more political and ideological than territorial).[70] Neither nation has expansionist political aims. And finally, offensive military strategies have rarely been pursued in South Asia. Even though they have long faced a much weaker adversary in Pakistan, Indian leaders from Nehru, Lal Bahadur Shastri, and Indira Gandhi to Rajiv Gandhi and the current prime

minister Narasimha Rao have been reluctant to support offensive military action; these leaders have never underestimated the high human, political, and economic toll any battle with Pakistan inevitably would entail. Although Pakistan did launch a preventive military strike against India in 1971, the obvious failure of this action and the subsequent increase in India's military power relative to Pakistan's has given pause to any thought of further offensive campaigns.

Despite frequent protestations to the contrary, India and Pakistan accept the political and territorial status quo everywhere in South Asia, except of course in Kashmir. In regard to the ongoing turmoil in Kashmir, and the intense Indian and Pakistani competition for control over this region, there is no reliable evidence that either side ever has issued a nuclear threat to influence the actions of its adversary—a point discussed at length below. South Asia's nuclear bombs are viewed as weapons of last resort. As one of India's leading defense experts, K. Subrahmanyam, puts it, "The main purpose of a third world nuclear arsenal is deterrence against blackmail," not blackmail itself.[71] The threat of nuclear coercion, therefore, is not the most pressing priority for arms control.

Military Escalation

Finally, Western observers fear that the next conventional war between India and Pakistan could quickly escalate into a nuclear conflict. Two general causes of nuclear escalation are the temptation of national leaders to use all weapons at their disposal in a vital political and military contest and the leadership's concern that enemy conventional military operations may jeopardize its ability to use nuclear forces later in a war—the option upon which the deterrent threat is based.[72] Several American analysts observed significant levels of military escalation during the Winter 1986-87 and Spring 1990 military crises between India and Pakistan. Many also believe that during the 1990 crisis, India and Pakistan came close to a nuclear exchange. According to then deputy national security adviser Robert Gates, who headed a U.S. crisis management mission to South Asia in May 1990: "Pakistan and India seemed to be caught in a cycle that they couldn't break out of. I was convinced that if a war started, it would be nuclear."[73] The circumstances surrounding each of these military crises deserves closer examination.

1986-87 Brass Tacks Crisis

The 1986-87 crisis initially involved a large Indian military exercise named *Brass Tacks*, a corps-level triennial exercise designed and conducted by General K. Sundarji. In response to the Indian troops movement and training in the Rajasthan desert, Pakistan apparently deployed its army, including its armored forces, into forward positions. The Indian army responded by occupying its traditional defensive positions, thus completing the escalation. Elements of brinkmanship, crisis manipulation, and escalation were all present; however, Indian and Pakistan leaders managed to de-escalate the predicament without violence.

There is one reason to believe that nuclear weapons cast a shadow over the events of 1986-87. The first semi-official unveiling of Pakistan's nuclear weapon capability occurred during this crisis. In a strange series of incidents, the Indian journalist Kuldip Nayar was contacted by the Pakistani journalist Mushahid Hussain and allowed to meet and interview the renowned nuclear scientist Abdul Qadir Khan on 28 January 1987—at the peak of the crisis. Dr. Khan allegedly told Nayar that Pakistan had succeeded in building the bomb and thus had gained a deterrent capability: "Nobody can undo Pakistan or take us for granted.

We are here to stay and let it be clear that we shall use the bomb if our existence is threatened."[74] Indian defense analysts viewed this as an attempt to convey a nuclear signal to head off the crisis. But for various reasons Dr. Khan's claims about Pakistan's military nuclear capability did not appear in print until 1 March 1987, by which time the crisis had receded.

1990 Kashmir Crisis

The 1990 crisis developed as Kashmiri separatist groups intensified an uprising in Indian-controlled Kashmir and as the Pakistan army conducted its large *Zarb-e-Momin* military exercise. Political leaders on both sides of the border made tough statements about events in Kashmir. Islamabad expected the impending independence of Indian-controlled Kashmir; New Delhi displayed a fierce determination to prevent such a development. The Indian army reportedly moved three divisions into Kashmir and one extra division into Punjab to forestall possible Pakistani military actions. Islamabad apparently inferred aggressive intent in these steps and indicated its alarm to the United States. At this point the U.S. Ambassador to India, William Clark, and his military attaches observed the defensive disposition of the Indian forces and reported this to Pakistan, thus defusing the situation substantially.[75]

Several questions remain unanswered concerning the role of nuclear weapons in the 1990 crisis. Seymour Hersh reports that the United States had observed Pakistani F-16s on full nuclear alert.[76] Did Pakistan alert its nuclear forces? If so, why? What Indian activity was Pakistan's nuclear threat designed to deter? Was the deterrent threat successfully communicated? Did it work? A Pakistani journalist, Shireen Mazari, claims that "one of the major factors in preventing the outbreak of an Indian-Pakistan war over Kashmir in 1990 was Pakistan letting India know its nuclear capability."[77] Her colleague, Mushahid Hussain agrees.[78] In contrast, after a discussion with the key Indian officials involved in the 1990 crisis, K. Subrahmanyam writes: "Whatever Mr. Gates may have discussed with Pakistanis no policy maker in India recalls his raising the issue of nuclear confrontation."[79]

Whether nuclear threats were made or not made, and whether they exacerbated or diffused the two recent South Asian crises, we can conclude that the most serious consequence of nuclear proliferation in the region—in addition to the prospect of nuclear accidents—is the potential for the escalation of a political crisis first to conventional military conflict and then to the nuclear level. How likely are these forms of military escalation? The history of India-Pakistan relations since the 1971 war and since the advent of military nuclear capabilities provides a mixed message.

On the one hand, India and Pakistan regularly engage in mid- to low-intensity warfare and frequently find themselves in tense circumstances. The anguish of partition and the suffering of three wars are not forgotten. Neither country is completely able to control certain elements of its population; as a result, domestic social and political disputes often spill across national borders and become bilateral disputes. Although separatist violence in Indian Punjab and Pakistani Sindh has receded, a military standoff continues along the line of control in Kashmir, where cross-border firings often occur. It is hopelessly naive to believe that crises can be prevented from arising in South Asia.

On the other hand, recent history shows that the region's crises can be contained. The turn of events in 1986-87 and 1990 proved that neither country desired to go to war. With the costly experience of the 1971 conflict still fresh in the minds of Indians and Pakistanis, the political and military leaders of both sides appreciate the very high price a fourth South Asian war would exact. The advent of nuclear weapons sharpens this awareness. "There is

a consciousness in India," Subrahmanyam remarks, "that in future Pakistan cannot be driven to a position where it would seriously consider the exercise of (its) nuclear option. That consciousness is already evident in India not repeating the strategy of hot pursuit adopted in 1965 against Pakistan-despatched armed gangs across the line of control in the state of Jammu and Kashmir."[80] Pakistan too is aware of the immense costs of escalation: several times in the last few years the Pakistan army had to stop, at the risk of firing on its own citizens, the march of Kashmiri militants across the line of control.

Can arms control help lower the risk of such escalation? Confidence-building measures to establish no first use or no early use of nuclear weapons and to improve crisis communication and decision making deserve investigation. Pledges to abstain from the first or early use of nuclear weapons possibly could help—at the margin—to stabilize a relationship of mutual nuclear deterrence in South Asia. Subrahmanyam has proposed such declarations between India and Pakistan, as well as on a wider basis involving all nuclear weapon states.[81] Sundarji argues that a no-first-use pact could help "forswear brinkmanship at the very early stages of a conflict," thus providing crisis stability.[82]

Pakistan could fear that under such a regime India's conventional military superiority could undermine Pakistan's ability to deter conventional aggression. As noted above, some Indian defense experts claim that the opportunity for conventional hostilities has passed with the advent of nuclear capabilities.[83] In a dire situation, of course, Islamabad would not be constrained by a no-first-use pledge. So what is the value added? Integrated into a broad regime of military arms control and confidence-building measures, no early use could help foster a climate of reliable expectations about each side's intentions and behavior during peacetime and possibly in crisis situations.

Arrangements for effective signaling and communication during peacetime and crises could further improve mutual understanding. The two sides now employ a "hotline" between the army director generals of military operations. There are suggestions for a similar mechanism between the chiefs of air operations in the two air forces.[84] Communication hotlines could be extended to key political leaders and others as well, for they too must be involved in managing a crisis. Establishing risk reduction centers in both countries could provide a way to bring together and facilitate communication between complete crisis management teams.

Regional Nuclear Security: A Mixed Picture

Although India and Pakistan are rapidly developing the capabilities to fight a devastating nuclear war, and remain far from working out a stable order based on mutual and minimal deterrence, the present strategic situation does appear to be manageable. Ever conscious since 1971 of the enormous costs of another regional war, whether conventional or nuclear, Islamabad and New Delhi successfully negotiated their way through several hazardous crises in recent years. Regional crisis-management skills—particularly in the area of escalation control—can be improved further.

With the mutual acceptance of arms control as a practical means to enhance military security and stabilize strained bilateral relations, Islamabad and New Delhi may be able to establish mutual confidence in a peaceful order of political and military conduct, even in the absence of a complete resolution of the region's outstanding political and territorial disputes. In order to accomplish this, however, the governments of India, Pakistan, and even the United States will have to alter the way they think about and make policy for nuclear security in South Asia.

Arms Control Regime: Obstacles and Requirements

Even the most deserving proposals for nuclear arms control or military confidence building in the subcontinent are likely to flounder unless India, Pakistan, and the United States can develop the institutions and attitudes required to facilitate and sustain effective force management arrangements. Today, four stubborn obstacles impede efforts to establish a viable arms control climate in South Asia: (1) the diplomatic preoccupation with nuclear disarmament to the detriment of more modest but also more feasible measures for nuclear restraint; (2) a reluctance to acknowledge the military purposes of Indian and Pakistani nuclear programs in order to develop a realistic debate about reasonable limits on regional nuclear forces and strategies; (3) an unwillingness of India and Pakistan to accept and implement arms control as a vital element of national security policy; and (4) an inability to transform the India-Pakistan strategic dialogue from tacit to explicit bargaining.

Inertia of Disarmament Diplomacy

A major obstacle to new thinking about nuclear deterrence and arms control in the subcontinent is the persistence of the long-espoused ideas of disarmament and denuclearization among the three key actors involved: India, Pakistan, and the United States. Traditional diplomatic postures on regional nuclear weapons issues are so firmly entrenched in the foreign policy bureaucracies of all three states that it is difficult for anyone even to consider altering them. Continued calls for the elimination of nuclear weapons at the global level by India, and within the region by Pakistan and the United States, inhibit creative thinking about arms control. Winds of change are blowing today in South Asia—prominent individuals in all three countries now argue the value of regional arms control over disarmament—but this new thinking remains hesitant and is yet to enjoy widespread support among policy elites.

India: Global Disarmament

India has long been an outspoken opponent of nuclear deterrence and arms control. Even before the country's 1947 independence, Jawaharlal Nehru campaigned to outlaw nuclear weapons. Like Mahatma Gandhi, Nehru argued that nuclear violence could not be countered by the threat of nuclear retaliation; such a condition eventually would spell suicide for mankind.[85] Every Indian prime minister since has characterized the doctrine of deterrence as immoral and forming an irrational basis for national security in the nuclear age. This view was expressed most clearly in the Delhi Declaration issued by Rajiv Gandhi and Mikhail Gorbachev in November 1986 and in India's Action Plan on nuclear disarmament presented to the United Nations in June 1988.[86] Welcoming the START II treaty signed by Washington and Moscow in January 1993, the Indian government urged the "nuclear weapon states to re-examine doctrines of nuclear deterrence which have been used by them in (the) past to justify expansion of their nuclear arsenals."[87]

India also has rejected nuclear arms control and confidence-building agreements as inadequate responses to the nuclear threat. Even during the peak of the East-West détente, Indian officials characterized superpower arms control agreements as incomplete and diversionary. New Delhi regarded the Soviet-American arms limitation treaties of the 1970s essentially as truces in the war against the nuclear arms race and it dismissed the confidence-building arrangements promoted in Europe under the Helsinki process as cosmetic measures

designed to distract from the real issues of ending the nuclear arms race and scaling down military forces in Europe.[88]

India makes a sharp distinction between "disarmament" and "arms control," consistently championing the former over the latter. Although largely ritualistic from the late 1940s through the 1970s,[89] Indian arguments in favor of nuclear disarmament became far more central and explicit in the 1980s.[90] Despite the accumulation of evidence in that decade about Pakistan's acquisition of military nuclear capabilities, the string of political advantages Islamabad gained through its espousal of regional denuclearization, the mounting international pressures on India to move toward regional arms limitations, and the increased domestic pressures for India openly to declare itself as a nuclear weapons power, New Delhi continued to advocate global nuclear disarmament.

This policy remains intact even as the world nuclear order has changed and the international diplomatic focus has shifted from East-West arms control to regional nonproliferation. Having long identified *horizontal proliferation* (an increase in the number of nuclear-armed states) and *vertical proliferation* (expansion and modernization of existing nuclear arsenals) as two sides of the same coin, India is more outspoken about the latter and insists that both problems must be solved simultaneously.[91] Stressing the importance of equity and justice in international nonproliferation efforts, most Indian policy makers and opinion shapers still see the global elimination of nuclear weapons as the only fair and effective way to curb the spread of military nuclear capabilities.[92] Popular support for this policy line, the bureaucracy's resistance to rethink it, and the reluctance of the political leadership to revise it are three factors that sustain India's disarmament diplomacy.

Pakistan: Regional Disarmament

If India is tethered to the goal of global denuclearization, the idea of regional disarmament preoccupies Pakistan. Pakistan did not participate as actively as its rival in international debates on nuclear weapons during the 1950s. When Pakistani officials became alarmed about India's military nuclear potential in the early 1960s, however, Islamabad initiated a campaign to draw international attention to the military implications of India's civil nuclear program and to raise the diplomatic costs to India of developing nuclear weapons. Although the policy means have changed over time, these objectives continue to guide Pakistan's arms control diplomacy.

From the early 1960s through the mid-1970s Pakistan sought to prevent India from going nuclear by encouraging international support for measures to stop the spread of military nuclear capabilities to all non-nuclear-weapon states. Pakistan was a hopeful proponent of a nuclear nonproliferation treaty. As early as 1962, President Ayub Khan urged the international community to conclude "a treaty to outlaw the further spread of nuclear weapons."[93] While acknowledging the need to control vertical proliferation, Pakistan's NPT negotiator, Agha Shahi, stressed that curbing horizontal proliferation (a problem that he said posed the greater threat to the security of non-nuclear-weapon states) was the "top priority,"[94] and insisted that "to tie the question of non-proliferation of nuclear weapons to other measures restricting the nuclear arms race could only result in an impasse."[95] In the end, Pakistan refused to sign the NPT because it was not binding on India, which refused to sign, and because it contained no mechanism for assuring the security of Pakistan and other non-nuclear-weapon states.[96]

Shortly after the NPT failure—and less than a year after Pakistan's loss to India in the 1971 war—Islamabad launched a two-track policy to match and contain India's growing

nuclear capabilities. First, Prime Minister Zulfikar Ali Bhutto assembled the nation's top scientists and bureaucrats at a secret January 1972 meeting in Multan and instructed them to develop a nuclear bomb for Pakistan.[97] Several months later Bhutto set in motion the second track—a diplomatic bid to elicit Indian denuclearization through a public campaign to rid South Asia of nuclear weapons. Originally announced at the unveiling of Pakistan's KANUPP reactor in November 1972, a South Asia Nuclear Weapon Free Zone (SANWFZ) plan was submitted by Pakistan to the UN General Assembly in November 1974, six months after India's nuclear test.[98]

Pakistan continued to pursue each policy track in the 1980s. As part of his diplomatic offensive against India, General Zia ul-Haq proposed six specific measures for regional disarmament: (1) joint India-Pakistan renunciation of the acquisition or manufacture of nuclear weapons (1978); mutual inspection of each side's nuclear facilities (1979); simultaneous acceptance of IAEA "full-scope safeguards" (1979); simultaneous accession to the NPT (1979); a bilateral nuclear test ban treaty (1987); and a multilateral conference under UN auspices on nuclear nonproliferation in South Asia (1987).[99] Prime Minister Nawaz Sharif added another proposition to this list in June 1991 when he called for the meeting of five powers—the United States, Russia, China, India, and Pakistan—to discuss the nuclear issue in South Asia. Owing to its global orientation, India has rejected all of these regional nuclear-disarmament proposals.

Pakistan's nuclear diplomacy provided two important benefits during the 1970s and 1980s. First, it put India on the defensive and made New Delhi appear intransigent. Pakistan's proposals for regional disarmament shifted the burden of action to India, which could be counted on to reject any regional approach to nuclear arms limitation. Islamabad's disarmament posture also provided a convenient cover for Pakistan's own pursuit of a military nuclear capability. Its calls for regional denuclearization helped mute growing U.S. apprehension during the 1980s about the progress of Pakistan's nuclear bomb program. Although Pakistan continues to put some pressure on India to negotiate regional disarmament, Islamabad has not been able to persuade the United States to resume the military assistance relationship it terminated in October 1990. Pakistan's nuclear diplomacy has lost its effectiveness.

United States: Nuclear Nonproliferation

As part of its global nonproliferation policy, the United States has long advocated nuclear disarmament for South Asia. U.S. efforts to curb the bomb's spread rest on the premise that danger and instability inhere to new nuclear weapon systems; more is always seen as worse. Although Washington has shifted its strategies and tactics for controlling the bomb's spread globally and in South Asia, preventing the emergence of new nuclear states has been a steady goal.[100] It is now a priority; in the aftermath of the Cold War, the dissolution of the Soviet Union, the Gulf War, the activities of the IAEA and the UN Special Commission in Iraq, the North Korean nuclear standoff, and the presidential election, nuclear nonproliferation has emerged as a pre-eminent U.S. security concern.

While the Clinton administration has not yet formulated a comprehensive global nonproliferation strategy,[101] its policy toward South Asia is clear. The administration's April 1993 "Report to Congress on Progress Toward Regional Nonproliferation in South Asia" specifies that the U.S. objective "is first to cap, then over time reduce, and finally eliminate the possession of weapons of mass destruction and their means of delivery."[102] In pursuit of this goal, Washington stresses nonproliferation in special bilateral discussions with New

Delhi and Islamabad, encourages both states to sign the NPT, urges them to cease the production of fissile material for weapons purposes on a unilateral or regional basis, withholds economic and military assistance from its erstwhile ally Pakistan until nonproliferation progress can be verified, supports direct high-level Indo-Pakistani discussions on regional security and nonproliferation, and engages other states—such as Russia, Britain, France, Germany, and Japan—to undertake bilateral nonproliferation discussions with India and Pakistan.

The United States has little to show for all of this effort. After a brief upswing in Indo-American relations following the end of the Cold War, tensions over the nuclear issue have returned a chill to the relationship between Washington and New Delhi. Islamabad reportedly accepted some unilateral nuclear restraints under heavy U.S. pressure, but Pakistanis strongly resent U.S. bullying.[103] U.S.-Pakistan relations also are at a low point.

New Signs of Nuclear Realism

Emerging today in New Delhi, Islamabad, and Washington are new arguments for "nuclear realism." Conceding that nuclear disarmament is beyond reach both globally and in South Asia, and convinced that current diplomatic approaches have become counter-productive, the new nuclear realists have set their sights on arms control and confidence-building measures to avoid a nuclear war in the region.

There are increasing appeals to recast India's nuclear policy from its present emphasis on global and normative considerations to a new focus on national security requirements.[104] Strategic analysts K. Subrahmanyam and General K. Sundarji accept the permanence of military nuclear capabilities in the region and stress the need for India and Pakistan to learn to live peacefully in such an environment.[105] Although the Indian government continues to argue for global nuclear disarmament,[106] and is not now prepared to accept—much less act on—the nuclear realist perspective, it is beginning to show signs of greater flexibility and pragmatism.[107]

Since the summer of 1990 (shortly after the denouement of the military crisis over Kashmir), New Delhi has embraced the concept of confidence building with Pakistan. Several concrete measures have been negotiated and implemented by the two sides in the past three years.[108] A high-ranking advisory group (including serving and retired officials of the Atomic Energy Commission, General Sundarji, and defense expert Air Commodore Jasjit Singh) recently stressed the importance of confidence-building and risk-reduction measures to prevent conflict with Pakistan and China.[109] The gradual recognition of the utility of confidence-building and arms control measures thus could stimulate new Indian thinking about regional nuclear restraint in the subcontinent.

In Pakistan too there are isolated indications of a willingness to move beyond the traditional posture of regional denuclearization in order to stabilize the region's nuclear reality. The former Vice Chief of Army Staff, General K. M. Arif has urged the Indian and Pakistani governments to consider turning the region into a "nuclear safe zone" since Islamabad's current nuclear diplomacy has lost its effectiveness.[110] In a similar vein, General Mirza Aslam Beg, former Army Chief of Staff, writes:

> Our proposal that both India and Pakistan sign the NPT and that South Asia be declared a nuclear-weapon free zone has not worked because the concept of a nuclear-weapon free zone does not provide for the denuclearization of nations which have already gone nuclear. Nor have any fool-

> proof verification measures been devised so far which could divest a country of weapon-grade fissile material or weapons which it is known to possess or has produced. The same argument applies if both Pakistan and India were to enter the NPT fold as non-nuclear weapon states."[111]

In the United States there also is an emerging sense that complete nuclear disarmament in South Asia may no longer be a feasible policy objective. In his congressional testimony, Malott indicated that while the U.S. continues to advocate Indian and Pakistani adherence to the NPT, "our efforts also focus on trying to achieve more immediate goals," including the adoption of regional confidence-building measures "such as ending all firing across the line of control and notifying each other of troop movements."

These governmental efforts do not go far enough for some policy analysts who argue that regional nuclear security should replace nonproliferation as a U.S. policy priority. Richard Haass was one of the first observers to articulate this perspective in regard to South Asia.[112] Stephen Cohen and a group of colleagues conducted a comprehensive study of nuclear arms management issues for India and Pakistan.[113] Many others have made the case for "managing" nuclear proliferation in more general terms.[114] And still other experts propose arms control arrangements to manage nuclear arsenals and stabilize mutual deterrence in other regions of the world.[115]

Although its proponents include talented and highly respected scholars and policy analysts, the management perspective has had only a superficial impact on the general debate over nuclear proliferation (except in the case of the former Soviet Union). The reluctance of influential U.S. governmental officials to countenance a radical departure from present practices flows from four formidable constraints.

First, since at present only a handful of threshold nuclear weapons states exist, the United States and its principal nonproliferation allies are loathe to jeopardize what they consider to be a largely successful global nonproliferation approach in order to respond *possibly* more effectively to a few problematic cases. Spill-over concerns are very strong. Second, a large corpus of international legislation—especially the NPT—and non-treaty commitments prohibit many of the arms control measures favored by nuclear management enthusiasts. Third, domestic U.S. legislation dating from the Atomic Energy Act of 1946 to the Nuclear Non-Proliferation Act (NNPA) of 1978 and later amendments to foreign aid bills are even more restrictive concerning proliferation management. And finally, military self-interest dissuades the defense planners of the world's great powers from seeking to secure foreign nuclear forces that may at some later date either be targeted against their territory or impair their ability to intervene effectively in a regional security dispute.

Nuclear Opacity

The common reluctance of the de facto nuclear weapons states to openly discuss their force capabilities and intentions—combined with the insistence of foreign powers for them not to do so[116]—poses two potential problems for efforts to ensure regional nuclear security. The first complication concerns the strategic instabilities arising out of covert nuclear forces; it is the source of considerable intellectual debate. The second problem is not much more clear-cut: nuclear opacity impedes Indian and Pakistani efforts to openly propose, negotiate, and accept nuclear arms control agreements but it could also enable policy makers to work out in private measures that would be politically unpopular if publicized in either country.[117]

Nuclear Opacity and Strategic Stability

Many experts believe that secrecy concerning military nuclear capabilities, weapon employment doctrines, targeting plans, and escalation thresholds weakens deterrence and creates other political and military problems. Shai Feldman argues that covert nuclear weapons programs entail closed decision making without wider scrutiny, dominance of the military in the formulation of doctrine, biases toward offense and preemption, and strained crisis management and nuclear signaling.[118] Sundarji sees two strategic problems of nuclear opacity for India and Pakistan:

> The first, due to the possibility of a war between India and Pakistan being triggered through miscalculation of each others' nuclear status, as well as ignorance of the nuclear doctrines that the two countries are likely to go by, which would culminate in a tragic nuclear exchange. The second, due to the difficulties of ensuring the safety of nuclear warheads and the prevention of unauthorized use when in a clandestine state.[119]

On the other hand, nuclear opacity probably is required to preserve the current condition of "non-weaponized deterrence" between India and Pakistan. Perkovich and several South Asian analysts cited above contend that a condition of mutual deterrence deriving from the power of India and Pakistan to construct nuclear weapons quickly can be a steady source of regional security.[120] As Perkovich and others recognize, however, the stability of non-weaponized deterrence requires Islamabad and New Delhi to undertake a "rather demanding set of confidence-building measures to assure each other and the international community that they have not built weapons" and that they seek a situation of mutual security.[121]

Nuclear Opacity and Arms Control

In India and Pakistan, nuclear weapons have acquired a significance that extends well beyond their value as military and strategic bargaining instruments. A large portion of the subcontinent's population sees both civilian and military nuclear programs as components of, and indeed symbols for, national sovereignty and security. Therefore, it is difficult for Indian and Pakistani politicians to make public concessions on nuclear matters. As Neil Joeck writes, "managed proliferation benefits from secrecy insofar as the symbolism and popularity that may attach to nuclear weapons are thereby contained."[122]

Opaque nuclear proliferation in South Asia may have constrained a regional arms race and provided policy makers flexibility in negotiations, but it has done so probably at the costs of preventing Indian and Pakistani political leaders from cultivating domestic constituencies for nuclear arms control and from identifying the precise nuclear security problems that are in the most need of control. Without a clear understanding of the role nuclear weapons played in exacerbating or defusing the 1986-87 Brasstacks and the 1990 Kashmir crises—an understanding that can best emerge from an open strategic dialogue—nuclear arms control could remain an ill-defined and elusive objective.

Arms Control and National Security

New Delhi and Islamabad have devoted considerable manpower, time, and paper to bilateral arms control, but n*either side has accepted limits on military activities that it realistically*

might wish to pursue at some point in the future. Past and existing Indo-Pakistani treaties and confidence-building measures have helped to reduce tensions and resolve troublesome disputes, but have not significantly altered the sources of military rivalry, stabilized nuclear security, nor seriously constrained the strategic behavior of either country. Because neither Islamabad or New Delhi see arms control as a valuable source of national security, it does not yet play a central role in South Asian military and nuclear affairs.

Formal Indo-Pakistani Agreements

Islamabad and New Delhi concluded their most consequential military agreements in the aftermath of their three wars (1947-48, 1965, 1971).[123] The characteristics and costs of conflict compelled the adversaries on each occasion to negotiate provisions for troop disengagements and to make minor territorial adjustments along disputed borders. But neither side treated the resulting settlements as conclusive due to their failure to solve the fundamental problems—especially those underlying the Kashmir dispute—that provided the original cause for discontent.[124] "At best," Douglas Makeig observes, "the Karachi Agreement (1949), the Tashkent Agreement (1966), and the Simla Accord (1972) should be considered formalized, armed truces under which both sides expressed a preference for negotiations over war."[125]

Besides the three military truces, India and Pakistan have signed five formal pacts to settle bilateral disputes over territorial and sovereign rights. The April 1948 Calcutta Agreement safeguarded the subcontinent's partition, affirming that "the responsibility for protecting the lives and property of the minority communities...rests on the Government of the Dominion in which the minorities reside."[126] Prime Ministers Liaquat of Pakistan and Nehru of India signed a pact in 1950 guaranteeing to the minorities in both states full citizenship, security, and equal opportunity. The 1958 Nehru-Noon Border Accord specified territorial adjustments in East Pakistan. The 1968 Rann of Kutch Tribunal Award settled a minor boundary issue between Pakistan's province of Sindh and Indian Gujurat.[127] And the region's most successful sovereignty-oriented accord, the 1962 Indus River Waters Treaty, established Pakistan's legal claim and practical control over a supply of water from the Indus and its tributaries, the headwaters of which flow in India.

Indo-Pakistani Confidence-Building Measures

India and Pakistan jointly observe several conventional military confidence-building measures. Over the history of their rivalry, each side has proposed long lists of confidence-building proposals, but precious few have been enacted owing to the political and military complexities of the region's security affairs and to the intense distrust pervading Indo-Pakistani relations. Mutually motivated to head off another violent conflict in the aftermath of the second India-Pakistan war, the two states concluded an agreement in 1966 to provide Prior Notification of Border Exercises. In 1982 they established the Indo-Pakistan Joint Commission, designed to facilitate normal relations between the two states by creating a forum for bilateral cooperation in communications, consular affairs, cultural exchanges, trade, smuggling, and more recently, drug-trafficking. The commission has convened several formal sessions at the foreign-minister level and many more sessions at the subcommission level.[128]

As separatist violence in Indian-held Kashmir accelerated early in 1990, Indian and Pakistani troops intensified their armed skirmishes along the line of control. The heightened risk of a fourth India-Pakistan war soon focused governmental attention in Islamabad and

New Delhi (and Washington) on the need for military confidence-building measures. After a year of little progress, the foreign secretaries of Pakistan (Shaharyar Khan) and India (Muchkund Dubey) met in New Delhi in April 1991 and signed two major agreements, one pledging non-violation by military aircraft of each other's airspace, and the other requiring each side to provide advance information about any military exercises and troop movements along common borders.[129] As noted above, India and Pakistan subsequently established a formal line of communication (hotline) between their military commanders; also, an agreement on mutual visits between military delegations reportedly is near to conclusion.

Despite this impressive array of agreements, few of the region's military confidence-building arrangements operate according to plan. Both sides violate the no fly zones for combat aircraft and helicopters in order to map terrain across the border; it is not clear that the airspace agreement is enforced.[130] There are reports that the agreement on prior notification of military exercises has been violated. And abuses of the military hotline also are reported: it is claimed that after opening fire and inflicting casualties on enemy troops in Kashmir and on the Siachin glacier the attacking party can call the enemy on the hotline to prevent hostilities from widening.[131]

These and similar episodes suggest that military and civilian officials in both India and Pakistan remain skeptical of the value of arms control as an effective way to enhance national security. Arms control is not instinctive in South Asia. Nor was it for the United States and the Soviet Union. For the reasons outlined at the start of this paper, there is no reason to believe that India and Pakistan cannot learn to view arms control as a useful method of enhancing national security and normalizing strained political relations. The superpower experience also suggests that formally negotiated and ratified arms control agreements usually are more beneficial than tacit arrangements.

Tacit To Explicit Bargaining

As noted above, Islamabad and New Delhi have a long and relatively fruitful record of bilateral negotiation and problem solving. Writing in 1990, Joeck argued that between India and Pakistan:

> ...tacit bargaining has been an important factor for a decade or more. It is possible to identify a pattern of cooperative action that stands in contrast to what on the surface has appeared to be a competitive arms race. There is a false impression that India and Pakistan are hurtling, uncontrolled, toward a nuclear armed confrontation ... the leaders of both India and Pakistan are quite consciously and continuously attempting to prevent that from happening. Such efforts have persisted for a number of years and despite leadership changes in both countries.[132]

The optimism of this view is born out by the sustained bilateral dialogue between foreign secretaries since the 1990 crisis and the subsequent negotiation of several confidence-building measures. But the changed political and military conditions of the region require more explicit bargaining—especially on the issue of nuclear security.

In the 1980s India and Pakistan enjoyed strong political leaders who had sufficient maneuvering room at home and the confidence needed to engage the other side and de-escalate crises. It is not obvious that the tacit bargaining that worked well in the 1980s can

be managed as effectively in the present era. The destruction of the Babri Masjid, communal rioting and bombings in Bombay, and low-intensity conflict in Kashmir have disrupted the political dialogue. The transformation of domestic politics in each country, marked by the rise of the religious right and the erosion of national leadership, makes it necessary to open up and institutionalize arms-control negotiations.

The effectiveness of tacit bargaining depends largely on the immediate state of relations between India and Pakistan and on the strength (especially the perceived strength) of the political leadership of each country. Unfortunately, India and Pakistan have had weak and unstable governments for several years; and there are no signs that political conditions are improving in either country. In response to a July 1993 call for bilateral tension-reducing talks by Pakistan's interim President Wasim Sajjad, for example, India's Junior Foreign Minister Salman Khursheed stated: "India wants to ease these tensions, but there is a period of uncertainty in Pakistan. For the present let us wait and watch."[133] Even today there are few indications that India is finished waiting and prepared to sit down with Pakistan at the negotiating table.

Unilateral restraint and tacit confidence-building measures are important in any adversarial relationship, especially when the threat of nuclear war is involved. But arms control arrangements must be formally negotiated and ratified if they are to garner widespread domestic support and survive sudden changes in political leadership, popular sentiment, and international events.

Conclusion

The advent of nuclear weapons capabilities in South Asia poses new risks for India and Pakistan. The United States and the Soviet Union were able to mange similar risks during the Cold War, but not easily. After several dangerous episodes, the Cuban Missile Crisis in particular, Washington and Moscow eventually learned to bring their foreign policy practices, defense programs, and military behavior in line with the requirement of avoiding nuclear war. India and Pakistan are now on the verge of undergoing a similar learning process. The outcome remains to be seen, but the evidence assembled in this paper suggests that the risk of nuclear war in South Asia can be controlled with the effective application of arms control and confidence-building measures by India, Pakistan, and the United States.

Notes

[1] The United States, Russia, Britain, France, and China have declared nuclear arsenals. Israel, India, Pakistan, and South Africa are believed to have military nuclear capabilities; although by joining the Nuclear Nonproliferation Treaty (NPT) in July 1991 and concluding a full-scope safeguards agreement with the International Atomic Energy Agency (IAEA), Pretoria evidently has sacrificed its nuclear bomb option. The present number of nuclear-weapon states thus is eleven if one also includes Ukraine, Belarus, and Kazakhstan, all of which inherited Soviet nuclear arms, but under the May 1992 Lisbon Protocol to the START treaty, agreed to remove the nuclear forces from their territory.

Continued change in post-cold war security structures could induce many states not now seen as proliferation threats to go nuclear. For pessimistic predictions about proliferation trends, see Benjamin Frankel, "The Brooding Shadow: Systemic Imperatives and Nuclear Weapons Proliferation," *Security Studies* 2, nos. 3/4 (Spring/Summer 1993); Dagobert L. Brito and Michael Intriligator,

"The Economic and Political Incentives to Acquire Nuclear Weapons," *Security Studies* 2, nos. 3/4 (Spring/Summer 1993); Lewis A. Dunn, *Containing Nuclear Proliferation*, Adelphi Paper no. 263 (London: International Institute for Strategic Studies [IISS], Winter 1991); and Jed C. Snyder, "Weapons Proliferation and the New Security Agenda," in Andrew W. Marshall, J. J. Martin, and Henry S. Rowen, eds., *On Not Confusing Ourselves* (Boulder, Colo.: Westview, 1991), pp. 261-82. For optimistic forecasts, see Zachary S. Davis, "The Realist Nuclear Regime," *Security Studies* 2, nos. 3/4 (Spring/Summer 1993); and Thomas Graham, "Winning the Nonproliferation Battle," *Arms Control Today* 21, no. 7 (September 1991): pp. 8-13.

[2] For the leading counter-arguments, see Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper No. 171 (London: International Institute for Strategic Studies, 1981); John J. Weltman, "Managing Nuclear Multipolarity," *International Security* 6, no. 3 (Winter 1981-82); Dagobert L. Brito and Michael D. Intriligator, "Proliferation and the Probability of War: Global and Regional Issues," in Brito, Intriligator, and Adele E. Wick, eds., *Strategies for Managing Nuclear Proliferation* (Lexington, Mass.: D.C. Heath, 1983); Bruce Bueno de Mesquita and William H. Riker, "An Assessment of the Selective Merits of Nuclear Proliferation," *Journal of Conflict Resolution* 26, no. 2 (June 1982); Bueno de Mesquita, "Nuclear Peace Through Selective Nuclear Proliferation," undated manuscript; Bruce Berkowitz, "Proliferation, Deterrence, and the Likelihood of War," *Journal of Conflict Resolution* 29, no. 1 (March 1985).

[3] Director of Central Intelligence James Woolsey told the Senate Governmental Affairs Committee on 24 February 1993: "The arms race between India and Pakistan poses perhaps the most probable prospect for future use of weapons of mass destruction, including nuclear weapons." Woolsey's opinion is typical in the U.S. government; it was repeated in the 28 April congressional testimony of John R. Malott, Deputy Assistant Secretary of State for South Asian Affairs, and in the administration's "Report to Congress on Progress Toward Regional Nonproliferation in South Asia," April 1993. Outside the government, the *Washington Post* remarked that South Asia is "the likeliest place in the world for a nuclear war" ("The Next Nuclear War," 13 October 1989, p. 13). See also Leonard S. Spector, "India-Pakistan War: It Could Be Nuclear," *New York Times*, 7 June 1990, p. 23.

[4] See McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988); George Bunn, *Arms Control by Committee: Managing Negotiations with the Soviets* (Stanford, Calif.: Stanford University Press, 1992); and Coit D. Blacker, *Reluctant Warriors: the United States, the Soviet Union and Arms Control* (New York: W. H. Freeman, 1987).

[5] There is no consensus on what caused the "long peace" between the United States and the Soviet Union. Some argue that arms growth was more important than arms control; see Colin Gray, *House of Cards: Why Arms Control Must Fail* (Ithaca: Cornell University Press, 1992); and Patrick Glynn, *Closing Pandora's Box: Arms Races, Arms Control, and the History of the Cold War* (New York: Basic Books, 1992). For a different perspective, see John Lewis Gaddis, "International Relations Theory and the End of the Cold War," *International Security* 17, no. 3 (Winter 1992/93): 5-58.

[6] These are the three objectives of arms control that Thomas C. Schelling and Morton H. Halperin identified in *Strategy and Arms Control* (New York: Twentieth Century Fund, 1961), p. 1.

[7] Woolsey testimony; see note 3.

[8] This estimate is based on the operating histories of India's Cirus, Dhruva, and unsafeguarded power reactors, less the amount of plutonium used for non-weapons ends. David Albright, Frans Berkhout and William Walker, *World Inventory of Plutonium and Highly Enriched Uranium, 1992* (New York: Oxford University Press, 1993), pp. 157-62.

[9] David Albright and Mark Hibbs, "India's Silent Bomb," *Bulletin of the Atomic Scientists* 48, no. 7 (September 1992): pp. 27-31.

[10] Albright, Berkhout, and Walker, *World Inventory*, pp. 162-67.

[11] David Albright and Mark Hibbs, "Pakistan's Bomb: Out of the Closet," *Bulletin of the Atomic Scientists* 48, no. 6 (July/August 1992): 38-43. Because of these activities, the U.S. government terminated economic and military aid to Pakistan in October 1990.

[12] Most notably, India is developing the Agni, a nuclear-capable, intermediate-range ballistic missile, and the Prithvi, a battlefield ballistic missile. Pakistan has produced the HATF I and II (copies of

French Dauphin and Eridan sounding rockets), and is reported to have received components for China's M-11 medium-range missile. See Timothy V. McCarthy, "India: Emergent Missile Power," and Cameron Binkley, "Pakistani Ballistic Missile Development: The Sword of Islam?" both in William Potter and Harlan Jenks, eds., *The International Missile Bazaar: The New Suppliers' Network* (Boulder, Colo.: Westview, forthcoming 1993); *Assessing Ballistic Missile Proliferation and Its Control* (Stanford, Calif.: Center for International Security and Arms Control, 1991); Ann Devroy and R. Jeffrey Smith, "U.S. Evidence 'Suggests' China Breaks Arms Pact," *Washington Post*, 18 May 1993.

[13] For an estimate of the catastrophic physical effects of a few nuclear explosions in South Asia, see S. Rashid Naim, "Aadhi Raat Ke Baad (After Midnight)," in Stephen Philip Cohen, ed., *Nuclear Proliferation in South Asia: The Prospects for Arms Control* (Boulder, Colo.: Westview, 1991), pp. 23-61.

[14] A more comprehensive list is included in the U.S. State Department, "Report to Congress on Progress Toward Regional Nonproliferation in South Asia," April 1993.

[15] In addition to these six concerns which emphasize the regional military effects of nuclear proliferation, experts also worry about the impact of nuclear developments in South Asia on the nuclear capabilities and intentions of other states. Specifically, (1) they worry that India and Pakistan might provide nuclear explosives or related materials directly to other governments or non-state groups, or (2) they fear that every new entry into the nuclear club encourages additional countries to go nuclear. The presumed mechanism behind this spill-over effect is either the simple imitation of one country's nuclear feat by highly motivated, threatened, or envious states, or the general weakening of the global nonproliferation regime to the point where it no longer contains the further spread of military nuclear materials and technology. See Stephen Philip Cohen, "Solving Proliferation Problems in a Regional Context: South Asia," in *New Threats: Responding to the Proliferation of Nuclear, Chemical, and Delivery Capabilities in the Third World* (Lanham, Maryland: University Press of America, 1990), pp. 163-95. (3) Western experts also worry—although much less so since the end of the Cold War—that conflict involving new nuclear states could draw the big nuclear powers into cataclysmic nuclear war. (4) A final fear—one that has grown since the end of the Cold War—is that missiles and mass destructive weapons in the developing world could imperil the success of major power military intervention in regional disputes.

[16] Robert Glasser, "Avoiding Strategic Instability in South Asia: Some Insights from the Cold War," unpublished paper, 14 November 1990, pp. 16-21. Some defense experts now claim that India's armed forces are losing their decisive edge against Pakistan as the result of five years of resource cuts, disrupted supplies from the former Soviet Union, and deepened army involvement in internal peace keeping. See Shekhar Gupta with W. P. S. Sidhu and Kanwar Sandhu, "A Middle-Aged Military Machine," *India Today* (New Delhi), 30 April 1993, pp. 22-30.

[17] *New York Times*, 13 September 1984; "Report on Kahuta Denied," Karachi Domestic Service, 30 September 1985, reprinted in *Joint Publications Research Service (JPRS)/Nuclear Development and Proliferation*, 21 October 1985, p. 37; "Plans to Attack Pakistan Nuclear Complex Denied," Delhi Domestic Service, 6 November 1985, reprinted in *Foreign Broadcast Information Service (FBIS)/ South Asia*, 6 November 1985, p. E-1.

[18] On Israel's bombing of the Osirak nuclear reactor, see Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy* (New York: Random House, 1991), pp. 8-16.

[19] Exerpts from a Bhutto memo to President Ayub Khan, 27 May 1965; for this citation and discussion, see Stanley Wolpert, *Zulfi Bhutto of Pakistan* (New York: Oxford University Press, 1993), pp. 83-89.

[20] As George Quester puts it, "the worst may indeed be over, as the prospect of a 'splendid first strike' eliminating every possible Pakistani nuclear weapon becomes more difficult with each year that the Pakistanis have been enriching uranium." *Nuclear Pakistan and Nuclear India: Stable Deterrent or Proliferation Challenge?* (Carlisle, Penn.: U.S. Army War College, 25 November 1992).

[21] K. Subrahmanyam, "Building Trust on the Bomb: What India and Pakistan Can Do," *Times of India* (Bombay), 30 July 1985, p. 8.

[22] The text of the agreement is printed in Sreedhar and John Kaniyalil, eds. *Indo-Pak Relations: A Documentary Study* (New Delhi: ABC, 1993), pp. 234-35.
[23] *The News* (Rawalpindi), 5 January 1992. See also Shahid-ur-Rehman Khan, "India and Pakistan Exchange Lists of Nuclear Facilities," *Nucleonics Week*, 9 January 1992. This dispute may stem from the fact that the treaty language is ambiguous as to what constitutes a nuclear facility (e.g., inoperative facilities or installations under construction).
[24] "Pakistani Sources Charge India Failed to Adhere to Nuclear Pact," United Press International (UPI), 8 January 1992.
[25] Colin S. Gray, "Arms Control Does Not Control Arms," *Orbis* (Summer 1993): pp. 343.
[26] On this concern early in the era of U.S.-Soviet nuclear deterrence, see Albert Wohlstetter, "The Delicate Balance of Terror," *Foreign Affairs* 37, no. 2 (January 1959): pp. 211-34. For a discussion of the problem in South Asia, see Susan M. Burns, "Preventing Nuclear War: Arms Management," in *Nuclear Proliferation in South Asia*, pp. 89-126.
[27] The *Hindustan Times* reported in May 1993 that the Indian Army's 11th Corps was armed with the Prithvi, a medium-range ballistic missile capable of carrying a one-ton warhead. This report evidently was false, but Prithvi deployment is expected to begin early in 1994. Three versions of the Prithvi reportedly have been produced with ranges of 218, 155 and 93 miles. "India Said to Deploy New Ballistic Missile along Pakistani Border," UPI, 22 May 1993; Brahma Chellaney, "India Carries Out Surprise Test of An Extended Prithvi Missile," UPI, 12 June 1993.
[28] India actually started the hostilities between its forces and Pakistani troops in East Pakistan (now Bangladesh). India's intensification of the low-intensity conflict evidently spurred Pakistan to turn to a doctrine of preemption: on 3 December 1971 Pakistan launched a surprise air attack against several military bases in northwestern India and commenced ground operations both in Kashmir and the Punjab. Despite the surprise, the attack did little damage and India retaliated the following day with massive air attacks and naval bombardment against Pakistani targets. See Richard Sisson and Leo E. Rose, *War and Secession: Pakistan, India, and the Creation of Bangladesh* (Berkeley and Los Angeles: University of California Press, 1990), pp. 221-36; Siddiq Salik, *Witness to Surrender* (Karachi: Oxford University Press, 1977); and Robert Jackson, *South Asian Crisis: India, Pakistan and Bangla Desh* (New York: Praeger, 1975).
[29] Thomas C. Schelling calls this problem "the reciprocal fear of surprise attack" in *The Strategy of Conflict* (Cambridge, Mass.: Harvard University Press, 1960), pp. 207-29.
[30] See George Perkovich, "A Nuclear Third Way in South Asia," *Foreign Policy* 91 (Summer 1993): p. 89.
[31] According to one interpretation, many of these unilateral military measures do represent arms control. In their classic arms control text, Schelling and Halperin wrote: "the Polaris submarine may embody many of the qualities that we and our potential enemies would be seeking through arms control to embody in our strategic-weapons systems..." *Strategy and Arms Control*, p. 53. See also Marc Trachtenberg, "The Past and Future of Arms Control," *Daedalus* 120, no. 1 (Winter 1991): p. 210.
[32] Robert Jervis, "Arms Control, Stability, and the Causes of War," *Daedalus* 120, no. 1 (Winter 1991): p. 178.
[33] Two characteristics of these systems—*interactive complexity* and *tight coupling*—make accidents inevitable. A third feature—immense destructiveness—can make accidents catastrophic. See Scott D. Sagan, The *Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton: Princeton University Press, 1993); and Charles Perrow, *Normal Accidents: Living With High-Risk Technologies* (New York: Basic Books, 1984).
[34] See Scott Sagan, "The Perils of Proliferation: Organization Theory, Deterrence Theory, and the Spread of Nuclear Weapons," *International Security* 18, no. 4 (Spring 1994).
[35] See Gregory F. Giles, "Safeguarding the Undeclared Nuclear Arsenals," *Washington Quarterly* 16, no. 2 (Spring 1993): 173-86; Peter D. Feaver, "Command and Control in Emerging Nuclear Nations," *International Security* 17, no. 3 (Winter 1992/93): pp. 160-87; and Burns, "Preventing Nuclear War," pp. 116-18.

[36] Dunn, *Containing Nuclear Proliferation*, p. 47.
[37] See Paul Leventhal and Brahma Chellaney, "Nuclear Terrorism: Threat, Perception, and Response in South Asia," *Terrorism* 11 (1988): pp. 447-70.
[38] Giles, "Safeguarding the Undeclared Nuclear Arsenals," p. 178.
[39] Considerations of technical aid to new nuclear states go far back. The Kennedy administration is said to have considered such assistance to the Soviet Union in the early 1960s. Washington provided this aid to Britain and France. See Joel Larus, *Nuclear Weapons Safety and the Common Defense* (Columbus: Ohio State University Press, 1967); Colin S. Gray, "Arms Control in a Nuclear Armed World," *Annals of the American Academy of Political Science* no. 430 (March 1977): pp. 110-21; Daniel Caldwell, "Permissive Action Links: A Description and Proposal," *Survival* 29, no. 3 (May/June 1987): pp. 224-38.
[40] Dunn, *Containing Nuclear Proliferation*, pp. 47-51; Giles, "Safeguarding the Undeclared Nuclear Arsenals," pp. 184-86.
[41] For this reason, Dunn suggests helping new nuclear powers solve doctrinal rather than technological problems. *Containing Nuclear Proliferation*, pp. 49-53. See also Peter R. Lavoy, "Nuclear Myths and the Causes of Nuclear Proliferation," *Security Studies* 2, nos. 3/4 (Spring/Summer 1993): pp. 192-212.
[42] Michael Specter, "The Battle of Bombay," *Far Eastern Economic Review*, 31 May 1984, pp. 14-15.
[43] The British Indian Army had considerable autonomy in minor matters, but important decisions were made with the concurrence of the Viceroy after consideration by the British Government. Stephen P. Cohen, *The Indian Army* (Berkeley and Los Angeles: University of California Press, 1971), pp. 170-71.
[44] For a discussion of the 1959 affair, in which chief of army staff Thimayya complained to Prime Minister Nehru that Defense Minister Krishna Menon was promoting senior army officers on political rather than professional grounds, see P. R. Chari, "Civil-Military Relations in India," Armed *Forces and Society* 4, no. 1 (November 1977): pp. 15-17.
[45] Because the military failure in 1962 was at least partially blamed on civilian micro-management of the campaign, when India went to war against Pakistan in 1965, army chief J. N. Chaudhuri asked for and was granted operational freedom. The 1965 pattern was repeated in the 1971 war with Pakistan. Once permission to attack as given, the army was permitted to plan and conduct operations as it saw fit, and even played a large role in shaping the terms of the peace-making process. Stephen P. Cohen, "The Military and Indian Democracy," in *India's Democracy: An Analysis of Changing State-Society Relations*, ed. Atul Kholi , (Princeton: Princeton University, 1988) pp. 99-143.
[46] Stephen Philip Cohen, "Nuclear Neighbors," in Cohen, *Nuclear Proliferation in South Asia*, pp. 20-21.
[47] See the autobiography of a later AEC chairman, Raja Ramanna, *Years of Pilgrimage* (New Delhi: Viking, 1991), p. 74.
[48] Ibid., pp. 88-89.
[49] Ramanna, *Years of Pilgrimage*, pp. 88-89.
[50] Conversations with Indian defense experts.
[51] See Thomas W. Graham, "Nuclear Deterrence, Arms Control, and Confidence Building in South Asia," in Eric H. Arnett, *New Perspectives for a Changing World Order* (Washington, D.C.: American Association for the Advancement of Science, 1991), pp. 123-34.
[52] General K. Sundarji, *Indian Express*, 20 December 1992, p.1, reprinted in JPRS-TND-93-001, pp. 11-12; K. Subrahmanyam, "Nuclear Policy, Arms Control and Military Cooperation," paper presented at the conference on India and the United States after the Cold War, New Delhi, 7-9 March 1993.
[53] P. K. Iyengar's press conference at Calcutta, 28 October 1992, reported in *Hindustan Times* (New Delhi), 29 October 1992.
[54] M. R. Balakrishnan, ed., Collected Scientific Papers of Dr. P. K. Iyengar: vol. 5, Selected Papers and Speeches on Nuclear Power and Science in India (Bombay, Bhabha Atomic Research Center, 1991), 247; cited in Albright and Hibbs, op. cit., p.31.

[55] Rajesh Kadian, *India and Its Army* (New Delhi: Vision Books, 1990), p. 75. Kadian adds that "what many of these officers want are tactical nuclear weapons which would decisively alter the battlefield in their favour (p. 75)."
[56] William Claiborne, "Punjab's Sikh Shrine Reopened as Sporadic Violence Continues," *Washington Post*, 26 June 1984, p. A10; Jerrold F. Elkins and W. Andrew Ritzel, "Military Role Expansion in India," *Armed Forces & Society* 11, no. 4 (Summer 1985): pp. 497-8.
[57] The best discussion of Pakistan's armed forces is Stephen P. Cohen, *The Pakistan Army* (Berkeley and Los Angeles: University of California Press, 1984).
[58] This excerpt from Jinnah's address to the Pakistan Army's Staff College on 14 June 1948 is quoted in Cohen, *The Pakistan Army* , p. 118.
[59] The Rawalpindi Conspiracy is the name given to Pakistan's single episode of intra-military insurrection. In 1951 a group of senior army officers was found to be plotting the overthrow of the civilian government of Pakistan's first prime minister, Liaquat Ali Khan. When he learned of this plot, the chief of army staff, General Ayub Khan, acted swiftly and put the conspirators in jail.
[60] For details on this meeting, see Steve Weissman and Herbert Krosney, *The Islamic Bomb* (New York: Times Books, 1981), pp. 44-47; and Neil Joeck, "Pakistani Security and Nuclear Proliferation in South Asia," *Journal of Strategic Studies* 8, no. 4 (December 1985): pp. 86-87.
[61] Weissman and Krosney, *Islamic Bomb*, p. 42.
[62] Cohen, *The Pakistan Army* , p. 153.
[63] In his death cell memoirs, *If I am Assassinated* (Delhi: Vikas, 1979), Bhutto claims that Pakistan had come close to a military nuclear capability under his guidance, and that he was overthrown because of foreign misgivings about this development.
[64] Ikram Ullah, "Former COAS Refutes Benazir's Plea of Ignorance," *The News*, 6 December 1992, p. 4, reprinted in *FBIS-NES-92-239*, 11 December 1992, p. 59.
[65] Ibid.
[66] Michael O'Rourke, "Nuclear Stand-off: Interview with General K. Sundarji," *Far Eastern Economic Review*, 13 September 1990, p. 26.
[67] Lewis A. Dunn, *Controlling the Bomb* (New Haven: Yale University Press, 1982), p. 70. See also Kathleen C. Bailey, *Doomsday Weapons in the Hands of Many: The Arms Control Challenge of the '90s* (Urbana: University of Illinois Press, 1991), p. 2.
[68] *Perception, Influence and Weapons Proliferation in South Asia*, report prepared for the State Department, Bureau of Intelligence and Research (#1722-920184, August 1978), p. 24.
[69] For elaboration on this general concept, see Jack Snyder, *Myths of Empire: Domestic Politics and International Ambition* (Ithaca: Cornell University Press, 1991); Snyder, *The Ideology of the Offensive* (Ithaca: Cornell University Press, 1984); Scott D. Sagan, "1914 Revisited: Allies, Offense, and Instability," *International Security* 11, no. 2 (Fall 1986); and Stephen Van Evera, "The Cult of the Offensive and the Origins of the First World War," *International Security* 9, no. 1 (Summer 1984): pp. 58-107.
[70] This point is developed in many of the essays contained in *Perspectives on Kashmir: The Roots of Conflict in South Asia*, ed., Raju G. C. Thomas (Boulder, Colo.: Westview, 1992). See especially the editor's informative introductory chapter, "Reflections on the Kashmir Problem," pp. 3-43.
[71] K. Subrahmanyam, "Nuclear Policy, Arms Control and Military Cooperation," paper presented at the conference on India and the United States after the Cold War, sponsored by the Carnegie Endowment for International Peace and the India International Centre, New Delhi, 7-9 March 1993, p. 7.
[72] Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (Ithaca: Cornell University Press, 1991), pp.1-4.
[73] Quoted by Seymour M. Hersh, "On the Nuclear Edge," *New Yorker*, 29 March 1993, p. 57. The concern that any regional war would escalate to a nuclear exchange is now common; for example: "The upsurge of Hindu-Muslim animosity throughout South Asia following the destruction of the Ayodhya mosque has heightened the danger of war between India and Pakistan that could escalate to the nuclear level." Selig S. Harrison and Geoffrey Kemp, *India and America After the Cold War*,

Report of the Carnegie Endowment Study Group on U.S.-Indian Relations in a Changing International Environment (Washington, D.C.: Carnegie Endowment for International Peace, 1993), p. 2.

[74] Quoted by Kuldip Nayar, "We Have the A-Bomb, Says Pakistan's Dr. Strangelove," *Observer* (London), 1 March 1987.

[75] In the Hersh interview, Gates suggests that his visit to New Delhi and Islamabad helped to defuse the nuclear crisis and prevent a war. However, General V. N. Sharma, then chief of the Indian army, disagrees, stating that India did not fear a Pakistani nuclear threat and that U.S. embassy officials in India and Pakistan assisted these countries in averting a war well before Gates arrived in the region. Sharma, "It's All Bluff and Bluster," *Economic Times*, 18 May 1993, p. 13. See also K. Subrahmanyam, "Valuable Inferences," *Economic Times*, 18 May 1993, p. 13.

[76] Hersh quotes a U.S. intelligence analyst as saying: "They had F-16s prepositioned and armed for delivery—on full alert, with pilots in the aircraft. I believe that they were ready to launch on command and that the message had been clearly conveyed to the Indians." "On the Nuclear Edge," p. 65.

[77] Shireen M. Mazari, "Nuclear Weapons and Structures of Conflict in the Developing World," in W. Thomas Wander and Eric H. Arnett, *The Proliferation of Advanced Weaponry: Technology, Motivations, and Responses* (Washington, D.C.: American Association for the Advancement of Science, 1992), p. 48.

[78] "It is a hard fact that on the two occasions in the last few years that Pakistan and India almost went to war—during Exercise Brasstacks in 1987 and the early stages of the Kashmir uprising in 1990—the only reason that these eyeball-to-eyeball confrontations between the Pakistani and Indian armies were not converted into military conflict was the nuclear factor." Mushahid Hussain, "A Bomb for Security," *Newsline* (Karachi), November 1991, p. 32.

[79] K. Subrahmanyam, "Down Memory Lane," *Economic Times* (New Delhi), 24 March 1993. M. R. Srinivasan, a former Indian Atomic Energy Commission chairman, agrees: "there was no truth whatever in the report that either Pakistan or India was on the point of deploying nuclear weapons against each other." "NPT and India's Case," *Hindu* (Madras), 10 July 1993.

[80] Subrahmanyam, "Nuclear Policy, Arms Control and Military Cooperation," p. 15.

[81] Subrahmanyam, "Building Trust on the Bomb."

[82] General K. Sundarji, "Nuclear Deterrence: Doctrine for India, Part 2," *Trishul* (professional journal of the Defence Services Staff College, Wellington, India) 5, no. 3 (July 1993).

[83] "What the nuclear capability does is to make sure that the old scenarios of Indian armour crossing the Sukkur barrage over the Indus (river) and slicing Pakistan into two are a thing of the past," remarks a senior general of the Indian army. Quoted by Shekhar Gupta and W. P. S. Sidhu, "The End Game Option," *India Today*, 30 April, 1993, p 28. As noted above, Subrahmanyam and Sundarji concur on this point.

[84] According to some sources, such a link existed earlier but fell into disuse over the last two decades.

[85] In Gandhi's words, "the moral to be legitimately drawn from the supreme tragedy of the bomb is that it will not be destroyed by counter bombs even as violence cannot be by counter-violence." "Atom Bomb and Ahimsa," Poona, 7 July 1946. This and several other major statements by Gandhi and Nehru are contained in the Indian government's official anthology of writings and speeches on the nuclear issue, *India and Disarmament* (New Delhi: Ministry of External Affairs, 1988). See also J. P. Jain, *India and Disarmament: Nehru Era, Vol. 1* (New Delhi: Radiant Publishers, 1974).

[86] The Delhi Declaration on Principles for a Nuclear-Weapon Free and Non-Violent World asserted that "the balance of terror must give way to comprehensive international security" through nuclear disarmament, just political settlement of conflicts, peaceful negotiation and coexistence, and cooperation in political, economic and humanitarian spheres. Text contained in *Disarmament: India's Initiatives* (New Delhi: Indian Ministry of External Affairs, 1988), pp. 81-86. Presenting India's Action Plan at the Third UN Special Session on Disarmament in June 1988, Prime Minister Rajiv Gandhi recounted five evils of nuclear deterrence: the justification of armaments, threats and violence; a source of international hostility; the cause of economic calamity; a spur to nuclear proliferation; and the root of the inevitable risk of global annihilation. "A World Free of Nuclear Weapons," *India and Disarmament*, pp. 280-94.

[87] Indian press statement on START II, 12 January 1993; reprinted in FBIS-NES-93-008, 13 January 1993, p. 44.
[88] See Charles C. Flowerree, "CBMs in the U.N. Setting," in John Borawski, ed., *Avoiding War in the Nuclear Age: Confidence-Building Measures for Crisis Stability* (Boulder: Westview, 1986), pp. 107-108.
[89] India actually opposed the Baruch Plan because of reservations about the ability of an international nuclear control authority to operate impartially and to promote the peaceful application of atomic energy in the developing world. See Jain, *India and Disarmament: Nehru Era*, pp. 15-19.
[90] At the 1983 summit of nonaligned nations in New Delhi, India called for a test ban, production freeze, and number reduction in the nuclear weapons of the United States and the Soviet Union. When Soviet-American nuclear negotiations broke down at the end of 1983 on the issue of Euromissiles, Prime Minister Indira Gandhi and Swedish Prime Minister Olaf Palme launched a six-nation, five-continent peace and disarmament campaign. Inheriting this high-profile diplomatic program from his mother, Rajiv Gandhi made nuclear disarmament a top priority in India's international diplomacy. The 1986 Delhi Declaration, the 1988 Action Plan, and related diplomatic activities generated international publicity for New Delhi and also helped to establish a strong domestic consensus in India for fundamentalist positions on nuclear disarmament.
[91] For an early Indian perspective, see V. C. Trivedi, Statement to the Eighteen Nation Disarmament Committee, 28 September 1967, in U.S. Arms Control and Disarmament Agency, *Documents on Disarmament, 1967* (Washington, D.C.: U.S. Government Printing Office, 1968), p. 436.
[92] For instance, a senior Indian diplomat observes: "The adoption of an 'arms control' approach, as distinct from the 'disarmament' framework, has failed to arrest proliferation and is unlikely to provide a viable paradigm for the future." Prakash Shah, "Nuclear Non-Proliferation Implications and the NPT Review," *Strategic Analysis* (New Delhi) May 1993, p. 145.
[93] President Ayub Khan, Statement to the 17th session of the U.N. General Assembly, quoted in Hameed A. K. Rai, *Pakistan in the United Nations* (Lahore: Aziz Publishers, 1979), p. 241.
[94] Statement to the First Committee of the General Assembly, 13 December 1967, in *Documents on Disarmament, 1967*, p. 671.
[95] Statement to the First Committee of the General Assembly, 13 May 1968, in *Documents on Disarmament, 1968*, p. 318.
[96] Pakistan never veered from its original view of the NPT: "a non-proliferation treaty is unlike any other treaty; the universality of its scope is its very essence. If all countries do not adhere to it, or if some do with reservations, its entire purpose will be defeated." See the Statement by the Pakistani Representative (Ali) to the First Committee of the General Assembly, 4 November 1966, in *Documents on Disarmament, 1966*, pp. 689-90.
[97] Steve Weissman and Herbert Krosney, *The Islamic Bomb: The Nuclear Threat to Israel and the Middle East* (New York: Times Books, 1981), pp. 42-46.
[98] Ashok Kapur, *Pakistan's Nuclear Development* (London: Croom Helm, 1987), 155, 165; Ziba Moshaver, *Nuclear Weapons Proliferation in the Indian Subcontinent* (New York: St. Martin's, 1991), pp. 130-32.
[99] Ali Sarwar Naqvi, "Pakistan: Seeking Regional Peace and Progress in Non-Nuclear South Asia," *Arms Control Today* 23, no. 5 (June 1993): p. 11.
[100] See Peter R. Lavoy, "Learning and the Evolution of Cooperation in U.S. and Soviet Nonproliferation Activities" in George W. Breslauer and Philip E. Tetlock, eds., *Learning in U.S. and Soviet Foreign Policy* (Boulder, Colo.: Westview, 1991), pp. 735-83.
[101] Such a policy reportedly is near completion and is likely to seek a global ban on the production of fissile materials for use in nuclear weapons. Kathleen Hart, "Clinton Policy May Seek Global Ban on Producing HEU, Pu for Weapons," *Nuclear Fuel*, 2 August 1993, pp. 5-6.
[102] See also the 28 April congressional testimony of John R. Malott, Deputy Assistant Secretary of State for South Asian Affairs.
[103] Mushahid Hussain asserts that "under pressure from the Bush administration, the government of Prime Minister Benazir Bhutto had stopped production of highly enriched uranium before the former

Prime Minister arrived in Washington for her official visit in June 1989." "Nuclear Issue: Ball is Now in Pakistan's Court," *Nation* (Lahore), 29 November 1990.

[104] C. Raja Mohan, "Nuclear Fundamentalism Must Go," *Hindu*, 21 November 1991.

[105] For examples, see K. Subrahmanyam, "An Indo-Pak Nuclear Restraint Regime," in two parts, *Economic Times*, 30 September 1992 and 1 October 1992; "No First Use Policy," *Economic Times*, 26 May 1993; and General K. Sundarji, "The Nuclear Threat," *India Today*, 30 November 1990, p. 90; "Nuclear Realpolitik," *India Today* 31 August 1991, p. 81; "A New Equation," *India Today*, 31 October 1991, p. 81; "Regional Arms Reduction and Limitation in the Post-Cold War Era: South Asia," paper presented at the U.S. Nuclear Agency International Conference on Controlling Arms, Richmond, Virginia, 7-10 June 1993. .For another like view, see K. Shankar Bajpai, "Nuclear Exchange," *Far Eastern Economic Review*, 24 June 1993, p. 24.

[106] India's disarmament diplomacy, which used to deflect foreign criticism of the country's nuclear program, now has a new logic. Sensing increased U.S. pressure for India to participate in a global ban on the production of fissile materials for use in nuclear weapons, India's policy of continued calls for complete nuclear disarmament—as opposed to a worldwide freeze on existing military nuclear capabilities—may provide New Delhi the only hope for protecting its weapons-oriented material production program. On the U.S. idea of a fissile materials cutoff, see Hart, "Clinton Policy."

[107] A case in point is the address by Foreign Secretary J. N. Dixit to an Indo-U.S. symposium sponsored by the Carnegie Endowment for International Peace and the India International Centre in New Delhi, 8 March 1993. Suggesting at one point the Chemical Weapons Convention as a model for nuclear abolition, Dixit also stressed the security dimensions of Indian nuclear policy, the military implications of China-Pakistan nuclear relations, and the need to move away from "entrenched positions" on nonproliferation.

[108] For a thorough discussion of these measures, see the forthcoming Stimson Center monograph on CBMs in South Asia. See also the 1992-93 *Annual Report* of the Indian Ministry of Defence.

[109] See K. K. Katyal, "Signing NPT Not in Indian Interest," *Hindu*, 8 July 1993.

[110] See General Khalid Mahmud Arif's articles in *Dawn* (Karachi): "The New Global Scenario," 3 February 1992; and "The Nuclear Tussle," 30 December 1992, p. 11; and "The South Asian Nuclear Scene," paper presented to the fourth round of the Neemrana dialogue, Islamabad, October 1992.

[111] General Mirza Aslam Beg, "Pakistan's Nuclear Programme: A National Security Perspective," unpublished paper, no date, p. 20. Other Pakistani opinion shapers, such as columnist Shireen Mazari, share Beg's criticism of the government's policy of tying Pakistan's nuclear posture to that of India.

[112] Richard N. Haass, "South Asia: Too Late to Remove the Bomb?" *Orbis* (Winter 1988): pp. 107-118. See also Haass, *Conflicts Unending: The United States and Regional Disputes* (New Haven: Yale University Press, 1990), p. 91.

[113] Cohen, *Nuclear Proliferation in South Asia.*

[114] See the essays collected in *New Nuclear Nations: Consequences for U.S. Policy*, ed., Robert D. Blackwell and Albert Carnesale (New York: Council on Foreign Relations Press, 1993); Dunn, *Containing Nuclear Proliferation*; Dunn, *Controlling the Bomb*, pp. 149-75; Giles, "Safeguarding the Undeclared Nuclear Arsenals," Colin Gray, "Arms Control in a Nuclear Armed World?" *Annals of the American Academy of Political Science Studies*, no. 430 (March 1977); Rodney Jones, "Small Nuclear Forces and U.S. Security Policy," in Jones, ed., *Small Nuclear Forces and U.S. Security Policy* (Lexington, Mass.: D.C. Heath, 1984); Michael T. Klare, "Can Third World Arms Control Work?" *Arms Control Today* 20, no. 3 (April 1990).

[115] On Israel and the Middle East, see Shai Feldman, "Managing Nuclear Proliferation," in Jed C. Snyder and Samuel F. Wells, Jr., eds., *Limiting Nuclear Proliferation* (Cambridge, Mass., Ballinger, 1985); Feldman, *Israeli Nuclear Deterrence* (New York: Columbia University Press, 1982); Avner Cohen and Marvin Miller, "Nuclear Shadows in the Middle East: Prospects for Arms Control in the Wake of the Gulf Crisis," *Security Studies* 1, no. 1 (Autumn 1991); Geoffrey Kemp, *The Control of the Middle East Arms Race* (Washington, D.C.: Carnegie Endowment for International Peace, 1991); and Steven J. Rosen, "Nuclearization and Stability in the Middle East," *The Jerusalem Journal of International Relations* 1, no. 3 (Spring 1976).

Stephen Van Evera and John J. Mearsheimer have called upon the existing nuclear powers to prepare for and eventually oversee the anticipated proliferation process in Europe. Mearsheimer, "Back to the Future: Instability in Europe After the Cold War," *International Security* 15, no. 1 (Summer 1990); Van Evera, "Primed for Peace: Europe After the Cold War," *International Security* 15, no. 3 (Winter 1990/91).

On the management of nuclear weapons, materials, and scientists in the former Soviet Union, see William C. Potter, "Exports and Experts: Proliferation Risks From the New Commonwealth," and the other articles in the special issue of *Arms Control Today* 22, no. 1 (January/February 1992); Kurt M. Campbell, Ashton B. Carter, Steven E. Miller, and Charles A. Zraket, *Soviet Nuclear Fission: Control of the Nuclear Arsenal in a Disintegrating Soviet Union*, CSIA Studies in International Security, No. 1 (Cambridge, Mass.: Center for Science and International Affairs, Harvard University, November 1991).

[116] The United States and the (Former) Soviet Union have preferred ambiguity over visibility for all four de facto nuclear weapons states, not only the South Asian countries. Avner Cohen and Benjamin Frankel observe that while Moscow and the Arab states support the secrecy of Israel's nuclear program, "the United States has been for over two decades the most important collaborator in maintaining the opacity of Israel's nuclear posture." "Opaque Nuclear Proliferation," *The Journal of Strategic Studies*, 13, no. 3 (September 1990): p. 26. The same consideration applies to South Africa. One case in point was the 1977 superpower campaign to pressure Pretoria to dismantle the nuclear test site it was preparing in the Kalahari desert. Another example is the curious silence of the United States and other governments on the military potential of South Africa's nuclear program especially after Pretoria agreed to accede to the NPT.

[117] The term "nuclear opacity" was coined by Cohen and Frankel in "Opaque Nuclear Proliferation."

[118] Feldman, "Managing Nuclear Proliferation," and *Israeli Nuclear Deterrence*. Susan Burns elaborates on some of these concerns: "The prospects for evolution of a stable system of mutual deterrence in a situation of covert nuclear weapons deployments are doubtful. Because secrecy would preclude communicating the adoption of deterrence and crisis stabilizing measures, keeping nuclear weapons covert would effectively freeze in place any existing incentives for preemption during a serious crisis or conventional war." "Preventing Nuclear War: Arms Management," p. 93. For a similar perspective, see Cohen and Frankel, "Opaque Nuclear Proliferation," p. 32.

[119] K. Sundarji, "Former Military Chief Discusses Nuclear Options," *India Express* (Delhi), 20 December 1992; reprinted in *JPRS: Proliferation Issues*, 7 January 1993, p. 11.

[120] Perkovich, "A Nuclear Third Way in South Asia."

[121] Ibid., p. 86.

[122] Neil Joeck, "Tacit Bargaining and Stable Proliferation in South Asia," *Journal of Strategic Studies* 13, no. 3 (September 1990): p. 79.

[123] See Douglas C. Makeig, "War, No-War, and the India-Pakistan Negotiating Process," *Pacific Affairs* 60, no. 2 (Summer 1987); S. M. Burke and Lawrence Ziring, *Pakistan's Foreign Policy*, 2nd ed. (Karachi: Oxford University Press, 1990); and Sarbjit Johal, *Conflict and Integration in Indo-Pakistan Relations*, monograph no. 30 (Berkeley, Calif.: Center for South Asian Studies, University of California, Berkeley, 1989).

[124] For a succinct summary of the basic sources of conflict between India and Pakistan, see Sisson and Rose, *War and Secession*, chp. 3.

[125] Makeig, "The India-Pakistan Negotiating Process," p. 272.

[126] The agreement further discouraged "any propaganda for the amalgamation of Pakistan and India, or portions thereof." *Hindu*, 21 April 1948; Burke and Ziring, *Pakistan's Foreign Policy*, p. 62.

[127] Neither the 1958 nor the 1968 territorial agreements were ever fully implemented.

[128] Makeig, "The India-Pakistan Negotiating Process," p. 288.

[129] Islamabad Domestic Service, 5-7 April 1991, reported in *FBIS-Near East and South Asia (NES)*, 9 April 1991.

[130] For elaboration on this and other examples of violations, see "Confidence-building Measures between Pakistan and India," in *A Handbook of Confidence-Building Measures for Regional Secu-*

rity, Henry L. Stimson Center Handbook No. 1, ed., Michael Krepon, Dominique M. McCoy, and Matthew C. J. Rudolph (Washington, D.C.: Henry L. Stimson Center, September 1993)the forthcoming Stimson Center.

[131] Ibid..

[132] Joeck, "Tacit Bargaining," p. 89.

[133] Quoted in "No Talks Until Stable Government in Pakistan: India," *Nation*, 28 July 1993.

The Use of Force, Nuclear Weapons, and Civil-Military Relations in the Soviet Union and Russia

Igor Sutyagin
Center for Military Policy and System Analyses, Institute of USA and Canada, Russian Academy of Sciences, Moscow
Translated by Arthur Khachikian

Civil-military relations is a subject that creates a great deal of academic interest in any society. This is quite understandable given that the military is the social organization possessing the most destructive potential of the given society. This issue is all the more interesting when one turns to a nuclear-weapons power, especially one in transition from one social model to another, as Russia today. In such cases civil-military relations become more than of purely academic concern.

Timothy Colton noted that "in recent years empirical research on civil-military relations has sprouted vigorously... Yet the accumulation of case studies has not been matched by the development of theory."[1] I do not develop here a comprehensive theory that would explain the peculiarities of civil-military relations and their root causes in Russia. Rather, this paper seeks to examine whether civilians or military leaders have been more hawkish in advocating the use of force in the USSR during the Cold War and in contemporary Russia.

One cannot but share Colton's opinion that "no theory of civil-military relations can be complete without careful analyses of the interaction between the military establishment and the overall political system and its rulers."[2] Such a theory, however, must be supplemented by another important element: the general principles on which the given political system is built and that serve as a basis for issues such as the use of force. Given this general approach, this paper is separated into a number of interrelated parts. In the first part I provide a brief description of the views of Vladimir Lenin, the creator of the Soviet political system, on the use of force. The second part is on the "Soviet way of thinking" as it pertains to the use of force among the representatives of the civil and military establishment. In the third part the peculiarities of the Soviet (and post-Soviet) leaders' attitude toward nuclear weapons are discussed. In order to study this problem in more detail, separate sections of the third part are dedicated to the history of the Soviet-Chinese crisis of 1969 as well as the structure of control over the strategic nuclear forces in the Soviet Union and Russia. Finally, the fourth part of the paper contains a number of propositions about possible future changes in civil-military relations in Russia.

Lenin and the Use of Force

Soviet society throughout its history was strongly ideologically focused, and became more so as the pre-Soviet period of Russian history receded into the past. The foundation of Soviet ideology was laid by the Bolshevik party, which came to power in 1917 and shaped Soviet society until the collapse of the Soviet Union in December 1991. Vladimir Lenin played a crucial role in the formation of party ideology and attitude. It was in fact mandatory for any Party or Soviet functionary to manifest his or her loyalty to Lenin after his illness in 1922-1923 and particularly after his death in January 1924.

After his death Lenin became a kind of religious cult figure, an incarnation of the wisdom and humanism of the party, who like Moses in the Sinai desert led his people from slavery to the bright future. Sculptures and pictures of Lenin appeared in the Soviet Union almost as often as the image of Christ in Christian countries. Quite naturally, this propaganda in the course of time succeeded in having its impact on the people and the initiators of the propaganda itself—the party and Soviet leadership. Lenin's theoretical postulates gradually became the basis on which the mentality of the Soviet leadership cadres was formed. It is therefore necessary to examine Lenin's views on the issue of the use of force in order to see how this issue was resolved in the later period of Soviet history.

Lenin's contribution to the development of Karl Marx's teaching may be divided into two main parts. The first one—the analysis of the economic structure of monopolistic capitalism—developed the "economic" direction of Marxist theory. But the second most important contribution made by Lenin to the development of Marxism was his theory of socialist revolution. The work of Lenin in this field was quite utilitarian in nature. His main objective was to define the conditions and measures that made it possible to achieve victory in this revolution and, ultimately, to transfer power into the hands of social forces led by Marxist-Leninists.[3]

Lenin defined his attitude toward the use of force to attain this objective in 1905: "it is only with the use of force that the great historical issues may be resolved."[4] And that force was to exist not in economic coercion or other non-military means,[5] but, as Lenin wrote quite clearly, in military power: "Our slogan has to be *arming* the proletariat in order to win, to expropriate and disarm the bourgeoisie. This is the only possible tactic..."[6] This conclusion, according to Lenin's logic, is true not only for the moment when it was formulated, but is universal for every capitalist society, because "arming the bourgeoisie against the proletariat is one of the most significant, essential, important factors of the modern capitalist society."[7]

Quite understandably, under these conditions, the goal, "to win, expropriate and disarm," could only be carried out by means of direct military confrontation between the armed troops of the bourgeoisie and the proletariat. What that means is civil war, the ultimate degree of violence possible in a state not subject to military invasion from outside. Lenin emphasized the necessity of unleashing civil war in order to gain political power for the proletariat a number of times in his works. Marxism views human history as a class struggle.[8] Correspondingly, "a Marxist advocates the class struggle point of view, and not that of a social world."[9]

Therefore, in 1906, at the peak of the Russian revolution, Lenin wrote "in periods of acute economic and political crises, the class struggle develops into an open civil war, i.e., into armed struggle between the two parts of the people. In this period of time, a Marxist must adhere to the point of view of civil war. Any moral condemnation of it is quite

impermissible from the point of view of Marxism."[10] The same stance was taken by Lenin ten years later, at the dawn of the new revolution in Russia: civil wars "...in any class society are natural under certain circumstances—inevitable continuation, development and intensification of the class struggle...To deny civil wars...is to fall into extreme opportunism and to reject the socialist revolution."[11]

Lenin did not limit himself to important theoretical conclusions about forms of the class struggle. Civil war was to become an element of the Bolsheviks' activity program. Lenin strove for that in a most decisive way, by calling on Social-Democrats to support and lead the initiation of a civil war: "Social-Democracy at the time when the class struggle has grown into a civil war should not only participate in it, but take the leading role in this civil war."[12] One's attitude toward the use of force, Lenin was convinced, was an indicator of one's loyalty to the cause of revolution.[13]

It would be easy to create an image of Lenin as a blind fanatic striving to use unlimited violence to achieve his objectives.[14] But this conclusion is incorrect and would only make it more difficult to study the uniqueness of the mentality of Soviet leaders. Indeed, Lenin was never a zealot, and certainly not a blind zealot. Rather he was a skilled tactician, a realist, soberly evaluating the chances for success in any given situation.[15] If the chances for success of the action were zero, he openly labeled the calls for action as adventurist: any rebellion, especially revolution, had to be ripe.[16]

If success was possible, however, Lenin urged the use of all means to achieve victory.[17] (This by the way is an important trait of his mentality, which was not inherited by the following generations of Soviet leaders, as we will illustrate later.) The use of force, Lenin thought, had to be most decisive. For instance, discussing the mistakes of the Paris Commune in 1871, he wrote "the mistake was in the excessive lenience of the proletariat: it was necessary to exterminate its enemies, and not to try to morally influence them..."[18]

The irreconcilable struggle for the interests of the proletariat (or for political power for the party) always remained a top priority for Lenin. His opinion on the use of force, aimed at abolishing the exploitation of the proletariat, was consistently applied to the whole spectrum of possible conflicts. One of them was the case of "national wars," i.e., wars for liberation from colonial rule. A war conducted with this purpose was traditionally considered by Socialists and Social-Democrats to be "just," and moreover defensive, on the part of the subjugated nation, "irrespective of who attacked first."[19] Later on, Lenin, consistently following his theoretical principles, broadened the circle of wars that were to be considered fair and consequently, defensive. In "The Military Program of the Socialist Revolution" there is a statement that helps explain why particular views about the "Soviet military threat" emerged. It says: "It would be simply stupid to deny the 'defense of homeland' on the part of subjugated peoples in their war against imperialist great powers or on the part of the victorious proletariat in his war against some Galliffet[20] of the bourgeois state."[21] He continues, "to recognize 'defense of homeland' in the given war is to consider it 'just,' corresponding to the interests of the proletariat ..."[22] In 1918 in his appeal "The Socialist Homeland Is In Danger!" Lenin made it clear that not only were wars against *national* counterrevolution just wars, but that wars against all counterrevolutionary forces, including foreign states, were just.[23] These key Leninist arguments—that any war that corresponded to the interests of the proletariat was just and that just wars are defensive ones, "irrespective of who attacked first"—were central themes. Lenin's argument should be quoted at length:

> Exactly because we are for the defense of the motherland, we urge serious attention to the security and military preparation of the country...One has to be prepared [for war] for a long time, seriously, starting with the economic recovery of the country...It is a crime, from the point of view of defending the motherland, to engage in a military struggle with an adversary which is infinitely more powerful and ready, when you know that you don't have an army...a country where the socialist revolution started must avoid military encounters...—precisely because at the moment when "the last decisive battle" starts, this country would be able to do something serious...This battle will start only when the socialist revolution in the leading imperialist countries will break out...[24]

With this logic—understood at times creatively, at times dogmatically—the education of Soviet leaders in the post-Leninist period was carried out. Its concrete effects in regard to these leaders will be examined in the following sections. It is necessary, however, to point out the three characteristic points in Leninist political views. The first is Lenin's recognition of the party's leading role in the whole political and social life of the country. The second is the pathological mistrust and intolerance of anyone who does not agree with the conclusions of the party at any point. The frequent result of that is the mistrust of specialists in narrow fields of knowledge and practice. The third point is Lenin's unconditional recognition of the principle of collective responsibility of leadership in making the most important decisions.

The Soviet Mentality—the Civilians and the Military

Civilian (Soviet and party) leaders of the USSR were brought up on the Leninist attitude toward the use of force; it was given a very important place in the arsenal of political tools. A number of other historical and psychological factors, apart from the quasi-religious cult of Lenin, contributed to this point of view. The first factor is that most of the post-revolutionary group of Soviet leaders gained their formative experiences in the years of the civil war.[25] Coercive methods of attaining goals were also learned "from the day of birth" by members of the first post-war generation of leaders who were educated in coercive politics during the Stalin years or during the years of the Great Patriotic War. The people who belong to these two generations were the leaders of the Soviet Union from the moment of its creation in 1922 up to the end of the 1980s. Their influence still has an impact on the present generation of young politicians and their way of thinking.

The psychological factors that cemented a predisposition toward the use of force in the mentality of the Soviet leaders are more numerous and diverse than the historical factors. A psychological climate grew within the Soviet hierarchical system in which any disagreement or unsought advice was not accepted by the superior officials, whose opinion was imposed on their inferior "vassals." The senior official became a monopolist of the truth, its ultimate incarnation. This disease spread to all levels of the Soviet system—from the highest to the lowest. Under these conditions leaders at all levels tended to surround themselves with "yes men" who would not criticize their actions. Individuals were not very eager to criticize their leadership or its actions except when they were instructed to do so by a higher authority.

Over the course of time, owing in part to the promotion of "first persons" to higher ranks in the hierarchical system, those on the lower level were advanced to higher positions

and in turn surrounded themselves with their own "yes men." This was the root cause of the catastrophically fast degradation of the Soviet leadership, which has been described and analyzed in detail in the series of articles by Aleksandr Tsipko.[26] This degradation affected many qualities of the Soviet functionaries, including, naturally, their capacity for critically assessing a situation and, more importantly, the feasibility of using coercive methods in a given situation. Brought up on Lenin's irrevocable principles and with particular attention to coercive tools, Soviet functionaries in the course of the corruption of the system were more and more inclined to use force.

The most illustrative examples of this trend may be found during the years of Stalin's leadership. In 1922 the Soviet Union started the creation of its integrated Air Defense system. The commanders of Air Defense were convinced that this system should be placed under central control. However, their views did not coincide with the opinions of Stalin and his entourage. Voroshilov and Budionii were convinced that the main force in the future war would be cavalry. The differing approaches to the creation of the Air Defense system were resolved in quite a simple way and according to the spirit of the time: five out of eight pre-war leaders of the Air Defense who tended to think independently were declared "enemies of the people" and executed. As for the rest, they no longer disagreed with the views of Stalin, Voroshilov, and Budionii on the role, objectives, and structure of the Air Defense.[27]

It appears that the second reason for the growing inclination toward the use of force was that coercive methods of attaining goals generally seemed to be more simple, understandable, and effective than non-coercive ones. In the climate of the general decline in the intellectual level of Soviet leadership, the seemingly simple and clear character of coercive methods could make them a favorite tool for solving many emerging problems.

These problems were further amplified by yet another political-psychological phenomenon: the collective irresponsibility typical of the partisan branch in the Soviet power structure. Because the Communist Party was not playing any formal role in the Soviet state system until 1977, the party bore no formal responsibility for administrative and political decisions that were made and implemented on the state level. In the case of a mistake, those responsible were always single individuals, not the party as a whole or particular party bodies. In regard to party decisions another "line of defense" was in effect: collective responsibility, the consequence of the Leninist principle of the mandatory collective character of decision-making. The personal fault of anyone from the party leadership was simply impossible to determine.

A striking example of this phenomenon occurred in the mid-1980s. On March 12, 1986, the *USS Yorktown* and the *USS Caron* entered the territorial waters of the Soviet Union near the Crimean peninsula, demonstrating the right of "innocent passage." [28] However, unlike previous cases of penetration into the Crimean area (which had become customary) this time the radars of the two American ships and the means of radio-technical reconnaissance were functioning to the fullest extent, while according to the international norms of peaceful passage they were supposed to be turned off. These American actions were perceived as a challenge to the international prestige of the Soviet Union, and after discussing the options of reacting to such actions should they reoccur in the future, the small group of Politburo members headed by General Secretary Mikhail Gorbachev decided that if the American ships entered the Soviet territorial waters again, they should be pushed out with the use of all available coercive methods—including physical contact with the ships.[29]

In February 1988 the *USS Yorktown* and the *USS Caron* entered the Black Sea once again and proceeded toward the southern shore of Crimea. The events that followed are well

known—the American ships entered the Soviet territorial waters and were pushed out. In the process the Soviet guard ships *Bezzavetnii* and *OKR-6* touched each U.S. ship. The events that then unfolded in Moscow were illuminating. The commander of the fleet was accused of committing a criminal arbitrary action that could lead to serious international consequences. This accusation originated from, among other sources, the apparatus of General Secretary Gorbachev, who two years earlier had signed the decree providing a basis for this action. Gorbachev refused to talk to Admiral Cherniavin, who was trying to clarify the situation. The document that originated from the Politburo in 1986, and which could prove the case for Cherniavin, was nowhere to be found, and no one, including the General Secretary and the General Staff officers who prepared the documents for that Politburo meeting, remembered a decision like this to have been approved. It was only after the intervention of KGB Chairman Viktor Chebrikov, who was present at that meeting and called Gorbachev personally, that the situation changed and Gorbachev suddenly remembered everything and dropped the accusations against Cherniavin.[30] The necessary papers were then immediately found in the General Staff.[31]

Since it was impossible to act without a direct personal order for the use of force, the leaders, in most cases, tried to use the so-called "telephone law." This was the common practice by which orders were given orally and not documented anywhere, and responsibility for any negative consequences was bestowed upon the immediate executor, who was blamed for incorrectly interpreting the oral instructions. An example can be found in the history of the suppression of a workers' demonstration in Novocherkassk in summer 1962.[32] At that time troops from the Northern Caucasus military district were used against the demonstration of workers from the Novocherkassk Plant of Electric Engines, as a result of which several dozen people were killed. The Secretary of the Central Committee of the Communist Party of USSR Kirilenko urged General Pliev, the Commander of the Northern Caucasus Military District troops, to "liquidate" the situation that emerged in the city.[33] And "no written or coded document that could serve as a basis for the use of troops in reinstatement of public order in Novocherkassk...existed."[34]

As a rule, even functionaries responsible for making mistakes escaped serious punishment. They were spared because of their affiliation with the "highest caste," the *nomenklatura*. In the Soviet system affiliation with the party and "loyalty to its ideals" gave individuals a sort of carte blanche for having true knowledge about "the most general laws of development of the society," and made them irreplaceable for governing this society. Hence, punishment for the mistakes of the *nomenklatura* leaders was often confined to ousting them from their current position of leadership and appointing them immediately to another one, perhaps in a totally different sphere of activity. This situation encouraged a certain haste in making decisions for the use of force. In fact, for the Soviet *nomenklatura* leader it was typical to use simple methods for solving the most complicated problems, compounded by the knowledge that something truly monstrous must happen before the leader would be punished seriously. Irresponsible belligerent incompetence—this was the fundamental attitude of the Soviet leadership on the use of force. And it was precisely these people, i.e. mainly civilian Soviet functionaries who, finding themselves in difficult situations, were most inclined to advise the use of force.

But the revelry of violence, particularly in the foreign political activity of the Soviet Union, was restrained by another, inversely directed factor. This was the Soviet leadership's fear of the possibility of open military confrontation with the West, which surfaced most distinctly beginning in the second half of the 1960s. The evidence that such fears existed is

very strong. The long education of the country based on the thesis that the USSR was a "besieged fortress" in Lenin's words, surrounded by a hostile environment, contributed to a general premonition of inevitable distress—fear of the imperialistic aggression.[35]

This premonition was reinforced by the historical experience of people who had survived numerous bloody invasions of a kind rare in the history of other European countries. We should remember that Russia was under the Mongol-Tatar yoke for a time one and one-half times longer than the whole history of the United States. Therefore, fear of foreign invasion and occupation is alive in the historical memory of the Russians. If the Japanese after Pearl Harbor had occupied the whole area of the Great Lakes, entered Boston and Philadelphia, surrounded New York with a blockade, and approached Washington to within the distance of artillery fire, Americans would have had a better understanding of the nature of the Russians' contemporary fear of invasion. The Soviet leaders of the post-war period felt all that.

Moreover, the leadership of the Soviet Union always bore in mind Lenin's words that it is impermissible to "engage in a military action with an infinitely stronger and more prepared adversary,"[36] and the subsequent need to avoid war as long as the USSR had not achieved parity with the military power of the adversaries. The decline of the intellectual level of the leaders, who dogmatically repeated the thesis about the irreconcilable animosity of imperialism toward the socialist countries, did not allow them to soberly assess either the real level and character of the existing external danger for the country, or the might of their own forces. The former was constantly overestimated, and the latter almost always underestimated.

Because of the aforementioned psychological peculiarities, the Soviet leaders understood and preferred military methods of resolving complex political problems. Therefore the task of strengthening the defense of the country was understood primarily in terms of boosting the combat power of the armed forces. Other ways of building the armed forces—such as the creation of the rear infrastructure, instrumental for attaining the goal of the "Soviet fortress"—were far less evident. As a consequence, the armed forces developed unevenly—the Navy commanders, for example, in order to maintain favorable ties with the state leadership (or to appease its wrath), had to report a growing number of combat ships rather than the increasing fortification of the "harbor front."[37] As a result, short-term organizational factors led to the long-term weakness of the combat power of the fleet, which was deprived of its rear support. The same occurred in other branches of the armed forces—the main part of all efforts and resources[38] was allocated for the creation of expensive offensive systems, without other elements of the integral combat system (such as support, control, and maintenance) being developed.[39]

The result of this "overestimation/underestimation" phenomenon was the primarily defensive psychology of the USSR leadership,[40] the inclination to wait until the very last moment, without taking positive action against the adversary who was assumed a priori to be more powerful. The use of force, including preventive use, was allowed by the party mentality, but only against the weaker side, or in the regions where the West was not strong enough and was not closely involved in events. That is why, as Colton argued, "...[the Soviet leaders] have been extremely reluctant to commit the armed forces to any sort of foreign conflict, doing so only when attacked or after accumulating a major prior advantage."[41]

Military Leaders Compared with Civilians

Military leaders, for the simple reason that they were a product of the same system as the civilian leaders, showed the same peculiarities of thinking. But there were specific differences as well. First of all, the professional focus of the military gave them a higher level of competence in military judgments than the civilian leadership. Hence, military officers understood the limitations of using coercive tools and the possible consequences of the use of force somewhat better than civilians.

The following three examples—the invasion of Czechoslovakia, the Afghanistan intervention, and the August 1991 coup attempt—all illustrate this point.

In May 1968 the Soviet leadership used the 24th "Iron" Samaro-Ulianovsk Division in order to exert pressure on the leadership of Czechoslovakia. This same division, among other Soviet troops, was deployed in Czechoslovakia in August of the same year and remained there until November 1. Twenty-five years later *Ogonyok* magazine published the diary of Colonel Mikhail Kolesnikov, who at the time was the commander of the Iron Division's missile artillery units. Here are some excerpts from this publication:[42]

> "April 14. [After the conversation he had with the officers of the division about its possible deployment in Czechoslovakia]...Generally speaking, no one has a particular desire to go to Czechoslovakia."[43] "May 10. [The Division is redeployed from USSR to Poland, and the officers are handed maps of Czechoslovakia]. The general opinion is there are no reasons to go to war. If the politicians made an error, it should not be corrected with bayonets. [44] "July 2...I read the declaration called "two thousand words" and the answer of the Central Committee of the CCP...There are a lot of rumors in Czechoslovakia about leaving the Soviet troops in the country, that this was allegedly demanded by Smirkovskii in response to the "two thousand words." I am afraid that we are on the brink of interfering in the internal life of Czechoslovakia. We are reluctant to do that."[45] "July 10 [The division was redeployed from Czechoslovakia, not to the USSR, but to Poland, the situation in Czechoslovakia and around it having worsened.]. I am afraid that the order for deployment of troops will be given. This may lead to grave consequences. Our government is far away from here, in Moscow. They will later say that this was the error of the military."

At the close of 1979 the General Staff recommended refraining from deployment of Soviet troops in Afghanistan.[46] But when the decision on the deployment of troops was made anyway under the pressure of the civilian leaders,[47] the General Staff proposed a plan according to which troops were to be deployed in garrisons in the northern part of Afghanistan [48] as a shield closing access to Soviet territory. According to this plan the Soviet troops were not supposed to take part in the military actions of the government troops of Kabul.[49]

In August 1991 the coup plotters assigned the special anti-terrorist group "Alfa" the task of storming the building of the House of Soviets of the Russian Federation (also known as the White House) where the president of the Russian Federation, Boris Yeltsin, stayed. The same orders were given to Military Regiment 25690—the Special Training Center of the KGB, also known as the "B" group, which specialized in actions outside of the USSR. After a preliminary reconnoiter around the "White House," the "Alfa" group refused to carry out

the orders: as professionals, group members realized that if they participated in these events, the results would surpass the Tiananmen Square ordeal. The "B" group members also refused to participate in the bloodshed.[50]

Bureaucratic Rule

As a result of their better understanding of the possible consequences of the use of force, the military often perceived significant restraints (compared to civilian advisors) in regard to proposals to use force.[51] Another reason for the military's unwillingness to advise the use of force was the fact that the Soviet military policy, as Colton argued, "for most of Soviet history...has been essentially *bureaucratic politics*..."[52] Therefore Soviet military learned well the bureaucratic "telephone law" rules and realized that in case of an unfavorable development of events the blame would be placed on them. In such cases it would be difficult for the military to avoid responsibility, because unlike the situation with *nomenklatura* functionaries, the principle of personal responsibility for orders is strictly reinforced in the armed forces.

The bureaucratic rule that was in force in the Soviet system, which dictated that "initiative is punishable by its implementation," was a gloomy one for the military. Implementation of a proposal to use force, naturally, may be delegated to the military advisor who made the proposal, who in this way will be considered the author of the decision. Understandably, under these circumstances the military were inclined to propose the use of force mainly in those cases and in such a way that they were practically one hundred percent sure of the successful outcome of the action.

When ordered by civilian politicians to begin doubtful military actions the military occasionally, albeit rarely, went as far as sabotaging "political orders." That happened in 1956 in Hungary when the Soviet garrison in the city of Dierre refused to fire at Hungarian rebels and some tank units even supported Hungarians.[53] Nineteen years later during the suppression of "Sablin's rebellion" aboard the guard ship Storozhevoy led by Captain 3rd Rank Valeriy Sablin, Captain 1st Rank Alexey Neypert was ordered to fire at the ship. He waited, however, until it was too late for the order to be fulfilled.[54] At the same time pilots of the whole regiment of missile-carrying bombers refused to attack the ship.[55]

These "pacifist" actions of some officers were, however, more of a deviation from the norm than a trait of the military mentality.[56] The majority of Soviet military were not inclined to question decisions of the civilian politicians but instead accepted them for full implementation, even when they categorically disagreed. The historical experience of the military gives them special grounds not to object to civilian politicians.

During the first thirty years of the Soviet regime, military specialists were subjected to constant suspicion by the politicians. This was largely a result of the aforementioned tendency of the party not to trust specialists of any kind. In addition, the military were different from other specialists because of the role they played vis-a-vis the tools of force that were so highly valued by the party. Besides, the Soviet regime during the early period of its history did not have enough time to develop a generation of major military experts of its own, and therefore many of the experts had the burden of a "bourgeois past" on their shoulders. According to the assumptions of the party mentality, this was a strong enough reason for suspecting a person of a hostile attitude toward the regime. As Roman Kolkowicz

noted, the institute of commissars in the Soviet army was created precisely for the purpose of exercising political control over the actions of the czarist "military specialists," none of whom were fully trusted.[57]

In the 1920s mistrust of the military found its outlet: the army became subject to repression that was far more intense than that experienced by any other state institution or social stratum. In the short period from May 1937 to September 1938, 39,761 officers of the armed forces became subject to repression. All the commanders of military districts were ousted and the majority of them executed; also subject to repression were 90 percent of their deputies, heads of staff, 80 percent of the commanders at the corps and division level, 91 percent of the commanders of regiments, their deputies and heads of staff. Many military scientists, lecturers in military schools and academies, were subject to repression as well.[58] The total was stunning: nine out of ten Soviet officers were subjected to repression within a one-year period. This terrible experience was recorded in the military's collective memory.

Colton wrote that the terror of the 1930s was not a rational instrument of political control:

> It struck down friends as well as potential enemies, the true believers along with the fellow travelers. Stalin's officer corps was loyal, but this might have been in spite of, rather than as a result of, the terror.[59]

But one should take into consideration the specific trait of the totalitarian regime summarized in the sad Russian proverb: "beat your own people, in order for others to fear you." From this point of view, in contrast to Colton's argument, Stalin's terror was the rational enough "instrument of political control."

The issue was further complicated by Stalin's way of dealing with his opponents. It was amply described in Khrushchev's secret report "On the personality cult and its consequences" at the 20th Congress of the CPSS in February 1956. The non-juridical term "enemies of the people," invented by the functionaries, "immediately obviated the need for any evidence of ideological faults of a person or people with whom one was debating: it provided the opportunity of using the most cruel forms of repression against anyone who disagreed with Stalin, who was only suspected of hostile intentions, who was simply slandered."[60] Under such conditions, the only one who can hope not to make mistakes is the one who does not do anything.

This particular attitude often determined the actions of the military. Many examples of this may be found in the combat activities of the Air Force and Air Defense against violators of Soviet airspace. The standing orders of the combat units of the Air Defense are stated in such a way that the on-duty officer responsible for making decisions on action against violators "may end up in jail both for missing the target and for shooting it down."[61] This kind of psychological pressure leads to a situation where officers on combat duty are often not ready to make decisions on the use of force.[62] This is typical not only for lower ranking officers on duty, but also for senior military officials. For example, on July 1, 1960, Captain V. Poliakov's MiG-19 took off to intercept the reconnaissance plane RB-47 over the Barents Sea. His guidance to the target was very competently accomplished by a senior officer of the fighter regiment. But at the moment when the target started to get away and Captain Poliakov asked the officer to sanction firing at the violator, the officer lost control over himself, and remained in that condition until the end of the combat. The order to fire was instead given by the officer's young subordinate.[63]

When the Cessna-172 plane piloted by Matias Rust crossed the frontier of the USSR on May 28, 1987, Major-General G. Kromin, who received the report about the violator, feared to make a decision identifying the detected target as foreign [64] and transferred the information to the Moscow Air Defense District and to the Central Command Post of the Air Defense Forces, reporting the aircraft as a Soviet training plane from the DOSAAF system (Organization of Volunteers Assisting the Army, Air Forces, and the Navy). The Air Defense Central Command Post transferred responsibility to the Moscow Air Defense District. The latter did not pay attention to the simple "violator of the flight schedule."[65] As a result Rust landed in Red Square.

A less well-known but much more serious incident occurred on April 4, 1983, when a group of planes from the U.S. aircraft carriers *Midway* and *Enterprise* penetrated Soviet air space near the Kuril Islands and carried out training bomb-drops after making a number of approaches for attacking ground targets. The commander of the aviation division whose zone of responsibility included the area of invasion by the American planes did not even get fighter jets in the air for intercepting the violators.[66]

The explanation provided by the general afterwards was simple and clear: direct orders existed not to act against violators of Soviet airspace without direct permission from Moscow. The attempts to communicate with the capital, however, took much more time than was needed for the "intruders" to enter Soviet airspace, carry out mock attacks, and fly away.[67] (It was good that the general's actions prevented a probable Soviet-American crisis. Nevertheless it would be interesting to imagine the American people's reaction to information that the local commander on the *Hawaii* refused to launch interceptors to stop Soviet Backfires intending to carry out mock attacks against U.S. ships in the vicinity of Pearl Harbor.)

It was in this way that a very surprising phenomenon emerged—the definite unwillingness of the Soviet military to use force. The goals of politicians in the Soviet Union were mostly attained. The army obeyed orders and did not have a desire to act that was greater than the will of the civilian politicians to use the army.

Soviet Leaders and Nuclear Weapons

Soviet leaders have been extremely reluctant to commit the state to any sort of foreign conflict, especially conflict with powerful military opponents like the Western alliance or China. If a direct military confrontation with powerful enemies could not have been avoided, however, the civilian leaders of the USSR would have demanded that the military use troops on such a scale and in such a fashion as to guarantee a quick victory for the Soviet Union. We already mentioned the reasons for that: when the leaders of a state are not confident of the combat capabilities of their troops, the desire to avoid the threat of war is only natural. And the goal of victory meant the desire to eliminate any possibility that the actions that led to the given armed conflict would reemerge in the future. In other words, the Soviet Union would attempt to repeat the experience of victory over Germany in 1945. The adversary and any threat from his side would have been "liquidated." This was precisely one of the reasons for the offensive direction of the military-technical part of the Soviet military doctrine for a period of 65 years.[68]

But this peculiarity had direct influence upon Soviet armed forces' operational planning too. The political leaders demanded that the military guarantee the quickest and the most decisive victory. To attain this objective it was necessary to carry out offensive operations on a broader front and with greater speed than was planned by the Western armies. This was the way in which, under the pressure of the civilian bureaucrats, the combat codes and the operational instructions of the Soviet army were radically changed and caused serious concern in the West—the front operation in the 1960s was planned to be carried out to a depth of 1,000 km; and the speed of the offensive overall was 100 km in 24 hours and 150 km for the tank units specifically. [69]

The military objected to this approach to planning combat operations, making a strong argument that this scale of operations was impossible to achieve in reality. But in the Soviet Union, civilian orders were sacrosanct and these unrealistic demands for combat operations became the basis on which the training exercises of the armed forces were later built. And in order to keep up with the required "political" speed of the offensive operations, the military included in the operational plans an inconceivable number of nuclear strikes on the troops and the rear of the enemy—100-120 for an offensive of one army, after which the troops were required to restore their combat capability in a short time and continue to carry out their objectives to the full extent.[70]

All this had little in common with the normal process of operational planning. Under such conditions the military, instead of actually preparing the troops and the staffs for combat operations, strived to guess the intentions of the superior commander and to build their actions in such a way as to correspond to these intentions, unrealistic as they might be.[71] This approach presupposed a degree of caution that was not typical for other situations and absolutely ruled out the possibility that anyone from the military would propose a more decisive course of action than the top civil leadership.

Nevertheless, even in this abnormal situation the military made certain efforts to defend their standpoint on the preferable way of using the armed forces, which was more realistic than that of the civilians. Thus, the conclusion that any future war would become a war of mass usage of nuclear weapons in its earliest stage was arrived at in the 1950-1960s by the civilian political leadership.[72] The "sword" followed the "toga," and this conclusion was reflected in a number of works on military theory (including Sokolovskiy's famous book *The Soviet Military Strategy*) and in specific military planning (this instruction of the state leaders was among the reasons for including the inconceivable number of nuclear strikes that was mentioned earlier). But by the second half of 1960s the Soviet military had rejected the idea of nuclear war-fighting with a devastating first nuclear strike—it was assessed as almost totally unrealistic. On the contrary they decided the future war could have an effective non-nuclear initial period. Work on the third edition of *The Soviet Military Strategy* was underway at that time and Marshal Sokolovskiy wanted to reflect that change in the Soviet military thinking in the new edition of his book. Nevertheless the edition of *The Soviet Military Strategy* which appeared in 1968 did not differ from the two previous ones in this respect—Sokolovskiy was simply not allowed by the top political leaders to change the text.[73]

Nevertheless even that formally "hawkish" position of civilian politicians toward nuclear weapons had its own internal logic. Military in the Soviet Union were rarely allowed to participate in resolving problems beyond their specific field of responsibility. Grand policy was obviously one of such problems and the example of Sokolovskiy's book proved that. Soviet leaders have reacted to the nuclear age (especially relations with other nuclear powers)

by adjustment of strategy, policy, and even ideology to give highest priority to preventing war.[74] Meanwhile the Soviet strategy for averting war was mainly a political one.[75] Soviet leaders saw the prevention of war as something to be achieved mainly by means of a "peace policy"—a foreign policy that sought to reduce the risk of war—backed by military might.[76] Hence in Soviet military (and political-military) thinking the prevention of war was seen as the responsibility of the party leadership, not of the military, except insofar as war was to be prevented by effective military preparations. Therefore statements of *The Soviet Military Strategy* dealt more with the declaratory strategy than the current state of military thinking and that was the reason why Sokolovskiy was not allowed to incorporate changes into the text reflecting the reduced emphasis on *nuclear* war fighting, regardless of whether it was real or only declaratory.

Soviet civilian leaders since 1945 paid great attention to the political value of nuclear weapons and always used those weapons as political rather than military instruments. It is noteworthy in this connection that the Soviet Union proclaimed that "the secret of the A-bomb" had been discovered in 1947, when only the main theoretical studies were finished—that was two years before the "RDS" ("Rossiya Delaet Sama"—"Russia Makes Independently"), the first Soviet nuclear test, took place in the Kazakh steppe. Even after August 29, 1949, four years passed until the first *serial* air-dropped 30 kt "Tat'yana" atomic bomb entered the Soviet arsenal in 1953.[77] In these circumstances, the Soviet leaders were anxious to demonstrate that they would not be intimidated, even by the atom bomb[78]—and Stalin's leadership played down the importance of nuclear weapons and strategic bombardment because the West remained significantly ahead in this area.[79]

Meanwhile Stalin paid great attention to nuclear weapons—it is well-known now that the order to Kurchatov to accelerate his work was Stalin's first reaction after he was informed by Truman in Potsdam about the American "Trinity" test in Alamogordo. The same reason was behind the decision to copy the American model of fission charge, information of which was obtained with the assistance of Klaus Fuchs, while Soviet specialists were already in an advanced stage in their development of a more effective design: the Soviet Union urgently wanted to display, as early as possible, that it possessed nuclear weapons.[80]

Nuclear weapons remained for Soviet political leadership almost exclusively political after Stalin's death. Leaders used the tool in their political purposes—sometimes very skillfully. The Sino-Soviet conflict of 1969 could serve as evidence of the latter.

The "China Crisis" of 1969

The escalation of the military confrontation between the Soviet Union and China began in 1964. To a certain extent this was explained by the fact that, after its first nuclear test, China became far more confident and acquired the capacity of taking a more independent stance with regard to the Soviet Union. Also in the same year the Chinese-Soviet negotiations reached an impasse. Soviet leaders could not ignore the threat that was contained in the declaration made by the head of the Chinese delegation at the last session, that the People's Republic of China was not satisfied with the results of negotiations and "could entertain the thought of examining other ways for resolving the issue."[81]

In 1966 the Soviet-Mongolian Treaty on Friendship and Cooperation was signed,[82] according to which Soviet troops entered Mongolia and were deployed along its frontier with China. This step was perceived as a threat by the Chinese and by 1967 the number of Chinese troops on the border with the Soviet Union reached 400,000.[83] What followed were the events of August 1968, and the leaders of China had certain grounds to worry about the possibility of the "Czechoslovakian scenario" being repeated in China by the Soviet leaders. Mao's response was his call "to prepare for the war" to show that China would not be intimidated by the military threat.[84]

This was an unfavorable turn for the Soviet Union. The military were concerned with the numerical advantage of the Chinese regiments on the Soviet borders. Military experts in both the USSR and China realized that at that moment the Soviet Army was not prepared for large-scale combat operations in the border regions.[85] This created a "window of vulnerability," a temptation that the Chinese, as it was feared in the Soviet Union, could be unable to resist, after having threatened to think about "other ways of resolving the [border] issue." Moreover, China was in a critical stage of the Cultural Revolution and one could not rule out the possibility that someone seeking to enhance his political standing among the local leadership in the Chinese border regions would provoke the beginning of combat operations.[86]

In these conditions the Chinese attack of March 2, 1969, against the Soviet border point ("pogranichnii punkt") Nizhne-Mikhailovka on Damanskiy Island[87] seemed for the Soviet leadership to be evidence of their greatest concerns. The attack was repeated on March 15[88] and Soviet Chairman of the Council of Ministers A. Kosygin failed on March 21 to establish direct contact by telephone with the Chinese leaders[89] when he tried to resolve the problem by negotiations with the Chinese leadership. The Soviet leaders were so frightened by the events that they even appealed for help at the summit conference of Warsaw Pact leaders two days after the second attack on Damanskiy, proposing that the Eastern European countries offer demonstrative support for the Soviet Union by dispatching token forces to the Far East.[90] The result was negative—the USSR was left on its own to oppose China.[91] Meanwhile the Chinese escalated their actions: after the Soviet official proposal of March 29 to begin negotiations [92] there was no official Chinese answer. Further border clashes took place on April 16-17 and April 25 near Chuguchak, on May 2 near Yu-Min (both on the Sinkiang border), on May 12-15 near Hu-Ma, on May 25 near Ai-Hui, and on May 28 near Fu-Yuan (all on the Amur River).[93] At the same time in April 1969 some Chinese diplomatic missions abroad circulated a new map that gave Chinese place names for various locations in the Soviet Union, including Vladivostok.[94]

The Soviet leaders continued to seek negotiations and after the border clash of June 10 near Yu-Min [95] the USSR again proposed, on June 13, to start negotiations on the questions concerning border lines "in two to three months," i.e., not later than September 13.[96] The Chinese did not reply to the stated problem.[97] Instead of negotiations on the border line, a discussion restricted to the problem of navigation on the border rivers started on June 18.[98]

Nevertheless even those negotiations were interrupted by one more border clash, on Amur on July 13,[99] after which the Soviet government in a secret message of July 26 proposed negotiations once again.[100] The Chinese refused to reply, and soon a bloody accident took place, on August 13 near Zhalanashkol' in the Semipalatinsk Region.[101] That happened only two kilometers from the Trans-Siberian Railway Road, which was the only transcontinental transportation of the Far East region. Given the numerical superiority of the Chinese troops and the fact that the rail interruption would be extremely valuable for the

Chinese from the military point of view, the possibility that the Far East could be cut off from the European USSR seemed very real. In those conditions the Soviet leadership, which had always kept in mind the "direct correlation between military strength and its ability to pursue a whole range of highly valued objectives in world politics,"[102] could not further neglect its own maxim articulated by Mikhail Frunze in the 1920s: "The stronger and more powerful our Army is, *and the more it is a threat to our enemies*, then the more our interests will be served."[103] The events on the Sino-Soviet border made it clear that the "peace policy" totally failed.

The Soviet leaders thought that the Chinese would come to the negotiating table if they felt not just the existence of the most terrible threat—that of a preventive nuclear strike (which they realized from the very beginning)[104]—but also the complete plausibility of this threat being implemented. [105] It was obvious from Frunze's aforementioned statement that the old maxim *Si vis pacem, para bellum* was creatively improved in the Soviet Union by adding "and make it clear to your opponents that you are prepared to wage a war and have the will to do so." Therefore, after the series of bloody border clashes, the Soviet Union, according to Raymond Garthoff, brought some "bomber units from the Western USSR to Siberia and Mongolia and engaged them in mock attacks against targets made to resemble nuclear facilities in Northwest China."[106] Nevertheless that did not contradict the peaceful intentions of the Soviet Union.

Partly because the Chinese refused to understand the message and partly because of the extremely dangerous events near Zhalanashkol' the Soviet actions after August 13 became much more decisive, albeit still purely political in nature. As Kissinger noted, on August 18 a middle-level State Department specialist in Soviet affairs was suddenly asked by a Soviet Embassy official what the U.S. reaction would be to a Soviet attack on Chinese nuclear facilities.[107] In late August the United States detected a stand-down of the Soviet air force in the Far East. Such a move, Kissinger wrote, "is often a sign of possible attack; at minimum it is a brutal warning in an intensified war of nerves."[108]

In addition to the attempt to probe the American reaction, the Soviet Union, as CIA Director Richard Helms disclosed on August 27 at a background luncheon for a group of diplomatic correspondents, also sent to the leadership of Communist parties in Europe and Asia confidential letters that seemed to justify a possible Soviet need for a *preemptive* strike against threatening nuclear bases in China.[109] The Soviet officials also "began a campaign of informal comments along similar lines by Soviet diplomats (often KGB officers) to European and Asian diplomats."[110]

The latter actions were evidence of the political character of the campaign: it was widespread opinion in the Soviet Union that anything told to Soviet allies would be soon known to enemies. In August 1969 that was exactly what the Soviet leaders needed: the second message went to Peking through numerous channels and the less reliable the channel was from the point of view of keeping the information classified the better it met the Soviet political-military purposes. This political view contradicted military purposes: the opponent became informed about "plans" and had a good chance to make such a strike senseless by dispersing weapons and preparing troops for immediate response.

Subsequent events proved the correctness of the Soviet assessments concerning Chinese behavior. On September 6-10 A. Kosygin met with the Chinese Premier, Chou En-lai, in Hanoi during Ho Chi Minh's funeral and proposed once again to start negotiations. Chou En-lai did not have the authority to decide on that subject and asked Peking. The answer did not reach Hanoi until after Kosygin had left. But early the next day (i.e., two days before

September 13, which was indirectly mentioned in the June 13 statement as the last time for starting negotiations) the Soviet ambassador in China, Alexey Elizavetin, was urgently informed that Chou En-lai was ready to meet with Kosygin.[111]

The following was a great surprise for the Chinese (and was hardly understandable if the USSR really planned preventive actions against China): Kosygin, upon reaching Tashkent,[112] changed his itinerary and flew directly to Beijing.[113] In the Beijing airport Kosygin met on September 12 with Chou En-lai, who was extremely concerned by the possibility of a Soviet nuclear strike and Soviet aircraft flights near Northwest China.[114] This implied that the threat might indeed have influenced the Chinese to agree to negotiations.[115] Chou assured Kosygin that China had no hostile intentions toward the Soviet Union.[116]

Those oral assurances were not enough for the Soviet leaders, who needed a formal, official Chinese obligation not to cross borders.[117] On September 16 an article by Victor Louis appeared in the *Saturday Evening Post* in which the possibility of a nuclear strike against Chinese nuclear facilities was mentioned once again. It seemed that the Kremlin decided to utilize Chinese fears about a nuclear strike and exploit success. The attempt was successful and on September 18 Chou En-lai sent to Kosygin a confidential message proposing to assume a mutual obligation not to attack each other with armed forces, including the avoidance of nuclear strikes. Kosygin answered confidentially proposing to add an obligation to prevent entering each side's airspace. And on October 20 formal Sino-Soviet negotiations on border problems started in Peking.[118]

Thus the Soviet nuclear weapons in 1969 were used by politicians and successfully played a political role. The entire episode had a political character. It is possible to show the same for other cases. The more or less "hawkish" position of the military in this situation did not matter: the military's advice simply existed at a lower level than that where politicians acted and where decisions on employment of nuclear weapons were made. Moreover, the main concern of the military was, as discussed earlier, to carry out civil politicians' demands—not to propose their own views on possible variants of the resolution of political problems.

The Soviet command and control procedures helped to maintain the situation in which the unconditional fulfillment of the political leadership's will was assured regardless of the military's position toward the use of force. That was especially true for nuclear weapons, mainly because the civil politicians strove to guarantee for themselves the exceptional right of making decisions to use nuclear weapons.

Prevention of the Unauthorized Use of Nuclear Weapons

Characteristic traits of the Soviet command and control procedures for nuclear weapons were discussed in detail in Bruce Blair's *Logic of Accidental War*.[119] It seems unnecessary to repeat his excellent analysis here. Instead, I will discuss some points that were missed or slightly misinterpreted by Blair.[120]

Under the Soviet General Staff systems, field commanders and even service chiefs were common executors of orders and general plans emanating from the General Staff. [121] It is noteworthy that in the Soviet Union (and now in Russia) the office of the Minister of Defense is located in the General Staff complex on Arbatskaya Square—in contrast to the United States where the JCS offices are located inside the Defense Department building. That is why

Blair's statement that the CINC Strategic Rocket Forces (SRF) possess "authority over strategic units of the navy and air force"[122] seems to this author to be mistaken—unless certain events happen and the SRF commander's previously delegated authority comes into force. And it does not seem likely that "in an emergency, the SRF commander could have controlled the alerting and launch of Soviet SSBNs and long-range bombers"[123]—that is the exceptional prerogative of the state's political leadership, who use the General Staff as *the* instrument of implementation of its will and decisions.[124] In the case of nuclear weapons it is the General Staff that develops operational plans in accordance to political guidance from the civil leadership and puts them into action.[125]

Within the framework of such a system the exclusive right of the top leadership to authorize the use of force—particularly in the strategic nuclear forces—is strengthened by the selection of loyal people as the personnel of the General Staff and other bodies of central command of the armed forces. Among those bodies are the 12th Main Directorate of the Ministry of Defense (12 GUMO—military unit 31600), which assumes from the Ministry of Atomic Energy (MAE) responsibility for nuclear charges as soon as the MAE enterprise (Sverdlovsk-45 or Zlatoust-36) completes its final assembly. During the whole life cycle of the weaponry, from its development in the armed forces through its transfer to the dismantlement and utilization plant, 12th MD keeps a detailed record of its location and condition. Along with that the 12th MD carries out *all* activities related to the nuclear weapons of the Ground Forces and the Strategic Missile Forces.[126] In addition to the organizational measures there are technical measures that make it impossible, or at least extremely difficult, for the military to intervene in the decision-making process. First and foremost, these technical means are installed in the system of communications and combat control [the Russian acronym is "CCBY," an analogue of the English "C3"] of the armed forces in general and of the strategic nuclear forces in particular.

The C3 system of the Soviet Strategic Nuclear Forces (SNF) was designed in accordance with the chosen strategy of the SNF employment, i.e., launch-on-warning after receiving the signal from the early warning system. Evidence of that can be obtained from Soviet sources.[127]

The SNF as a part of the whole armed forces are controlled through the "Tzentr" ("Center") automatic C-cubed system, which contains numerical subsystems. (The "Center" automatic system provides the top leadership with an opportunity to exercise centralized control over the armed forces from the very top to the level of military districts.) Because of the orientation toward the "launch-on-warning" strategy, the "Center" cannot issue the signal on launch of the SNF unless the Early Warning system, which is one of its subsystems, de-blocks its executive circuits.

The Ballistic Missile Early Warning (EW) system deployed in the former Soviet Union consisted of space and land echelons for the detection of the missile launches. The space echelon was, and still is, comprised of the "Kosmos"-type satellites constellation which, once put into the high-ellipse orbit, is oriented toward detection of the missiles by engine bursts. The data received from the satellites is transmitted to the special detachment (The Main Command and Calculation Center, facility 413) of the Space Forces' Central Command Post (CCP) in the town of Golitsino-2 and processed there. Members of the facility's duty crew simultaneously monitor the situation with the help of video-control means to which the image of the controlled area of the earth's surface is transmitted from the satellite telescope.

The information transmitted from the satellite is processed by the highly productive "El'brus-2" computer complex, which locates the place of the launch (indicative of the

missile's type) and the parameters of the target's movement. The software used is designed in such a way that if a single missile launch is detected it will be classified as a "missile launch" whereas detection of two or more launches will cause the "missile attack" decision.

To remove the blocking of the SNF launch executive circuits, the "missile attack" signal issued by the space echelon should be confirmed by the land-base elements of the EW system. Its main element consists of the radars of two types—obsolete "Dnepr" PARs that are in process of being substituted by newer "Darial-UM," and "Volga" radars. The Ballistic Missile Early Warning System is integrated with the Radar Stations "Dunai-1" and "Dunai-2U," which are part of the Air Defense system. (The "Duga" OTH radars do not play an essential role in the EW system.) The radars should detect and track, in forty seconds or less, the ballistic targets identified by the satellites. After this time the place of launch of the detected missile should be confirmed and estimates on the time and place of awaited grounding of the warheads should be calculated based on the parameters of the flight. Only when the reliability of the information reaches the "six nines" degree (i.e. 99,9999 percent), does the EW system CCP issue a signal that goes to "consumers"—which, apart from the Command Centers of the Kinds and other facilities, includes the "Krokus" ("crocus") and "Kazbek" terminals. The same signal is used to de-block the executive circuits of the missiles' launch subsystem.

The "Crocus" system terminals are placed under the control of the Defense Minister, the Chief of the General Staff, and the Commanders in Chief of the Army. These terminals have a display that is turned on after receiving the "missile attack" signal and that shows the territory of the country indicating the estimated time and place where the missile warheads will hit their targets along with other necessary information. Using this information the supreme command of the armed forces can quickly monitor changes in the situation and on this basis can work out recommendations on the preferable options of using the available forces.

Up until the beginning of the 1980s the highest political authority commanded the SNF, in the case of nuclear attack against the USSR, from the CCP of the General Staff, situated on the second floor of the General Staff building on Arbatskaya Square[128] or from the underground alternative General Staff command post located near Chekhov 70 kilometers south of Moscow.[129] But in this state the SNF C3 system could not work in conditions of surprise attack because it permitted the Supreme Commander to command the SNF only if he came to the General Staff command post, which could hardly happen in such a case. That is why work was started in late 1970s to create an equivalent of the American "nuclear football."

In 1984 the "Kazbek" combat control system, which gives to the supreme commander the opportunity to issue the order of retaliatory strike from any location (not only from the General Staff Central Command Post), was introduced into service. The most widely-known part of the "Kazbek" system is its terminals—attachés widely known as "black cases." They contain the special low-power electronic devices that issue a cipher allowance signal, which de-blocks the combat management system of the SNF. This signal is retransmitted with a means of protected communication (which always accompanies the owner of the black case on trips) to the centers of special communication. They retransmit the command to the CCP of the General Staff; for this purpose each of the centers is connected with the CCP by two highly protected parallel cables.

The 9th Division of the General Staff of the armed forces is responsible for the functioning of the "Kazbek" system and for the securing of the SNF C-cubed system in crisis situations in case of massive nuclear strike. The experts from the 9th Division have some

reserve of "Kazbek" terminals and if necessary (if one of the "cases" went out of service) one of the reserve cases can be activated (that means that active launching codes and the "sign of the owner" are introduced into the memory).[130]

Two officers from the 9th Division of the General Staff in a rank not lower than lieutenant-colonel (called operators or "subscribers") and a liaison officer of the special technical-operative Directorate of the General Staff represent the so-called "nuclear guard" that serves at each terminal of the "Kazbek" system. The "nuclear guard" is permanently stationed near the owner of the terminal. At the dacha of the USSR president they were stationed in a separate building near the president's villa and had a direct communication line with him. When the owner of the terminal traveled by car the guards traveled in another car that was equipped with the special communication center of the "Kazbek" system. The airplanes that are used by the leader of the state[131] are also equipped by the communication centers for access to the "Center" combat command system.

Each "black case" is equipped with a special device for recognition of the individual "sign of the owner." This sign is in fact a ten-digit number that is known only to the owner of the terminal and is inputted into the terminal by a keyboard. Without the sign, even after receiving the signal from the EW system, the terminal will not be activated for transition of the de-blocking signal to the "Center" system. Unauthorized access to the "Kazbek" terminals is also prevented by the practice in which the operators—in the event of threat of seizure of the "case," where no command for disabling of the terminal by erasing the memory is received and where there is no opportunity for its evacuation—are instructed to destroy the terminal even at the price of their lives.

In normal situations the "Kazbek" communication terminals work continuously and have a direct access to the General Staff Central Command Post. They can be switched from the routine to crisis regime only if the "missile attack" signal is received. After receiving the warning signal, which goes to the "Kazbek" terminal automatically,[132] the president immediately connects with the military using the protected channel of the multiplex radiotelephone communication systems ("Kavkaz" and "Rosa") in order to discuss the situation. During such discussions military high command members inform him of their assessment of the situation, based on information from the "Krokus" system, and indicate preferable options for action. After that the decision about possible employment of the SNF is adopted by the president, who sends the permissive signal and then the "go-code"[133] (or merely the de-blocking signal for the "Center" system) from his "Kazbek" terminal.

Here is the important point, which I believe was misinterpreted by Blair. From the fact that the Soviet president, minister of defense, and chief of the General Staff all possessed "black cases," he concluded that "the permission command was intended to be formed jointly by the USSR president, minister of defense and chief of the general staff."[134] Such a procedure would undermine the principle that the decision to *permit* launch of the SNF is the *exceptional* right of the top political leader. In fact, after receiving the EW signal, the blocking of the "Center" system, as the former Chairman of the USSR Military-Industrial Commission Yuriy Maslyukov confirmed,[135] can be removed by the signal from one of the "Kazbek" terminals (i.e., the president's terminal [136])—it is not necessary for a correlated signal from all three (or two as it is currently in Russia).[137] In these conditions the minister of defense and the chief of the General Staff possessed the "Kazbek" terminals simply because they were the persons with previously delegated authority to launch the retaliatory strike in case of war if the president were dead or unable to issue the command.

In order to transmit the signal (the procedure is described in detail in *The Logic of Accidental War*), communication systems with numerous duplication channels are used—including surface and underground cables,[138] radio-communication lines, radio channels of all bands (from short waves to long waves), as well as space communication.

The status of the communication line between the CCP of the General Staff and "Kazbek" terminals is continuously monitored by special units of the General Staff. The process for receipt of the warning signal from the EW system is also monitored. The feedback between the CCP of the General Staff and "Kazbek" terminals prevents the illegitimate use of the latter. For example, the minister of defense cannot trespass his responsibilities and remove the blocking from the combat management system from his terminal if there is a confirmation at the CCP of the receipt of the EW signal at the president's terminal but without the president issuing the launching order.

However, if there is no confirmation about receipt of the EW signal by the president or the minister of defense, or if communications with them are disrupted, the CCP of the General Staff has the option to issue an order for a retaliatory strike through the channels of the "Center" system. Under such conditions the blocking of the automatic combat management system is removed with some delay after the "Materik" nationwide seismic nuclear-explosion monitoring system issues the information that enemy nuclear warheads have exploded on Russian territory, i.e., the war has already begun. (The same is the condition under which the previously delegated authorities of the "black cases" owners, other than the president, may act.) The authority to launch a retaliatory strike was pre-delegated to the General Staff central or alternative command post for such a case.

The possibility that these command posts could be destroyed was also considered. A long chain of successors has been established. The fourth level in this chain (after the president, other "Kazbek" owners, and the General Staff command posts) is the SRF, the main and the alternative command center, after which, in the order of the authority transition, there are the mobile Command Centers[139] and the Underground Center of "absolute security"—"Grot"—in the Chistop mountain in the Urals.[140] The condition for transferring the authority of launching the SNF to the lower command center is a signal of a "missile attack" from the EW system and a signal from the "Materik" system received at the time when the communication with the higher Command Centers is disrupted. In this case, after a certain predetermined period of time, during which attempts are made to restore the communication with the higher command centers, the authority of launching the SNF will pass to the lower command center.[141] As a reserve means the 1970s-vintage system for transmission of the de-blocking codes and cipher order on the variant of force implementation is still preserved. The procedure of this "manual" system is described in detail in *Logic of Accidental War*.

Conclusion: Civil-military Relations, the Use of Force, and the Current Situation in the Former USSR

Thus with the creation of nuclear weapons in the USSR, relations between civilian and military politicians in the country changed character. On the one hand, the mistrust of military people, mentioned above, was preserved. On the other hand, the civilian leaders were no longer independent from the military in the most sensitive aspect—the command over the nuclear arsenal. Allegedly, before Stalin's death, this problem was solved by

isolating "conventional" forces entirely from the implementation of nuclear policy—their participation in the use of nuclear weapons was simply ruled out. This was possible owing to the small size of the Soviet nuclear arsenal. But after Stalin's death a far more realistic choice was made: the degree of mistrust was lowered significantly, and the military began participating in the most important stages of the control over the nuclear weapons, including the most critical of all—the launch of the SNF. But still the top civil leaders of the USSR strived to control even the most reliable personnel who were allowed to operate nuclear weapons, with a wide range of organizational and technical measures.[142]

Thus, the structure of the Soviet C-cubed system (which was fully inherited by Russia) allows us to state that the nuclear arsenal, as well as the military power of the state in general, was viewed by the politicians as a predominantly political instrument, the control of which belongs exclusively to the political leadership of the country; and in the case of the Strategic Nuclear Forces the situation was even more specific—only the general secretary/president.[143] To guarantee this untouchable and exclusive right of the civil leaders a broad range of organizational and technical measures was created which, given the selected loyal military personnel, make it impossible for the military to exercise unauthorized actions and in practice limit their function to that of advisors who provide advice when asked for it and implementors—but not decision-makers. Such roles were assigned to the military not only with regard to nuclear weapons, but on all the key issues pertaining to the use of force.

The military, it seems, has reconciled itself to the limits of its role. This approach allowed the politicians to pay primary attention to the development of the military potential and its proper use, and the military, given its nonintervention in political affairs, was guaranteed full satisfaction of its needs—both corporative, and, to a large extent, personal.

But the beginning of democratic reforms in the Soviet Union and their continuation in Russia have led to a considerable decline in the attention paid by civil politicians to coercive methods in general and the military in particular. The new Soviet and Russian leaders, seeking to get rid of the legacy of the Cold War, and, quite frankly, to earn the goodwill of the West, have been unwilling to use force. Russia had to cope with the loss of the *aura* of power, which was capable, in some sense, of replacing power itself. This loss created a number of false evaluations as to the real capabilities of Russia, and led to a growing temptation by others to use the alleged weakness of the former giant to the detriment of Russian national interests.

As a result of that, the military faced numerous problems that could no longer be resolved within the usual framework of relationship with the civil leaders. Moreover, the latter rejected this relationship. In this situation one could expect involvement of the military in spheres that were not customary before—especially, in politics.[144] There are indeed examples of this.[145] Meanwhile, the classic justification for this kind of military intervention is that offered by a French colonel during the Algerian crisis: "If we...became interested in the political problems, it was not because of a taste for politicking, it was because of the demands of our professional duty."[146]

In other words, if the Russian civil leadership manages to get rid of the stereotypes that were inherited from the "Soviet past" with regard to the coercive methods, then, in the process of development of reforms in Russia, one can expect that the politicians will more often than in the past hear recommendations for a more active use of force from the military. Secondly, the objective of restoring the former reputation of a strong power requires active and decisive external policies. Formally speaking, such a change in the behavior of the military provides grounds for saying that they may become "hawks." However, this will not

mean a radical change in the character of relations between the civil and the military. In the author's opinion, with the activation of the military's participation in the political life of Russia, their transition to more "hawkish" positions will be limited, and this limitation will come from the military themselves.

The current generation of Russian political leaders climbed the political "Olympus" on the wave of constructive anti-Soviet activity, which had as one of its components anti-army activity. Therefore, the military who take this fact into account will most probably not seek open confrontation with the civil leaders (not only because of their "collective memory" about the events of the 1920s)—on the contrary, the corporative interests of the military will lead them to persuade the civil leaders of the necessity of having a sound institution of armed forces as a foundation for a new democratic Russia. Therefore, the military, particularly the military leadership, will refrain from any action that could serve as a basis for accusing the armed forces of anti-democratic aspirations. This is explained not only by the inclination of the military not to argue with the civilians (for the reasons that were mentioned before), but also by the armed forces' clear understanding that excessive activity of the army, including recommendations for the use of force, if not in line with the opinion of the civil politicians (or even a source of irritation for the latter), may well lead to a new wave of anti-army aspirations among the civil leaders who came to power on a similar wave.

Therefore, it is not out of respect to democratic values propagated by the civil leadership but rather from a clear recognition of the corporate interests of the military that the Russian army will refrain from any great broadening of its participation in the political sphere in the near future. At present the military find themselves, from the political point of view, in the conservative wing of Russia's "center," and resist any radical action originating from either radical democrats or nationalists. This is quite understandable, because in striving to preserve the army as a social institution in its present form for the foreseeable future, what the military needs first and foremost is stability. In other words, even if the military in Russia becomes a "hawk" in the Western sense of the term, this will not happen soon. For the near future, the pre-existing situation will be preserved in the Russian society—the one in which the civil-military relations of the military are at least no more "hawkish" than those of the civilians.

Notes

[1] Timothy J. Colton, *Commissars, Commanders and Civil Authority* (London: Russian Research Center Studies 79, 1979), p.281.

[2] Ibid, p. 281.

[3] The following statement by Lenin may serve as evidence: "Our party as any other political party strives for political dominance for itself." Lenin, "About the Compromises," *Selected Works* [*SW* henceforth], (Moscow: Publishing House of Political Literature, 1985, volume 7), p. 354).

[4] Lenin, "The Revolutionary Army and the Revolutionary Government," in *SW*, v. 4, p. 123.

[5] Although "Marxism does not rule out any forms of struggle," (V.I. Lenin, "Guerilla War," in *SW*, v. 4, p. 447) "a peaceful development of revolution is a very rare historical possibility" ("About the Compromises," in *SW*, v. 7, p.354).

[6] Lenin, "The Military Program of the Proletariat Revolution," in *SW*, v. 6, p. 507 (emphasis added).
[7] Ibid.
[8] Karl Marx and Frederick Engels, "The Manifesto of the Communist Party," in *Selected Works* (Moscow: The Publishing House of Political Literature, 1985), p. 142.
[9] Lenin, "The Guerilla War," in *SW*, v. 4, p. 453.
[10] Ibid.
[11] Lenin, "The Military Program of the Proletariat Revolution," in *SW* v. 6, p. 505.
[12] Lenin, "The Guerilla War," in *SW*, v. 4, p. 456.
[13] "It is not sufficient to have a group united under political slogans, it is also necessary to have it united under the slogan of armed rebellion. Those who are against it should be thrown out of the revolutionary movement." Lenin, "The Lessons of the Moscow Rebellion," in *SW*, v. 4, p. 54.
[14] This author does not have the intention of evaluating Lenin's purpose from ethical, political, or other points of view.
[15] See, for example, Lenin: "The Guerilla War," in *SW*, v. 4, p. 448.
[16] "In order for the upheaval to be successful it should be based not on a plot, not on a party, but on the leading class...The upheaval must occur during the critical period of impending revolution when the activity of the first ranks of the progressive masses is highest and when confusion is maximal in the ranks of the enemy and...among the indecisive supporters of revolution." (Lenin, "Marxism and the Rebellion," in *SW* v. 7, p. 409). "Any revolution is impossible without a revolutionary situation...but not every revolutionary situation leads to a revolution, it only happens when the objective causes are supplemented with the subjective causes, i.e., when the capability of the revolutionary class for executing a massive revolutionary upheaval, sufficiently strong to topple the old government, is present..." "The Collapse of the 2nd International," in *SW*, v. 6, pp. 223-224.
[17] "One should never play around with the rebellion, but once you have started it, you should be determined to go to the very end." (*SW* ,v. 7, p. 447).
[18] Lenin, "The Lessons of the Commune," in *SW*, v. 5, p. 56.
[19] Lenin and Zinoviev, "Socialism and War," in *SW*, v. 6, p. 270.
[20] General Gaston Alexander August Galliffet was one of the leaders of the suppression of the Paris Commune of 1871.
[21] Lenin, "The Military Program of the Socialist Revolution," in *SW*, v. 6, p. 506.
[22] Ibid.
[23] In the proclamation "The Socialist Homeland Is in Danger," Lenin states that after the victory of the revolution in October 1917 the party defined the war with Germany as that of "defense of the homeland," in SW, v. 8, pp. 63-64. In the article "A Hard but Necessary Lesson," which was written three days after the proclamation, Lenin defines the counterrevolutionary force quite clearly: "Now the giant of world imperialism has risen against us." *SW*, v. 8, p. 71.
[24] Lenin, "A Hard but Necessary Lesson," in *SW*, v. 8, p. 71.
[25] The Civil War in Russia lasted from 1918 to 1922, while in Central Asia the last counterrevolutionary formations—the basmachi—were eliminated only in 1943.
[26] Alexander Tsipko, "The Sources of Stalinism," *Nauka I Zhizn* 11, 1988 (pp.45-55); 12, 1988 (pp. 40-48); 1, 1989 (pp. 46-56); 2, 1989 (pp. 53-61).
[27] Colonel E. Klimchuk, *Sovetskii Voin* 7, 1990, p. 74.
[28] Eric Grove, *The Future of Sea Power* (London: Routledge, 1990), 168.
[29] Moskva, "Andreevskii Flag," 1992, pp. 2-15.
[30] Ibid., p.16.
[31] Ibid., p.17.
[32] The memoirs of Lieutenant-General Matvei Shaposhinikov, who in 1962 was the Deputy Commander of the North-Caucasus Military District—in Vladimir Fomin and Yuriy Schekochikhin, "Then in Novocherkassk" (*Literanturnaia Gazeta* #25 June 21 1989, p. 13).
[33] The memoirs of Colonel M. Derkachev, former special envoy officer of the Commander of the North Caucasus Military District—in N. Mel'nichuk "Novocherkassk 1962: Fictions and Truth" (*Sovetskii Voin* 13, 1990, pp. 70-71).

[34] Ibid
[35] This premonition sometimes reached the level of paranoia. Convincing evidence is the operation "Missile-Nuclear Attack" ("RYAN"—Raketno-Yadernoe Napadenie), which was carried out by the KGB starting in 1982 with the objective of detecting signs of impending nuclear attack on the USSR by the United States. The thesis that the United States had already decided to launch such an attack was never questioned. (Conversations of the author with Vasiliy Krivokhizha, a KGB member who supervised the "RYAN" program activity in Washington.)
[36] Lenin, "A Hard but Necessary Lesson," in *SW*, v. 8, p. 71.
[37] Conversations of the author with the Fleet Admiral (Ret.) Nikolay Amel'ko, former Commander in Chief of the Soviet Pacific Fleet and Deputy Chief of the General Staff.
[38] In 1990 the ratio of expenditures for arms purchases to that for their maintenance and technical support was 1.6/1 (R. Admiral R. Zubkov, "Which Structure of the Defense Budget Do We Need?" *Krasnaia Zvezda*, January 16, 1991, p. 2). In 1989 this ratio was 1.5/1, while in 1991 it was approximately 1.1/1 (Army General M.A. Moiseev, Chief of the General Staff, "Military Reform, Realities and Perspectives," *Krasnaia Zvezda*, June 12, 1991).
[39] Captain of the First Rank (Ret.) A. Zolotov, "Formula of Sufficiency," *Krasnaia Zvezda*, December 1, 1990, p. 2.
[40] This peculiarity of the psychology of Soviet officials was noted by the developers of the "Sea Plan 2000" and "Maritime Strategy" and was used in developing these strategic concepts of the U.S. Navy. (See, for example, Kenneth McGruther, USN, "Two Anchors in the Pacific: A Strategy Proposal for the U.S. Pacific Fleet," in *US Naval Institute Proceedings*, May 1979, pp.126-141 and especially pp.133-134.)
[41] *Commissars, Commanders and Civilian Authority*, p. 276
[42] Kicheil Kolesnikov, "Officer's Diary," *Ogonyok* 24, August 1992, pp. 20-24.
[43] Ibid., p.21.
[44] Ibid.
[45] Ibid., p.22.
[46] Colonel-General (Ret.) V.A. Merimskiy, "Kabul-Moscow: A War By Request," *Military-Historical Journal* 11, 1993, p. 31)
[47] See, for instance, the memoirs of Andrey Gromyko in the interview with Anatoliy Gromyko by Igor Belyaev, the commentator of the *Literaturnaya Gazeta* newspaper "How We Entered Afghanistan" in *Literaturnaya Gazeta* 38, 20 September, 1989, p. 14.
[48] "Kabul-Moscow: A War by Request," p. 31, 34.
[49] Ibid., p.31, 35.
[50] E..Lisov and V. Stepankov, *Kremlin Conspiracy* (Moscow: *Ogonyok* Publishers, 1992), 171-174.
[51] Among the reasons for a more restrained view on the use of force one could mention the fact that in Soviet society information about the condition of the armed forces was received by civilians (and advisors) from the military. At the same time, the military had every reason to submit information based on the principle of "the best way to please." As a result there often emerged a situation in which the military were aware but kept silent about serious defects in the combat capabilities of the Armed Forces that ruled out excessive determination in using force. The civilian advisors, on the other hand, because they were misinformed, turned out to be by far more decisive with regard to the perspectives of resolving the problems with the use of force.
[52] *Commissars, Commanders and Civilian Authority*, p. 47.
[53] The memoirs of Arpad Hentz, president of Hungary, in A. Kaverznev, "In 1956 Hungarians Fought for Us Too," *Komsomol'skaya pravda*, October 23, 1992, p. 3.
[54] Nikolay Lobodyuk, "Those who did not fire" in *Komsomol'skaya pravda*, November 9, 1991, p. 4.
[55] Nikolay Cherkashin, "The Last Parade. A Chronicle of the Anti-Brezhnev Mutiny," (Moscow: Andreevskiy Flag Publishers, 1992), p. 57.
[56] It is very difficult to evaluate these actions, because the duty of the officer nevertheless is to serve his country and obey orders.
[57] Roman Kolkowicz, *The Soviet Military and the Communist Party* (Princeton: Princeton University

Press, 1967), p. 2.
[58] V. Kulish's statement in A. Il'in, "The Patriotic War: Where We Stood in 1941," *Pravda*, October 6, 1989, p. 4..
[59] *Commissars, Commanders and Civilian Authority*, p. 226.
[60] *Izvestia TSEKA KPSS [The News of the Central Committee of the Communist Party of the Soviet Union]* 3, 1989.
[61] Colonel Klimchuk, *Sovetskii Voin* 7, 1990, p.77.
[62] Lt. Col. A. Dokuchaev, "To the North From Cape Svyatoy Nos," *Krasnaya zvezda*, June 30, 1990, p. 2.
[63] Ibid.
[64] This, by the way, is typical of Air Defense: in order to avoid problems, there were cases when no reports were made to the higher command about targets whose exact characteristics could not be determined. (Conversations of the author with Air Defense Troops officers Col. Pokidin, Lt. Col. Zelyoniy, etc. in the period between 1983 and 1986.)
[65] Colonel Klimchuk, *Sovetskii Voin* 7, 1990, p. 78.
[66] Lt. Col.A. Dokuchaev, "About Boeing, Cessna and Others," *Krasnaya zvezda*, March 13, 1991, p. 2.
[67] Author's conversation with R. Adm. (Ret.) Radiy Zubkov, former Chief Navigator of the Soviet Navy and Professor of the Military Academy of the General Staff.
[68] "Soviet military doctrine up until the spring of 1987 oriented troops toward preparation for predominantly offensive operations in case the war was provoked by an aggressor." (Marshal Yazov, USSR Minister of Defense), "The High Turning Point of History" in *Krasnaia Zvezda*, November 29, 1990, p. 2. See also *Strategy of Nuclear War*, Marshal Malinovskii, ed., Second Edition (Moscow, Voenizdat, 1962, p. 271).
[69] Colonel-General Igor Rodionov, Chief of the Military Academy of the General Staff, "Military Science: To Serve But Not To Be Subservient," *Krasnaia Zvezda*, December 2, 1992, p. 2.
[70] Ibid. It is important to note here that not only the use of nuclear weapons, but also related offensive actions, were to begin only in response to an attack on the Soviet Union. (*Voroshilov Lectures*, vol.1, pp. 14, p. 249).
[71] Ibid.
[72] Colonel-General Igor Rodionov, Chief of the Military Academy of the General Staff, "Military Science: To Serve But Not To Be Subservient," Krasnaia Zvezda, December 2, 1992, p. 2.
[73] Lecture by Major-General (Ret.) Valentin Larionov delivered on May 15, 1989 at the high courses on national security, arms control, and disarmament at the Institute of the USA and Canada Studies, USSR Academy of Sciences. See also V. Larionov, "Atomic Weapons and Policy 46 Years After Hiroshima," *Nezavisimaya gazeta*, August 6, 1991, p. 5. Maj.-Gen. Larionov was among the authors of *The Soviet Military Strategy* .
[74] Raymond Garthoff, *Deterrence and the Revolution in Soviet Military Doctrine* (Washington, D.C.: The Brookings Institution Press, 1990), 16.
[75] Ibid.
[76] David Holloway, *The Soviet Union and the Arms Race* (New Haven and London: Yale University Press, 1983), 33.
[77] Mikhail Rebrov, "Bombs of Three Generations," *Krasnaya zvezda*, October 27, 1992, p. 2.
[78] "The Evolution of Nuclear Strategy," p. 58.
[79] Ibid., p. 61.
[80] Yuliy Khariton, "The USSR's Nuclear Weapons: Come from America or Developed Independently?" in *Izvestiya*, December 8, 1992, p. 3.
[81] "How We Kept Finger on the Red Button. Unknown Pages of the History of the 1968 Soviet-Chinese Crisis" Publication prepared by S. Soncharov and V. Usov, *Komsomol'skaia Pravda*, February 15, 1992, p. 5.
[82] *The Great Soviet Encyclopedia*, vol. 16, p. 509 (1614).
[83] "How We Kept Finger on the Red Button"

[84] Ibid.
[85] Ibid.
[86] Ibid.
[87] S. Avdeev, "Forgotten Island," *Komsomol'skaya pravda* December 19, 1989, p. 3.
[88] Ibid.
[89] Raymond Garthoff, *Detente and Confrontation: American-Soviet Relations from Nixon to Reagan* (Washington, D.C.: The Brookings Institution Press, 1985), 212.
[90] "Detente and Confrontation," p. 205.
[91] Ibid.
[92] *The Foreign Policy of the Soviet Union and International Relations: collection of documents.* 1969 (Moscow: *Mezhdunarodnie otnosheniya* Publishers, 1970), p. 72.
[93] Henry A. Kissinger, *The White House Years* (London: Weideneld and Nicolson and Michael Joseph, 1979), pp. 174-175.
[94] *Detente and Confrontation*, p. 205.
[95] *The White House Years*, pp.174-175.
[96] "How We Kept Finger on the Red Button"
[97] Ibid.
[98] *Detente and Confrontation*, p. 206.
[99] Ibid.
[100] *Detente and Confrontation*, p. 206.
[101] Ibid. Kissinger refers to that case as the Yu-Min case.
[102] *Commissars, Commanders and Civilian Authority*, p. 280.
[103] Ibid. (emphasis added)
[104] "How We Kept Finger on the Red Button"
[105] Ibid.
[106] *Detente and Confrontation*, p. 209.
[107] *The White House Years*, p. 183.
[108] Ibid.
[109] Ibid., p.184.
[110] *Detente and Confrontation*, p. 208.
[111] "How We Kept Finger on Red Button"
[112] Not Dushanbe as is usually given in Western sources.
[113] "How We Kept Finger on Red Button"
[114] Ibid.
[115] *Detente and Confrontation*, p. 211.
[116] "How We Kept Finger on Red Button"
[117] Ibid.
[118] Ibid.
[119] Bruce Blair, *Logic of Accidental War* (Washington, D.C.: Brookings Institution Press, 1993), Chapter Four, pp. 59-114.
[120] With the exception of specific references, the facts used are from Igor Sutyagin, "Problems of Safety and Security of Russian Nuclear Weapons," (POSTFACTUM News Agency *Voenniy vestnik* 7, 1993 [Russian edition]).
[121] *Voroshilov Lectures*, vol. 2, pp. 33-4.
[122] *Logic of Accidental War*, p. 65.
[123] Ibid.
[124] The sources available in the West support this conclusion. See, for instance, *Voroshilov Lectures*, vol. 1, pp.13, 246.
[125] *Voroshilov Lectures*, vol. 2, p. 33.
[126] The nuclear weapons of the Air Force and of the Navy are placed under the command of the 6th sector of the General Staffs of the Air Force and the Navy respectively. These sectors receive nuclear ammunition from the 12th Main Directorate and interact with it on a permanent basis.

[127] See, for instance, Colonel A. Belousov, "Missile Garrison," *Krasnaya zvezda*, November 19, 1989, p. 2.
[128] Nikolay Poroskov, "Cooperation of Staffs of All Levels Checked in Russian Armed Forces," *Krasnaya zvezda*, November 9, 1993, p. 1.
[129] The "Tzentr" system installed at this Command Center is mistakenly considered by Blair to be an element of a system designed to automatically, without any human intervention, launch the Soviet/Russian SNF in the event of a nuclear attack.
[130] This also means that the 9th sector retains the codes used in the "Center" system for launching the Strategic Nuclear Forces. The necessary separation of authority is insured by keeping the codes in the 9th sector, while the launch commands are transmitted by another sector of the General Staff—the Central Command Unit.
[131] Two airplanes each of the IL-62, TU-154, TU-134 and YAK-40 types and Mi-8S helicopters, all of which belong to the Special Purpose Detachment of the 269th Transport Air Regiment.
[132] Blair is wrong when he writes that it is the defense minister and the chief of the General Staff who inform the secretary general/president about attack (Logic of Accidental War, p.73). It is inconceivable that the Soviet leaders who have rigid control over the actions of the military would leave it up to the military to decide whether or not to inform the Head of State about the nuclear attack, even in a theoretical sense. Here Blair contradicts himself: "the Soviet high command [and the Secretary General/President is in fact the Supreme Commander] placed the levers of an elaborative intelligence apparatus at its fingertips." (Ibid, p. 62).
[133] V. Zozulia, "The Latest Fashion in Briefcases," *Komsomol'skaya pravda*, January 25, 1992, p. 3.
[134] *Logic of Accidental War*, p. 72.
[135] E. Lisov and V. Stepankov, *Kremlin Conspiracy* (Moscow: *Ogonyok* Publishers, 1992), 143.
[136] Ibid, p.140.
[137] Therefore Blair's description of the procedure of transmitting the command in the "Kazbek" system is incorrect.
[138] Underground high-security cables connect the key command centers with all the ICBM silos—not only with those located on the European part of the territory of the former USSR, as Blain writes (*Logic of Accidental War*, p. 79).
[139] There are three types of national mobile command centers: the air center ("Zveno"), the automobile, and the railway centers. The order of authority transfer between these three Command Centers is not clear.
[140] Thus, the article by *The New York Times* about the existence of this Command Center does not correspond to reality. (See Viktor Litovkin, "What Are They Digging For In the Urals?" *Izvestia*, December 1, 1992, p. 1.)
[141] All this provides grounds for disagreement with Blair's statement that "control [of Soviet SNF—I.S.] was far less dispersed than it was in the U.S. system." (*Logic of Accidental War*, pp. 112-2).
[142] For instance, the "Center" system allows the top leadership to interfere in the actions of inferior executive branches (including the launch units of ICBM) and stop them if such actions are considered to be unauthorized (*Logic of Accidental War*, p. 67). In the Air Force there is a "Rebus" system, which allows the loading of the aviation nuclear charges and authorizes the launch of nuclear-tipped "air-to-ground" missiles in a remote mode. (Lt. General S. Val'chenks, "Revival," *Aviation and Auto Space* 3, 1992, p. 4.)

Moreover, the long-range Cruise Missiles (ALCM), before their launch, request permission from the on-board navigation system of the carrier plane so that the launch command given by the crew is only carried out if given at a time when the plane reaches the initially programmed launching point. In other words, ALCMs are integrated into the on-board equipment of the carrier plane and can only be used from a type of plane for which they are designed. This is evident given the fact that the TU-160 "Blackjack" bombers and TU-95M9 "Bear-H" bombers are equipped with different modifications of ALCM Kh-55 (AS-15)—RKV-500B and RKV-500A. (See the START Treaty.)
[143] That is why Blair's statement on the existence of the "Doomsday machine" in the structure of the Soviet SNF C3 system (*New York Times*) is in my view unrealistic: such a device would be beyond the

politicians' control, it would undermine their exclusive right to make decisions with regard to the nuclear weapons, and it would rule out the possibility of correcting the mistakes. However, Blair emphasizes in his *Logic of Accidental War* the great importance which is attributed to these three items in building the Soviet C-cubed style logic.

[144] Colton predicted that in 1979. He wrote: "Military involvement, beginning with the broadening of the scope of political participation, would clearly be a strong possibility in the event of drastic disintegration of the political system." (*Commissars, Commanders and Civil Authority*, p. 286).

[145] When Moscow failed to work out a guideline with regard to the ethnic problem in the Moldavian Transdniestria, the Commander of the 14th Russian Army in Moldova, Major-General Lebed' of Airborne Troops, effectively assumed the responsibility of defining and implementing the Russian policy in that region. It should be noted that in combining the available methods of "people's diplomacy" and introducing a state of emergency, the General accomplished much more than the civil diplomats from the Smolenskaia square: the war in Transdniestria was stopped, and military security of the region did not suffer.

On June 4, 1990 when a real danger emerged that the Uzbek militants would try to break into the Russian garrisons in the Fergana valley, where representatives of the local ethnic minority—the Meskhetian Turks—found refuge, and commit atrocities. Colonel Alexander Sulyuyanov of Airborne Troops, the commander of the Russian garrison in Fergana, requested instructions from Moscow. But the situation was worsening and there was no answer from Moscow. Then Colonel Solyuyanov gave orders to distribute combat bullets to his soldiers, and he notified the militants that the soldiers were ordered to shoot to kill if the militants tried to injure the Meskhetian Turks in the Russian garrisons. Carey Schofield, *Inside the Soviet Military* (New York, London, Paris: Abbeville Press Publishers, 1991), 195. The security of the densely populated area was insured owing to the actions of the Colonel, who effectively intervened in the Russian-Uzbek relations and prevented a massacre—while the civil politicians failed to find a way out of the situation.

[146] *Commissars, Commanders and Civil Authority*, p. 226.

Fateful Choices: Nuclear Weapons, Ukrainian Security, and International Stability

Steven E. Miller
Center for Science and International Affairs, Kennedy School of Government, Harvard University, Cambridge, Massachusetts

Should Ukraine become a nuclear power? This is not a simple question to answer because there are serious arguments on both sides of the question. The case for Ukrainian acquisition of nuclear weapons rests fundamentally on two key arguments:

- Ukrainian nuclear weapons will promote peace and stability in a region that might otherwise be prone to conflict.

- Nuclear weapons will enhance Ukrainian security, providing an ultimate security guarantee for a state that would otherwise fear that its sovereignty might be jeopardized by its enormous and potentially menacing neighbor to the east.

These are not trivial or easily dismissable arguments. They suggest that Ukrainian acquisition of nuclear weapons would produce desirable and beneficial security consequences for both Ukraine and the West.[1] At first glance, they appear to provide a convincing rationale for Ukrainian nuclear weapons.

This essay will argue, nevertheless, that Ukraine should not become a nuclear power, that its own interests and those of the West will best be served if Kiev fulfills its oft-made pledges to join the Non-Proliferation Treaty as a non-nuclear weapon state. The argument to be advanced here is not that nuclear weapons do not provide security benefits. Rather, I will suggest that the benefits provided by nuclear weapons are less certain and more conditional than proponents of nuclear spread believe; and that when the costs and complications associated with nuclear acquisition are taken into account, the case for Ukrainian nuclear weapons is not compelling.

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Do Nuclear Weapons Always Promote Peace and Stability?

Emphasis on the peace-causing effects of nuclear weapons is central to the case for nuclear proliferation. As Kenneth Waltz puts it in the most famous advocacy of proliferation, nuclear spread "will promote peace and reinforce international stability."[2] This conclusion is partly deductive and partly empirical. Deductively, it is argued that because nuclear weapons greatly increase the costs and risks of war, they substantially reduce the likelihood of miscalculation and induce caution in the behavior of states; wars between nuclear-armed states become simply too dangerous to fight.

The force of this argument is greatly strengthened because it appears to be confirmed empirically by the experience of the Cold War, in which the two bitterly opposed protagonists avoided war for nearly half a century despite numerous crises and provocations. Some would argue further that nuclear weapons have also had pacifying effects in regional settings. Martin van Creveld, for example, asserts that "To date, in every region where these [nuclear] weapons have been introduced, large-scale interstate warfare has disappeared...The effect of proliferation has been greater rather than lesser stability in the relations of states that have them or are confronted with them."[3]

If nuclear weapons reliably cause peace, then nuclear spread to Ukraine—or any other state, for that matter—is not merely acceptable, but desirable, stabilizing a situation that might otherwise be prone to conflict. Thus, for example, Barry Posen argues that even the mere presence of nuclear weapons on Ukrainian soil, although under the operational control of Russia, has *already* had the effect of stabilizing Ukrainian-Russian relations by making violent clash between them too dangerous.[4] But there are a number of reasons to question whether nuclear weapons will promote peace and stability in all conditions and circumstances and whether they will have the desired effects in the particular case of Ukraine.

Uncertainty about the consequences of nuclear weapons

The Cold War, John Lewis Gaddis has written, was in fact "The Long Peace"; for all the tensions and crises of the postwar era, war between the United States and the Soviet Union was avoided. It is widely believed that nuclear weapons contributed substantially to this outcome—a view that I share. But does the Cold War record demonstrate definitively that nuclear weapons alone reliably cause peace? A careful examination of explanations of the long peace suggests not.

This is true because accounts of the long peace usually focus on a number of explanations, not simply or solely on the peace-causing effects of nuclear weapons. Waltz, for example, identifies nuclear weapons as one of two very powerful forces "working for peace" in the post-World War II world, the other being bipolarity; in discussing the effects of nuclear weapons, he sometimes conflates the two, writing of "nuclear-bipolar worlds."[5] Indeed, elsewhere in his work, Waltz has suggested that bipolarity alone constitutes a powerful cause of the stability of the Cold War world; insofar as this is true, nuclear weapons are not necessary to explain the long peace.[6] Further, Waltz has considered the possibility that the spread of nuclear weapons itself might undermine bipolarity, but concludes that because the barriers to great power status are so high, "We need not fear that the spread of nuclear weapons will turn the world into a multipolar one."[7] This is a very interesting conclusion in the present context, because if nuclear weapons could be counted on to keep the peace, there would be no reason to fear a return to multipolarity.[8] That Waltz would even feel a need to address this question suggests the importance he attaches to

bipolarity as a cause of Cold War peace—in fact, it implies that bipolarity is more important than nuclear weapons as a causal force.[9] In short, Waltz's argument does not rest solely on the unambiguously demonstrated peace-causing effects of nuclear weapons.

Similarly, John Mearsheimer suggests that the long peace is explained by bipolarity, the rough equality of military power between the two protagonists in the Cold War, and the presence of nuclear weapons. As Mearsheimer himself points out, "The relative importance of these three factors cannot be stated precisely..."[10] Like Waltz, Mearsheimer attaches considerable importance to the existence of bipolarity, arguing strongly that "A bipolar system is more peaceful..."[11] Again, it is necessary to ask: If the Cold War peace can be explained by bipolarity, how can one draw confident conclusions about the consequences of nuclear weapons from Cold War history? Mearsheimer concludes, for example, that "When an equal bipolarity arose and nuclear weapons appeared, peace broke out. This correlation suggests that the bipolarity theory, the equality theory, and the nuclear theory of the long peace are *all valid.*"[12] This conclusion is, of course, flawed: one of the theories may be correct and the other two insignificant; or all three may be necessary to produce the observed effect, in which case none of the theories is independently valid; or two of the three may be necessary to cause peace and the third is irrelevant. One cannot conclude, on the basis of a multicausal analysis, that nuclear weapons were the decisive factor in keeping the Cold War peace.

And in the most extensive analysis of the long peace, John Lewis Gaddis identifies no fewer than seven factors contributing to the stability of the Cold War system. These include bipolarity—a factor that is nearly ubiquitous in such analyses; the "remarkable" independence (not interdependence) of the United States and the Soviet Union from each other, economically and geographically; the existence of domestic structures on both sides that, whatever their other merits or faults, did not undermine international peace and stability; nuclear weapons; the exploitation by both sides of advanced reconnaissance technologies that increased transparency and reduced the risk and fear of surprise attack; the ideological moderation of the Cold War protagonists in preferring international order to ideological purity; and the evolution of an implicit set of rules for the "superpower game."[13]

It is difficult to know how much causal power to attribute to nuclear weapons when other powerful factors were working in the same direction.[14] It is arguable that nuclear weapons have been a major, or even the dominant, contributor to superpower peace during the Cold War. But given the existence of other powerful causes of this outcome, it is also plausible that nuclear weapons have not been a significant factor in determining the course of the postwar era.[15] Hence, the proposition that nuclear weapons promote peace and stability is properly regarded not as a fact, but as an interpretation (largely based on the evidence of a single case).[16] This uncertainty should be acknowledged when evaluating fateful policy recommendations.

The consequences of nuclear weapons may be conditional

Explanations of the long peace indicate that insofar as nuclear weapons have caused peace, they have done so in the context of a distinctive set of conditions. But virtually none of the conditions offered by the above analyses now exist in relation to Ukrainian nuclear weapons. A Russian-Ukrainian nuclear relationship will not exist in a bipolar international system, since that disappeared with the demise of the Soviet Union. It is hard to see how Ukraine will, over the long run, maintain a rough equivalence in military power with a Russia that has three times the population and many times the geographical expanse and exploitable

resources of Ukraine. Far from being geographically distant and highly independent, Ukraine and Russia are neighboring states with borders still described by some in Moscow as merely "administrative"; and they are deeply interdependent, economically and culturally. Because both Ukraine and Russia are in the throes of internal transformation, it is uncertain whether the domestic structures that emerge will be conducive to peace, nor can we be confident that ideological moderation will prevail in both capitals. It will be many years, if ever, before Ukraine possesses the independent reconnaissance capabilities necessary to provide reassuring levels of transparency. And while rules of the game for Russian-Ukrainian relations may eventually evolve, they do not now exist. Thus, most of the factors "working for peace" in Soviet-American relations are absent from the Russian-Ukrainian context.

It is possible, of course, that some different set of peace-causing conditions might exist in the Russian-Ukrainian context that would reinforce the beneficial effects of nuclear weapons in their bilateral relationship and vitiate the force of the argument developed here.[17] Posen, for example, argues that a number of such factors exist in Russian-Ukrainian relations, including cultural affinities, extensive historical entanglements, and the absence of a pattern of ethnic intolerance and bloodshed between them; hence, Posen concludes, "The history of relations between Russians and Ukrainians is thus conducive to peace."[18]

Other interpretations, however, are considerably less optimistic, emphasizing not cultural commonalities but Ukrainian pride in their distinctive national language and religion, not shared historical experiences but deeply divergent and contrary historical memories, not mutual tolerance but centuries of ruinous subjugation of Kiev by Moscow. Thus, Alexander Motyl writes that "Ukraine has traditionally defined itself with reference to, and against, Russia: Ukraine is that which Russia is not...Different national mythologies have resulted in radically different interpretations of common historical experiences. Ukrainians and Russians have constructed virtually incompatible accounts of their past." Far from having a high level of mutual comprehension, according to Motyl, Ukraine and Russia have a marked inability to see one another clearly or objectively: "Different discourses, different myths, different historical interpretations and different national interests have produced a virtual breakdown in communication..."[19] And while it is historically true, as Posen intimates, that some Ukrainians comfortably tolerated or even embraced Russian rule and culture, it is also true that important strands of Ukrainian nationalist sentiment are virulently anti-Russian and bitterly resent what are seen as Russia's historical crimes against Ukraine.[20]

Similarly, some Western scholars have argued that economic interdependence is a cause of peace. Insofar as this hypothesis is true, it ought to apply very powerfully in the case of Ukraine and Russia, who are deeply interdependent economically. However, in some notable historical cases, interdependence has not prevented the outbreak of war. And in reality, the fact of interdependence between Russia and Ukraine has itself been a source of substantial friction between them.

In short, it does not seem to be convincingly the case that there is a distinctive set of factors working for peace in Russian-Ukrainian relations, factors which reinforce or guarantee the beneficial consequences of nuclear weapons. Furthermore, it also seems possible that there exist potential sources of conflict in Russian-Ukrainian relations that did not exist in the U.S.-Soviet context. These states share an uncertain border, have a significant territorial dispute, have major disagreements about the division of assets of the former Soviet Union, and confront a potentially difficult ethnic situation; the friction between Ukraine and Russia involves not remote clashes on the periphery of respective zones of influence but the

homelands and ethnic brethren of the two states.[21] It is at least arguable that the Russian-Ukrainian rivalry is more rather than less conflict-prone than was the Cold War.

Thus, extrapolations from the Soviet-American relationship during the Cold War may be misleading and dangerous guides to the future. That nuclear weapons contributed to peace during the Cold War is no guarantee that they will have the same effect in dramatically different settings and conditions.

What if leaders don't behave "appropriately"?

Advocates of nuclear proliferation argue, however, that the logic of the nuclear-peace paradigm is so powerful that it applies across a wide range of domestic, regional, and international conditions. The primary reason, as noted above, is that nuclear weapons are so clearly and unquestionably destructive that even a small risk that they might be used is enough to stay the hand of decisionmakers contemplating war. This fact, the nuclear theorists argue, constitutes a defensive revolution in international politics: nuclear weapons make it easy for states to ensure their security. Hence, nuclear-armed states "should" be confident of their security, prudent in their international behavior, and insensitive to the military posture and policies of their adversaries, as well as avoid arms races, downgrade the importance of conventional forces, and spend less on defense.[22]

This is impeccable logic. Unfortunately, the behavior of nuclear-armed states has failed to conform to these predictions in a number of respects. The United States and the Soviet Union, for example, seemed to feel remarkably insecure during the Cold War, given their size, power, and nuclear status. Apart from avoiding war with one another, their behavior was not invariably prudent, as evidenced by a series of dangerous Cold War confrontations. They proved not insensitive to, but obsessed with, the military preparations of the other side, worried chronically about the state of the conventional balance and, by the standards of modern history, spent unusually large shares of their national treasure on defense.

Part of the explanation for this discrepancy between theory and reality is that the perception of the meaning of nuclear weapons described above is not universally held. No one even slightly acquainted with the U.S. nuclear debate, for example, can be unfamiliar with the strong influence in U.S. policy of so-called "conventional" thinking about nuclear weapons, which rejects the premise that they constitute a profound defensive revolution and proceeds instead on the premise that they should be treated as if they were conventional weapons.[23] This matters because, as Waltz himself points out, predictions about the effects of nuclear weapons depend not simply on the characteristics of the weapons themselves, but also on "an appropriate doctrine for their use."[24] But such evidence as we have indicates that states cannot be counted on to adopt the "appropriate" doctrine. Quite the contrary, throughout the Cold War the Soviet Union and the United States opted for precisely the counterforce warfighting nuclear doctrines that the Waltzian analysis would regard as inappropriate.[25]

One of the peculiarities of Waltz's position is that he understands this point full well (and clearly finds it frustrating), but somehow this does not shake his belief in the stabilizing effects of nuclear spread. Writing primarily about *the American debate*, he notes that "nearly half a century after Hiroshima, scholars and policymakers have yet to grasp the full strategic implications of nuclear weaponry," and he decries "decades of fuzzy thinking in high places about what deterrence is, how it works, and what it can and cannot do..."[26] Deterrence, Waltz urges, "is easier to contrive than *most strategists* have believed," but only "A *minority* of US military analysts have understood the folly of maintaining more nuclear

weapons than deterrence requires."[27] And, in a remarkable passage that reveals clearly Waltz's appreciation of the fact that his beliefs about the nuclear revolution did not govern U.S. and Soviet nuclear policy even fifty years into the nuclear age, he writes "*If leaders in both countries come to accept the minority view*—and also realize that a deterrent force greatly reduces conventional requirements on central fronts—both countries can enjoy security at much lower cost."[28]

The decisively important point here is that perceptions and beliefs about nuclear weapons—even beliefs regarded by some theorists as unwise, incorrect, or foolish—can influence the impact of nuclear weapons on the behavior of states and military organizations. Note, for example, Waltz's explanation for why the US and the USSR had engaged in a nuclear arms race even though in theory this was not necessary: "Strategic arms races between the United States and the Soviet Union...are produced mainly by the strategies they follow and by the kinds of forces they build."[29] In other words, because the Cold War superpowers chose nuclear doctrines different from that preferred by Waltz, their behavior was different from that which Waltz predicts. Moreover, as Robert Jervis points out, in the nuclear realm beliefs are not tightly anchored to reality because there is little or no evidence about nuclear war and nuclear escalation. "On such matters as whether nuclear war can be kept limited, whether a threat is credible, and how many weapons are enough to enable a state to stand firm, there is no reality to be described that is independent of people's beliefs about it...Beliefs also influence the crucial question of the impact of the nuclear balance on political outcomes."[30] If beliefs and perceptions influence the impact of nuclear weapons on national behavior and international politics, if leaders and strategists commonly harbor beliefs that diverge significantly from those of Waltz and other theorists of the nuclear revolution, and if those beliefs have led nuclear-armed states to behave in a number of respects differently than predicted by theorists of the nuclear revolution, then the pacifying effects of nuclear weapons should not be assumed to be so certain and so universal.

In short, the critical judgement for policy and policymakers is not simply what the theoretical effects of nuclear proliferation *should be*, given the powerful deductive logic of Waltz's argument. Rather, they must judge what the consequences of proliferation *might be* if the strategic implications of nuclear weapons remain "ungrasped," if there are "decades of fuzzy thinking in high places," if the majority fails to understand the "folly" of its way of thinking about nuclear weapons. If nuclear theorists of an "appropriate" persuasion ran the world, we could be assured of the benign and beneficial effects of nuclear weapons. As Waltz himself emphatically notes, however, the actual perceptions and behavior of policymakers in nuclear-armed states are much less reassuring.

The possibility of conflict and the risk of inadvertent escalation remain

It is rarely argued that nuclear weapons will magically solve the problem of conflict in its entirety. While all-out or high-stakes wars may become too dangerous to fight, there is still room for lesser challenges at lower levels of conflict. If the nuclear balance is believed to be highly stable, then decisionmakers may calculate that they can fight even substantial conventional wars with little risk of escalation, since all parties possess enormous incentives not to use nuclear weapons.[31] Moreover, nuclear deterrent threats will not be equally effective in all circumstances; Waltz, for example, comments that "Where territorial claims are shadowy and disputed, deterrent writs do not run"—a point which may be all too relevant to Russian-Ukrainian relations.[32] Conventional conflict cannot be ruled out.

But conventional conflict in a nuclear environment raises the risk not only of intentional nuclear escalation, which leaders will have incentives to avoid, but also of inadvertent nuclear escalation, which leaders may not be able to avoid even if they want to; this is true because conventional military operations can jeopardize nuclear deterrent capabilities directly or degrade capabilities (warning systems, for example) that greatly increase the possibility of successful nuclear preemption. The most extensive analysis of this question concludes that the problem of inadvertent escalation will "loom especially large for small and medium-sized nuclear powers, since they will have the most difficult time building nuclear forces that can survive," and suggests that in this context the problem of inadvertent escalation assumes "an even more frightening guise" than was the case in the Soviet-American relationship.[33] As we shall see below, this point clearly applies to Ukraine.

Indeed, in one important respect, Ukraine may, at least for some time to come, raise the inadvertent escalation problem in acute form. Posen notes that in the context of the NATO-Warsaw Pact rivalry, the aerial campaign associated with any conventional war might have degraded Soviet air defenses and command and control in ways that would have jeopardized Soviet nuclear assets. This, in turn, might have produced strong although undesired escalatory pressures.[34] In the case of Ukraine, however, its conventional air defenses against aerial attack from the east barely exist and, insofar as they exist, are exceptionally vulnerable to attack.[35] Ukraine's air defenses are, in a sense, "pre-degraded". Hence, the kinds of escalatory pressures that Posen identified as possibly arising out of weeks of conventional conflict in the NATO-Warsaw Pact setting might arise for Ukraine very early, if not immediately, in any Russian-Ukrainian conventional conflict.

Proliferation may cause further proliferation

One consequence of nuclear proliferation may be further nuclear proliferation.[36] At a minimum, it will certainly be the case that the acquisition of nuclear weapons by any one state will affect the debate within, and the security calculations of, neighboring states; it is hard to imagine that neighboring states who feel potentially threatened by the nuclear acquisition will not at least think about acquiring nuclear weapons themselves. And while further nuclear proliferation is not the inevitable result of such debates, it is certainly plausible that some of these states will decide that a nuclear arsenal has become necessary. In fact, the empirical record suggests quite strongly that nuclear possession by one state is often the cause of nuclear acquisition by others.[37]

Consequently, in assessing the implications of nuclear proliferation in Ukraine, it is necessary to consider what further proliferation might occur if it exercises the nuclear option; an analysis that proposes Ukraine as a nuclear power but looks no further may be misleadingly incomplete.[38] Ukrainian nuclear weapons could have wider proliferation effects in three contexts. First, it could open the floodgates of proliferation within the former USSR. So far, the widely (although not universally) prevailing expectation has been that Russia would eventually emerge as the only nuclear successor state of the former Soviet Union. A nuclear Ukraine would shatter that expectation and other states of the former Soviet Union might then begin to take more seriously their own potential motivations for acquiring nuclear weapons; after all, if, as Mearsheimer argues, a large and potentially powerful state like Ukraine needs nuclear weapons to ensure its security against the potential threat of an enormous Russian state, how much more true will this be for smaller, even tiny, states such as the Baltics or Georgia?[39]

Second, a number of Ukraine's neighbors or near-neighbors could be provoked by the example, or the threat, of Kiev's nuclear capability to consider acquiring nuclear weapons themselves. The roster of potential candidates could include Germany, Poland, and Turkey, all large and important regional actors; it is not hard to envision them asking: if Ukraine can join the nuclear club, why can't, why shouldn't we? And should states like Germany or Poland come not only to covet equal nuclear status, but also to fear the potential nuclear threat from Ukraine, this could make nuclear acquisition appear necessary as well as desirable.[40]

Third, Ukrainian nuclear weapons could contribute to the erosion of the NPT regime, and thereby promote further proliferation at the global level. The factor may be especially salient in the coming several years, since the NPT is up for renewal in 1995, and the prospects for preserving the regime are likely to be damaged if nuclear spread appears to be increasingly common.

It is much easier to argue the case for a tidy world in which only Ukraine acquires nuclear weapons (and, of course, only in a safe and stabilizing way) and the rest of the world cooperates by remaining non-nuclear. But reality may be uncooperative and the result may be untidy, in which case the risks and dangers associated with nuclear proliferation are replicated across a number of additional proliferators.

These five points considered so far—uncertainty about the effects of nuclear weapons, the possible conditionality of nuclear effects, the possibility that decisionmakers may see and behave in ways that raise nuclear dangers, the continuing risk of conflict leading to inadvertent nuclear escalation, and the possibility that Ukrainian nuclear weapons will provoke still further nuclear proliferation —provide grounds for caution in embracing the proposition that nuclear weapons always, everywhere, and unfailingly promote peace and stability.

Even some proponents of Ukrainian nuclear weapons recognize this. John Mearsheimer writes, for example, that "Nuclear proliferation does not axiomatically promote peace and in some cases can even cause war."[41] If this judgement is accepted, then the argument for Ukrainian nuclear weapons is *not* that nuclear weapons *always* promote peace and will do so in the case of Ukraine. Rather, it becomes necessary to examine the narrower claim that, although nuclear proliferation can be dangerous and destabilizing, in the case of Ukraine it will produce peace and stability. Of course, once the unreliability of nuclear weapons as a cause of peace is conceded, proponents of a Ukrainian nuclear capability have a trickier, more difficult argument to make, because their framework admits of the possibility that nuclear spread will produce adverse consequences.[42] In light of the admitted downside risks of being wrong about the impact of Ukrainian acquisition of nuclear weapons, proponents must have an extremely strong, if not airtight, case that a Ukrainian capability will produce beneficial, rather than negative, results if they are to be at all convincing. In what follows, it is argued that their case is not strong enough to warrant the conclusion that nuclear spread in Ukraine is desirable; indeed, there are grounds for fearing that their case is not strong at all.

Will Ukrainian Nuclear Weapons Promote Peace and Stability?

There are a number of considerations specific to the Ukrainian case that undermine confidence that Ukrainian nuclear weapons will have the asserted beneficial effects:

Seizure of nuclear weapons would be dangerous and provocative

Ukraine possesses an unusual path to nuclear status: it can take control of the Soviet strategic nuclear weapons deployed on its territory. However, Ukraine's ownership of these weapons is contested by Russia, the weapons are formally under the control of the Commonwealth of Independent States, and are de facto in the operational control of Russia. There is no indication that Russia will willingly hand over these weapons to Ukraine. This raises the possibility of confrontation, crisis, or, in the worst case, conflict, between Russia and Ukraine should Kiev move to take custody of these weapons.

The risks of "instant" proliferation

If Ukraine does succeed in obtaining custody of some or all of the nuclear weapons on its territory, it will have become, in effect, an "instant" nuclear power. Unlike other nuclear states, it will not have experienced a protracted, multi-year nuclear development program during which appropriate organizations and procedures can be created, personnel can be trained, and thinking can be adjusted. While Ukraine has undoubtedly inherited some military personnel who have expertise derived from their involvement in the Soviet nuclear program, its government will inevitably be inexperienced in nuclear weapons matters and in the near-term it will lack a coherent nuclear establishment.

Even those who argue the benefits of nuclear proliferation are attentive to the risks of such a situation. Waltz, for example, frames his entire analysis in terms of the *slow* spread of nuclear weapons, suggests that the long lead times normally associated with nuclear acquisition insure against some of the potential dangers of nuclear spread, and offers the conclusion that "Rapid change may be destabilizing. The slow spread of nuclear weapons gives states time to learn to live with them, to appreciate their virtues, and to understand the limits they place on behavior."[43]

Custodial dangers

It follows from the previous point that Ukraine will not have immediately in place a mature framework for providing safe and secure custody of the nuclear weapons in its possession.[44] This is not a question of mistrusting Ukraine or doubting its ability to eventually develop a mature custodial system; rather, it is a byproduct of the peculiar path by which it might become a nuclear power. This consideration is critical because organizational and procedural safeguards are necessary if nuclear safety and security is to be assured; technical safeguards alone (insofar as they exist) do not suffice.[45] Hence, the standard worry that nuclear proliferation will increase the risk of inadvertent or unauthorized use or of nuclear terrorism may initially be all the more acute in the case of Ukraine. The fact of instability in Ukraine only exacerbates this concern.

Moreover, recent research suggests that custodial worries should be regarded as more than transitional.[46] Even the U.S. custodial system, widely assumed to be safe, has been more accident-prone than was realized during the Cold War. There is no reason to assume that the large complex organizations required to manage technically complex nuclear arsenals will always perform perfectly. This may be especially true of new proliferators, who may lack the technical or financial resources to achieve confidence-inspiring custodial arrangements (and who may not always attach the same priority to safety and security). Even granting that most states will have strong incentives to take good care of their nuclear arsenals, there is a certain irreducible risk of accident or mishap that inheres in the handling of nuclear weapons. Multiplying nuclear powers increases the risk of such mishaps. Thus, Mearsheimer

is right to note that "widespread proliferation would increase the number of fingers on the trigger, which in turn would increase the likelihood that nuclear weapons could be fired due to accident, unauthorized use, terrorist seizure or irrational decisionmaking."[47] There is no particular reason to regard Ukraine as exempt from these risks, even over the long run; in the short run, they may be greater than usual.

The nuclear balance between Russia and Ukraine may not be stable

Perhaps most importantly, there are serious questions about how stable the nuclear relationship between Russia and Ukraine would be, in both the short and the long run. The near-term situation could be quite precarious. If Ukraine succeeds in becoming a nuclear power by taking custody of the nuclear weapons on its territory, the locations, capabilities, and vulnerabilities of these weapons will be known in intimate detail by Russia; initially, Moscow will probably know more about these weapons than Kiev. Ukraine presently lacks any warning capability whatsoever. And it would likely take some time before Ukraine had an operational nuclear capability. Thus, it seems inevitable that Ukraine would pass through an initial period of substantial nuclear vulnerability — potentially raising for Moscow a preventive war temptation.

But the situation does not change fundamentally over the longer run. Ukraine will face a number of difficult constraints in attempting to construct a survivable deterrent force. The proximity of Russia and Ukraine means that Kiev is condemned to live with extremely short warning time, even when it possesses early-warning capabilities. This means that survivability measures based on exploitation of warning—such as alert and evacuation programs for aircraft and many schemes for mobile missiles—will be unavailable to Ukraine. While not landlocked, Ukraine has access only to the Black Sea, which does not provide a viable sea-based option. But fixed land-based sites are considered vulnerable, given the accuracy and lethality of modern nuclear systems. As the American experience has shown, developing survivable command and control for nuclear forces is neither cheap nor easy; it will be surprising if Ukraine does not experience grave concerns about the threat of nuclear decapitation. Further, Ukraine may be, in the manner of the two Germanies, particularly vulnerable to espionage, given that Russia and Ukraine share both the Russian language and Slavic backgrounds, while millions with Russian ancestry reside within Ukraine's borders. Accordingly, it may be possible for Russia to have unusually good intelligence about Ukraine's nuclear capabilities, even over the long haul.

This is a recipe for endemic instability. Even the United States, with its many thousands of warheads and multiple means of delivery, was recurrently plagued with vulnerability crises throughout the Cold War.[48] In 1981, for example, the United States possessed more than 20,000 nuclear weapons, nearly 2000 strategic delivery systems, the certainty of several thousand warheads that would survive any Soviet attack, and an extensive theater nuclear capability. Yet the Reagan Administration came to power committed to closing an alleged window of vulnerability, some of its senior advisors believed that the United States faced a national security emergency, and many strategic analysts argued that the United States lacked an adequate nuclear deterrent posture. Imagine what the Ukrainian nuclear debate may be like, given that it will possess a small and substantially vulnerable force. Ukrainian leaders will, for good reason, be considerably less confident of the survivability of their nuclear deterrent forces —a situation that would probably lead to first-use doctrines and hair-trigger postures. While there is no doubt that any attack by Russia on Ukrainian nuclear forces will involve some risk, this is a scenario that leaves lots of room for proverbial

clever briefers and for dangerous "use them or lose them" pressures.

Political instability in Ukraine

Finally, it is impossible to overlook the fact that Ukraine is in the midst of a dramatic political transformation. Its politics are unsettled, its economy is struggling, democracy is not deeply rooted, and its society is ethnically divided. The internal uncertainties in Ukraine amplify many of the dangers described above. What if Ukraine comes to be led by authorities who don't harbor "appropriate" thoughts about the character of nuclear weapons? What if internal unrest disrupts nuclear custodial arrangements? What if nuclear weapons get caught up in civil strife? The potential for trouble is obvious. Proponents of Ukrainian nuclear weapons will say that Russia is at least as unstable as Ukraine, perhaps more so. While true, this doesn't make it any more desirable to have nuclear weapons in other unstable places.

To summarize, in the previous section we examined the general claim that nuclear weapons cause peace and stability, and found reasons for hesitating to make a huge policy bet on the universal applicability of that proposition. In this section we have considered the more specific claim that *Ukrainian* nuclear weapons will cause peace and stability. Again, there are grounds for hesitation: Ukrainian efforts to become a nuclear power may induce preventive war incentives in Russia or, in the worst case, provoke Russian attack; irreducible custodial dangers will exist; the Russian-Ukrainian nuclear balance will probably be perceived to be, and may well in fact be, unstable, thus raising all the traditional preemptive and preventive dangers; and Ukraine is unlikely to achieve internal stability anytime soon. Thus, while it is plausible that Ukrainian nuclear weapons will produce beneficial consequences, it is also distinctly possible that they will not. Accordingly, a Ukrainian nuclear arsenal is a dangerous experiment to run.

Will Nuclear Weapons Ensure Ukrainian Security?

Ukraine's leaders will rightly be concerned first and foremost with Ukrainian security. The fundamental question for them is not whether nuclear weapons will produce international stability, but whether, on balance, they will improve Ukraine's capacity to defend itself; what matters to Kiev is not whether Ukrainian nuclear weapons are good or bad for the "international community" or the NPT regime, but rather whether they are good for Ukraine. Moreover, as an independent and sovereign state, Ukraine has every right to make whatever preparations it thinks necessary for its security, whatever the preferences of the United States, the West, or the wider international community. Having just emerged from several centuries of subjugation to Moscow, Ukrainians will be intensely aware of the need to defend their sovereignty. Moreover, the growing influence of imperialists in Moscow, vividly evidenced by the results of the Russian election in December 1993, will only reinforce Ukraine's legitimate fears about its security. Hence, if there is not a plausible case that Ukraine is better off without nuclear weapons than with them, then the international community's worries about the dangers of nuclear proliferation will probably be moot; Ukraine will look after its own interests. However, there is a good case to be made that Ukraine should forego the nuclear option, that its security interests will be best served by pursuing a different path.

This conclusion does not rest, as is often assumed, on the presumption that Ukraine does not face a serious security threat. Nor does the argument developed here posit, as some do, that nuclear weapons will fail to provide security benefits to Ukraine. Rather, the following discussion suggests that the nuclear option is not the best policy for coping with threats to Ukraine's security and that, for Ukraine, the benefits of nuclear acquisition do not exceed the costs.

Three sets of considerations lead to the conclusion that Ukraine's interests are best served by pursuing non-nuclear solutions to its legitimate security concerns. One set of considerations focuses on the problems and dangers that Ukraine would experience in becoming a nuclear-armed state. A second set highlights the dilemmas that would arise for Ukraine should it seek to exploit nuclear weapons in its defense posture. The third draws attention to the costs, political and financial, of nuclear acquisition. When these considerations are taken into account, the nuclear option is far less attractive, even allowing that nuclear weapons would provide deterrent benefits for Ukraine under some circumstances.

Transitional Dangers

Even if one can imagine that eventually a stable and peace-causing nuclear balance would arise between Ukraine and Russia (as we shall see below, a dubious assumption), it is still necessary to be concerned about the risks associated with the transitional period; that an attractive endpoint can be envisioned is irrelevant if the dangers of the transition make it seem possible, or even likely, that the endpoint will never be reached. There are two reasons for fearing that this might be the case with respect to Ukrainian nuclear weapons.

First, as mentioned above, in all likelihood Ukraine cannot take custody of the nuclear weapons on its territory without running a considerable risk of military intervention by Russia. Even if this is avoided at first, Ukrainian seizure of these weapons will create powerful preventive and preemptive motivations in Moscow, increasing the risk of intervention in any subsequent confrontations. Grabbing these weapons could provoke the very war Ukraine professes to fear.[49]

Second, Ukraine will inherit only incoherent fragments of a meaningful nuclear weapons establishment. The missiles on its territory are more suitable for striking the United States than Russia, and are not easily modified to be more relevant to Ukraine's security needs. It is possible that Russia will leave behind disabled, rather than functional, nuclear weapons; Moscow has little incentive to make things easy for Ukraine. Nor will Ukraine initially possess the nuclear weapons production complex necessary for the restoration and maintenance of its nuclear arsenal. These considerations reinforce the point that in the short run Ukraine is likely to experience a dangerous period of extreme vulnerability.

Doctrinal Dilemmas and the Utility of Ukrainian Nuclear Weapons

Net judgements about the desirability of nuclear weapons for Ukraine will, of course, depend heavily on conclusions about how useful nuclear weapons will be in enhancing Ukraine's security. There are reasons for believing that the benefits of nuclear acquisition will be more limited than is implied by proponents of a Ukrainian nuclear arsenal.

First, many of the most immediate and urgent threats to Ukrainian security simply are not addressed by the fact of nuclear acquisition. It is widely believed that the Ukrainian state is in serious jeopardy, but the threats to its continued existence are primarily economic and

socio-political: its economy is in terrible shape, it is hugely dependent on Russia for energy supplies, and it is an ethnically divided state. These forces, a recent U.S. intelligence estimate concluded, are likely to result in the violent splintering of Ukraine.[50] Some of the most pressing scenarios involve the political erosion, or implosion, of Ukraine, whether from internal forces, Russian subversion, or both. In either case, nuclear weapons do not represent a solution. If Crimea or the predominantly Russian areas in eastern Ukraine vote to secede or to reintegrate with Russia, will nuclear weapons be relevant to the solution of that crisis? If Ukraine erupts in civil war, will its leaders be prepared to use nuclear weapons on its own territory against its own citizens? In short, if Ukraine collapses from internal political forces, nuclear weapons are not likely to help Kiev hold the state together. None of its fundamental internal problems are addressed by the possession of nuclear weapons. Indeed, Ukraine's protracted nuclear flirtation has probably exacerbated these problems by inhibiting the development of closer relations with the United States and other Western states and limiting the amount of aid and technical assistance that Kiev has received since it achieved independence in December 1991.

Second, the value of nuclear weapons in addressing Ukraine's military security problems will be much more limited than many in Kiev implicitly assume. Even over the long-run, Ukraine will be condemned to nuclear inferiority. Russia starts this competition with an enormous head start, considering the thousands of warheads and the vast nuclear production complex in its possession. Moscow is likely to be able to invest more resources in maintaining and modernizing its nuclear forces. Ukraine's force will be much smaller and, much more importantly, its potential vulnerabilities will be a perennial source of worry and instability. Thus, Ukraine will have an asymmetric nuclear relationship with Russia. Moscow will possess substantial, if not nearly complete, counterforce, damage-limiting options against Ukraine and hence will be in a position to heed preventive or preemptive incentives in crisis or conflict; Kiev will not possess symmetrical options. Against Ukraine, Moscow may actually possess escalation dominance, which many during the late 1970s and early 1980s feared that the Soviet Union had achieved or was achieving even against the enormous and diverse American nuclear capability; that is, there will be no scenario in which Ukraine is better off after using nuclear weapons, providing one takes into account the Russian nuclear reprisal. Given these conditions, Ukraine's nuclear force will be deterred by Russia's under most circumstances.[51]

How, then, will Ukraine effectively incorporate nuclear weapons into its defense strategy? How will it devise a coherent, effective, and credible nuclear doctrine? What security problems can it reasonably expect to solve by acquiring nuclear weapons? In my view, the Ukrainian debate has paid remarkably little attention to these fundamentally important questions. Even a modest amount of attention to such questions reveals the limited utility of nuclear weapons for Ukraine.

In terms of international conflict, for example, the most likely scenarios for Ukraine involve limited conventional war with Russia. These two states could end up fighting over Crimea, or over the eastern frontier, or even over the nuclear weapons on Ukrainian territory. The problem for a *nuclear* Ukraine is that incremental challenges are hard to deter; nuclear use represents such an enormous escalation that nuclear threats are hard to make credible.[52]

Could Ukrainian nuclear weapons deter a major conventional attack by Russia? As noted above, even if Ukraine achieved a mutual deterrence relationship with Russia, it would need to contend with the stability-instability paradox: the more stable the nuclear balance,

the more plausible conventional war may seem despite the presence of nuclear weapons. Trying to deter a conventional attack from a position of nuclear inferiority will be even trickier. None of the doctrinal options available to Ukraine are very attractive. A doctrine of tactical nuclear use against an attacking Russian force implies first use by Ukraine of nuclear weapons on Ukrainian soil; if Russian and Ukrainian conventional forces are closely intermingled, Kiev's own forces may be at risk from its own nuclear weapons. Alternatively, Ukraine could try to launch nuclear attacks against conventional military targets in rear areas in Russia. This, of course, would not necessarily solve the problem of the invading force on Ukraine's soil. And in either case, should Russia retaliate symmetrically (or worse, escalate the nuclear engagement), it seems unlikely that Ukraine's military situation will, in the net, be improved, especially if one takes into account the presumption, widely held in the West, that reciprocal tactical nuclear use advantages the side with the larger conventional forces.

Ukraine could, of course, attempt to deter a Russian conventional attack through a purely punitive doctrine, threatening to attack one or more Russian cities or key economic concentrations should Russia strike into Ukraine. The problem with this approach is that any Ukrainian nuclear attack against such targets in Russia is likely to guarantee the destruction of at least an equal number of targets in Ukraine; if Moscow is destroyed by a Ukrainian nuclear strike, Kiev will almost surely be lost in the Russian reprisal. Again, the credibility of the threat will be undermined by the reality of Russia's retaliatory options.

Many of the same objections, it may be pointed out, could be levelled at NATO's nuclear posture vis-a-vis the Soviet Union, yet NATO clung to its nuclear doctrine.[53] But NATO also spent the last thirty years of the Cold War energetically seeking, at enormous expense, to strengthen its conventional capabilities and feverishly debating the state of the conventional balance. This behavior does not suggest any confident belief on the part of NATO that nuclear weapons, tactical or otherwise, had solved the threat of Soviet conventional aggression in Europe—this despite the fact that NATO's nuclear capability was vastly greater than Ukraine's is likely ever to be.[54]

What about deterring Russian nuclear attacks? Here the problem for Ukraine is that, insofar as its nuclear forces are vulnerable, its nuclear arsenal may be as likely to invite as to deter nuclear attack. This could be particularly true if, as would be the case with substantially vulnerable forces, its own nuclear options would depend to a large extent on its willingness to use nuclear weapons first. Fearing this, Moscow may be tempted to undertake preventive or preemptive attacks. Indeed, under these circumstances, a risk for Ukraine in any of the scenarios just described above is that any Ukrainian nuclear use may provoke a substantial counterforce attack by Russia. Any deterrent benefit Ukraine gains by nuclear acquisition brings with it considerable problems, risks, and dangers.

In short, with respect to some of the more likely challenges to Ukrainian security, nuclear weapons do not appear to provide enormous benefit to Kiev. A Ukrainian nuclear arsenal does not magically solve the problem of major Russian nuclear and conventional threats. And it will, of course, be even less relevant to lesser challenges and contingencies.

Proponents of a Ukrainian nuclear force will argue, nevertheless, that nuclear weapons will provide an ultimate guarantee of Ukraine's sovereignty, that its nuclear threats will be credible if it is faced with conquest. As John Mearsheimer writes, "A defeated Ukraine could well use its nuclear weapons against Russia before going under...Hence, an aggressive Russia could not dismiss the Ukrainian nuclear threat."[55] This presumes, of course, some minimum level of survivability for Ukraine's nuclear force. It also addresses only one

extreme scenario, in which Ukraine, on the edge of being conquered, vengefully fires its nuclear weapons. But Russia could certainly fear that this might happen, even though it would be an irrational step for Ukraine; as Thomas Schelling has famously pointed out, deterrent benefit can be derived from "threats that leave something to chance"—that is, threats that might be carried out, through inadvertence, loss of control, poor decisionmaking, or irrationality, even though it does not make sense to do so.[56]

But Ukraine can gain this benefit only by exposing itself to enormous risk as well. This is true because it makes little sense to use nuclear weapons even in the extreme scenario of threatened conquest. As Waltz notes, "If their national existence should be threatened, weaker states...may destroy themselves through resorting to nuclear weapons." Waltz then sets aside this danger, but on the grounds that weaker nuclear powers are unlikely to use nuclear weapons even in this desperate case![57] If a bold, reckless, or highly motivated nuclear opponent should calculate similarly, how reliable will Ukraine's ultimate deterrent be?[58]

Thus, even if nuclear weapons provide some ultimate safeguard for Ukraine's sovereignty, it is clear that they do not solve all of its security problems. None of the states that have acquired nuclear weapons have found their security environments rendered quiescent by the fact of their nuclear capabilities. For all, threats continued to exist and crises continued to happen. Most of the nuclear powers have found themselves in one or more conventional wars despite their nuclear capabilities. Each has maintained a considerable conventional capability; indeed, there is a high correlation between nuclear status and possession of some of the world's largest and most formidable conventional military establishments. Nor is there any evidence to suggest that nuclear-armed states are insensitive to the conventional preparations of their adversaries; the United States, after all, possessed more than 20,000 nuclear weapons but nevertheless still spent in excess of 80% of its defense budget on conventional assets to counter the conventional forces of the Soviet Union and Soviet allies around the world. In short, nuclear weapons are at most an incomplete solution to Ukraine's security problems.[59]

Costs of Nuclear Possession by Ukraine

Despite the difficulties and complications outlined above, a Ukrainian nuclear arsenal would undoubtedly raise risks and uncertainties for Russia that would affect Moscow's perceptions, calculations, and decisionmaking; as indicated, it is plausible that, under some circumstances, this might harm rather than enhance Ukrainian security, but it is also plausible that it would, under some circumstances, provide some deterrent benefit. If nuclear acquisition were a cost-free policy option, it would be at least arguable that the deterrent benefit it could provide was worth having, doctrinal complications and nuclear instabilities notwithstanding. But in fact, nuclear acquisition will impose a number of economic, political, and military costs on Ukraine. The circumscribed benefits of becoming a nuclear power must be weighed against these costs if Ukraine is to make a considered judgement about the nuclear option.

Becoming a nuclear target

Taking control of the nuclear weapons on its territory guarantees that Ukraine will be regarded as a necessary target by the nuclear forces of all states who fear that they could conceivably be threatened by Ukrainian forces. This would include the United States, since

most of the nuclear systems in Ukraine were designed for intercontinental missions against U.S. territory. This would certainly compel, and justify, targeting of Russian nuclear capabilities against Ukraine. Foregoing nuclear weapons cannot protect Ukraine against all nuclear risks (although some limited protection may be offered by the norm, affirmed by the nuclear states in the NPT, that nuclear threats should not be made against non-nuclear states). But nuclear acquisition is one of the few things Ukraine could do that would both ensure and legitimize nuclear threats against it. In contrast, cases are few and far between in which nuclear weapons figured prominently in relations between a nuclear and a non-nuclear power (although the possibility of nuclear coercion cannot be excluded).[60]

Financial Costs

Despite the myth that nuclear weapons are cheap, they are in fact expensive for most states. If Ukraine wished to become a medium nuclear power on the order of Britain or France, for example, it would have to spend at least $3-5 billion per year on its nuclear capabilities—and probably more since British and French nuclear expenditures are reduced because of their nuclear cooperation with the United States. Five billion dollars exceeds or would constitute the overwhelming fraction of the defense budgets of all but the six or eight largest defense spenders in the world. It is 3.6% of Ukraine's estimated GDP in 1991; again, this is a larger share of the nation's resources than is spent by most countries in the world.[61] Given Ukraine's economic needs and constraints, there will surely be incentives to minimize the resources devoted to defense and the sums associated with a medium nuclear capability will surely be painful for Kiev.

A possible counter to this point is the experience of small nuclear powers, such as Israel, or especially South Africa, who seem to have acquired nuclear capabilities much less expensively than Britain or France. South Africa, for example, is estimated to have produced nuclear weapons for only a few hundred million dollars.[62] Expenditures at this level would obviously be much more affordable for Ukraine. However, it is important to keep in mind that neither Israel nor South Africa faced a nuclear-armed adversary. Neither maintained an operationally ready nuclear force posture. In the case of South Africa, its entire nuclear program amounted to half a dozen weapons kept in a single storage facility. Ukraine, in contrast, would be trying to deter one of the two major nuclear powers. To have an adequate deterrent, to ensure that it had some chance of possessing survivable forces, Ukraine would need to field a larger, more diverse, and operationally ready force. This is a much more expensive proposition. South Africa's nuclear arsenal may have been cheap to produce, but it would not have been an adequate deterrent had Pretoria's adversary been Russia.

The financial cost to Ukraine of exercising the nuclear option will probably be higher because of the substantial likelihood that it will engage in nuclear arms racing with Russia. As Charles Glaser has pointed out in the Soviet-American context, the inferior side in an asymmetric relationship will have a strong incentive to react vigorously to the reality, the perception, or the fear of inferiority.[63] Since Russia will be motivated to try to sustain the maximum feasible threat against Ukraine's nuclear force, Kiev will need to struggle continuously to minimize its vulnerability. This is unlikely to be cheap, especially in the beginning when Ukraine would need to create much of the basic infrastructure of a coherent nuclear-weapons capability.

Negative impact on conventional forces

The financial costs of nuclear acquisition matter not only because of the economic implications for Ukraine, but even more importantly, because it will almost surely result in difficult tradeoffs between conventional and nuclear forces. In view of its economic difficulties, it is hard to see how Ukraine can become a medium nuclear power without making some significant sacrifices in its conventional capabilities. From the point of view of Ukraine's security, this tradeoff is unfortunate for at least three significant reasons. One is that conventional forces, unlike nuclear, have utility across the whole range of security challenges that Ukraine might face; conventional forces surely would be used in limited war scenarios. Second, it is conceivable that the costs of a nuclear-weapons capability would so weaken Ukraine conventionally that it would be unable to defend itself conventionally in large contingencies; for reasons noted above, this would leave Kiev with the options of suicide or surrender—hardly a desirable state of affairs.

Lastly, and importantly, Ukraine is, in terms of population, resources, and geographic expanse, one of the largest states in Europe. It is within its means to generate considerable conventional combat power; even now it starts with a considerable inheritance of conventional capability from the Red Army. While it will never be able to match Russia in a conventional arms race, it is capable of mounting a credible conventional deterrent policy. John Mearsheimer has written, for example, that decisionmakers considering a conventional attack are highly sensitive to anticipated costs and are likely to be deterred if they cannot count on achieving a quick, cheap victory. As Mearsheimer puts it, "If a potential attacker believes that he can secure a decisive victory only by means of an attrition strategy, deterrence is very likely to obtain."[64] And, as Mearsheimer has elsewhere noted in discussing the risk that Russia would launch a conventional preventive war against Ukraine if Kiev exercises the nuclear option, "This is an unattractive military option. It would be a difficult task with conventional means, since Ukraine inherited substantial conventional forces from the Soviet military, which would enable it to put up formidable resistance."[65] Accordingly, if it adopts a conventional deterrent strategy, Ukraine is capable of mustering enough conventional capability to make any major military action against it seem a costly exercise—but the financial costs of nuclear status could undermine such an approach.

Ukraine would not be the first state to conclude that nuclear weapons should be forsaken because they cost too much in terms of conventional forces. In the late 1950s and early 1960s, Sweden had a nuclear-weapons development program and many in the Swedish security establishment assumed that Sweden would eventually become a nuclear power. In the end, it decided against nuclear acquisition. The logic of this decision has been explained as follows: "If Sweden allocates all its resources available for defence to conventional forces, it may be able to deter a conventional attack...If Sweden on the other hand allocated resources to a tactical nuclear force and thus less to the conventional forces, the latter may not be able to deter a conventional attack. If attacked, Sweden may then be forced either to surrender or to escalate and introduce nuclear weapons on the battlefield, thus inviting a nuclear counter-attack in contradiction with its basic security ambition to survive."[66] This logic came to have wide support in Sweden, especially among the military, who realized that Sweden's conventional capabilities would suffer enormously if nuclear weapons were acquired. Hence, in March 1968, the Swedish government declared that "it is at present not a security interest of Sweden to acquire nuclear weapons."[67] A similar logic, it is argued here, applies to Ukraine.[68]

Damage to arms control regimes

If Ukraine exercises its nuclear option, this would have a damaging effect on the arms control frameworks that presently apply to Russian and Ukrainian forces and territory. START I and START II would, of course, be most directly affected, since Russian ratification of the former and acceptance of the latter are conditional on Ukraine's accession to the NPT as a non-nuclear state. This, however, would be of greater consequence to the United States than to Ukraine. But the tension and acrimony that would surely accompany Ukraine's move to nuclear status could also undermine the Conventional Forces in Europe (CFE) agreement, the Helsinki Confidence and Security Building Measures (CSBM) regime, and the Open Skies Agreement. Since these agreements together limit Russia's ability to deploy forces in the area west of the Urals, restrict and require notifications of major troop movements and exercises, and institutionalize high levels of transparency, they are very much in Ukraine's security interest—indeed, they increase the viability of a conventional deterrent strategy. On the other hand, Ukraine's security predicament will be much worse if these agreements are undone. Because of Ukraine's greater vulnerability to conventional attack and much more limited national intelligence capabilities, these agreements are much more valuable to Kiev than they are to NATO.

International political costs of nuclear acquisition

Ukraine cannot exercise the nuclear option without doing damage to its relations with the United States and other Western states, all of whom are steadfastly opposed to nuclear proliferation. Although Western states, without exception, wish good relations with Ukraine, most will think it necessary to make Ukraine pay a price so that other potential proliferators will not be encouraged to think that the nuclear option can be painlessly exercised. Further, at least in the United States, the Congress is so strongly opposed to nuclear proliferation that the Clinton administration will probably be unable to avoid imposing sanctions even if it wanted to.[69] In addition, by breaking its many pledges to denuclearize, including those negotiated directly with the United States, it will have proven its unreliability as a negotiating partner, a fact that will certainly diminish incentives to make future deals with Ukraine.

For Ukraine, then, there will be a tension, if not a stark trade-off, between the nuclear option and its basic grand strategic impulse to integrate with the West. Hence, the nuclear decision is properly regarded not merely as a security policy question, but as a fundamental foreign-policy choice. Much that Ukraine seems to desire—integration into the Western community, access to Western institutions, close political relationships with key Western states, unambiguous support, political and otherwise, from Western states—will be impossible in the short run and much more difficult in the long run if Ukraine exercises its nuclear option. Almost surely, Ukraine cannot have both nuclear weapons and a successful Western-oriented foreign policy. Some in Kiev might still prefer the nuclear option, but this fundamental trade-off ought at least to be explicitly acknowledged.

Should Ukraine put itself unambiguously on the path to nuclear status, it will be defining itself as one of a small number of nuclear proliferation troublespots. It will be joining an elite club that presently includes North Korea, Iran, Iraq, and Algeria. How the international community reacts to such states is indicated by the efforts to penalize and ostracize North Korea. Because North Korea is, by choice, so isolated and autarchic, it is relatively invulnerable to such efforts. Ukraine, on the other hand, would be much more vulnerable to efforts to sanction and isolate it; much that Ukraine desires, needs, or cares about could be denied it if it exercises the nuclear option.

Quietly, a debate is beginning to emerge in the West over whether it should or should not prefer an independent nuclear Ukraine. Some Western specialists are so committed to nuclear non-proliferation and so convinced that U.S. and Western interests are best served by the prevention of nuclear proliferation that they would prefer Ukraine to be reabsorbed by Moscow rather than see an independent nuclear Ukraine. To say the least, it is deeply inimical to Ukraine's interests that such discussion is occurring in the West, particularly at a time when Ukraine's sovereignty seems so fragile.

Moreover, the potential political costs are considerable. Going nuclear will increase the risk of isolation. Indeed, Ukraine has already had a taste of this. When, in November 1993, the Ukrainian Rada appeared to repudiate Ukraine's commitment to join the NPT as a non-nuclear weapon state, the West reacted severely. As a somewhat stunned Ukrainian Foreign Minister, Anatoliy Zlenko, later explained to the Rada, "Since the first days of Ukraine's independence, we had never felt such intense international pressure, the main aim of which was to isolate us as quickly and as broadly as possible."[70] Of course, should Ukraine actually exercise the nuclear option, reactions would be more adverse, more widespread, and more sustained.

Thus, moves to expel or suspend Ukraine from international institutions would not be surprising. Its prospects for aid from and trade with the West would be harmed, a setback that has security implications given the importance of economic strength to national power. And even its military potential would be hurt, since some major arms suppliers, including notably the United States, have policies or laws against arms transfers that contribute to a proliferator's posture.

To be sure, some of these costs might be transitory, not all possible punitive measures would necessarily be taken, and not all states would automatically support sanctions indefinitely. But there would be real, meaningful, unavoidable political, economic, and military costs to Ukraine if it exercises the nuclear option. Ukraine must decide whether it wishes to face the future with nuclear weapons but alone—isolated, ostracized, and penalized—or whether its fortunes are better advanced by seeking integration with and support from the West.

In sum, is Ukraine better off becoming a nuclear power? The benefits of a Ukrainian nuclear arsenal, I have argued, are circumscribed. On the other hand, the costs of such an arsenal are high, the risks it raises are substantial, the trade-offs it imposes are painful. On balance, Ukraine would seem to be better served by a conventional deterrent strategy that preserves its diplomatic options and enables it to avoid deep isolation.

Conclusion

Proponents of nuclear spread wish to harness nuclear danger in the cause of peace. Even a small risk of nuclear use, they suggest, makes war too dangerous to fight. Those who oppose proliferation, whether in Ukraine or elsewhere, have been more powerfully swayed by the opposite formulation: even a small risk of war despite the presence of nuclear weapons makes proliferation too dangerous to encourage or to accept. This essay has tried to suggest that there are numerous reasons to fear that at least a small risk of war does exist even if Ukraine becomes a nuclear power.

Proponents of Ukrainian nuclear weapons like to pose Kiev's alternatives as nuclear weapons or insecurity. This is doubly wrong: Ukraine is neither wholly secure with nuclear

weapons nor, taking into account the conventional deterrent option, completely insecure without them. Certainly there are risks associated with a conventional deterrent strategy, but this is no less true of a nuclear deterrent strategy.

In sum, the nuclear-peace paradigm has a seductive appeal. It implies a simple and powerful solution to the problem of war and peace. It promises peace and stability where otherwise confrontation and conflict might reign. The countervailing considerations raised here are not meant to imply that nuclear war is inevitable if Ukraine gets nuclear weapons or even that nuclear weapons never promote peace and stability. Rather, I mean to suggest that our embrace of the proposition that nuclear weapons cause peace should be leavened with an appreciation of the factors cutting in the other direction. Advocates of Ukrainian nuclear weapons are betting that the logic of the nuclear revolution will prevail over the potential dangers of nuclear spread. And they could be right. But there is also a chance that they will turn out to be wrong. As John Mearsheimer has written, "Mismanaged proliferation could produce disaster, while well-managed proliferation could produce an order nearly as stable as the current order. Unfortunately, however, any proliferation is likely to be mismanaged...Even if proliferation were well managed, significant dangers would remain."[71] When one considers the stakes and the risks involved, the gamble is too great to run.

Notes

[1] The most cogent case for a Ukrainian nuclear arsenal is John J. Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," *Foreign Affairs*, Vol. 72, No. 3 (Summer 1993), pp. 50-66.

[2] Kenneth N. Waltz, *The Spread of Nuclear Weapons: More May Be Better*, Adelphi Paper No. 171, (London: IISS, Autumn 1981), p. 28.

[3] Martin van Creveld, *Nuclear Proliferation and the Future of Conflict* (New York: The Free Press, 1993), p. 124. Despite van Creveld's bold and interesting argument, the regional cases represent a less powerful set of evidence for proponents of nuclear spread. For one thing, the periods of time involved are considerably shorter than is the case for the superpowers. For another, in the Middle East there has been only a single (undeclared) nuclear power, Israel; and in South Asia, India was the sole nuclear power (although one without a deployed nuclear capability) into the 1990s, and according to the public record, the admitted nuclear program of Pakistan made great progress but never produced a deployable weapon. Hence, these cases do not prove that the potential dangers and instabilities associated with bilateral or multilateral nuclear relationships can be avoided over long periods of time. Van Creveld's assertion that nuclear spread prevents interstate war is undermined by the 1973 Middle East war, in which, as he himself notes, Israel possessed nuclear weapons and may have made nuclear threats (see pp. 101-102); he also slides by the 1982 war in Lebanon, which involved direct conflict between Israeli and Syrian forces. Van Creveld's argument is also weakened by the fact that he does not consider alternative causes of the historical trends he describes; unless other explanations are examined and rejected, the claim that nuclear weapons caused regional peace cannot be fully accepted.

[4] Barry R. Posen, "The Security Dilemma and Ethnic Conflict," *Survival*, Vol. 35, No. 3 (Spring 1993), pp. 38-39: "The nuclear forces of the former Soviet Union...have probably helped stabilize Russian-Ukrainian relations...Most of the Soviet nuclear forces came under the control of the Russian republic, thereby rendering large-scale anti-Russian violence in Ukraine very risky. The presence of large numbers of nuclear weapons on Ukrainian soil gives Ukraine a nuclear `threat that leaves something to chance." Although these weapons are believed to remain under the technical control of the Commonwealth (Russian) command structure, military action by Russians against Ukraine could

precipitate a Ukrainian attempt to seize these weapons...This would be a novel kind of nuclear crisis, but it would probably be enough of a crisis to produce the prudent behaviour among nuclear powers that existed during the Cold War."

[5] Waltz, *The Spread of Nuclear Weapons*, pp. 3,6. The point is illustrated by the following passage (p. 6): "The differences between conventional-multipolar and nuclear-bipolar worlds are fundamental." Obviously, Waltz is working with two variables here.

[6] See Kenneth Waltz, *Theory of International Politics* (Reading, Ma.: Addison-Wesley, 1979); he spells out the advantages of bipolarity in detail on pp.160-176. For a critique of Waltz's arguments about the effects of polarity, see Ted Hopf, "Polarity, The Offense-Defense Balance, and War," *American Political Science Review*, Vol. 85, No. 2 (June 1991) pp. 475-495. Waltz's claims about the peace-causing effects of nuclear weapons would be more powerful if, like Hopf, he rejected bipolarity as an important cause of peace. Hopf argues (pp. 498-490) that bipolarity is not a significant causal force and that the Cold War peace is explained by the defense-dominance created by nuclear weapons.

[7] Kenneth N. Waltz, "What Will the Spread of Nuclear Weapons Do to the World?," in John Kerry King, ed., *International Political Effects of the Spread of Nuclear Weapons* (Washington DC: International Security Affairs, U.S. Department of Defense, April 1979), p. 171. A similar analysis, with the identical conclusion, can be found in Waltz, *The Spread of Nuclear Weapons*, p. 2-3.

[8] As Hopf notes, if nuclear weapons are the true cause of peace, then "bipolarity is irrelevant." "Polarity, The Offense-Defense Balance, and War," p. 490.

[9] Indeed, in *Theory of International Politics*, Waltz writes (p. 173): "Some have believed that a new world began with the explosion of an atomic bomb over Hiroshima. In shaping the behavior of nations, the perennial forces of politics are more important than the new military technology."

[10] John J. Mearsheimer, "Back to the Future: Instability in Europe after the Cold War," *International Security*, Vol. 15, No. 1 (Summer 1990), p. 11 (note 11). He asserts, in the final clause of the quoted sentence, that "all three had substantial importance."

[11] Mearsheimer, "Back to the Future," p. 14.

[12] Mearsheimer, "Back to the Future," pp. 21-22 (Emphasis added).

[13] Mearsheimer, "Back to the Future," pp. 11, 22; and John Lewis Gaddis, "The Long Peace: Elements of Stability in the Postwar International System," in Sean M. Lynn-Jones and Steven E. Miller, eds., *The Cold War and After: Prospects for Peace* (Cambridge, MA: MIT Press, 1993), pp. 7-42.

[14] Waltz, for example, only argues that nuclear weapons "greatly help to explain" the long peace. This is very different from arguing that nuclear weapons are the single or primary cause. Kenneth N. Waltz, "Nuclear Myths and Political Realities," *American Political Science Review*, Vol. 84, No. 3 (September 1990), p. 744. Similarly, Mearsheimer, in "The Case for a Ukrainian Nuclear Deterrent," p. 57, describes nuclear weapons as "*A* principal cause," but not as the sole or primary cause, of the long peace. (Emphasis added.) See also Robert Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca, NY: Cornell University Press, 1989), pp. 27-28: "Although the 'long peace' is consistent with the theory of the nuclear revolution, other explanations pointing to other developments can claim to account for this outcome...In many cases these developments reinforce effects of nuclear weapons, and it is not easy to apportion the responsibility for peace."

[15] A forceful illustration of this argument is John Mueller, "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World," *International Security*, Vol. 13, No. 2, (Fall 1988), pp. 55-79.

[16] Mearsheimer suggests, in considering the proposition that democracies do not fight each other, that the case for a hypothesis must be judged indecisive if (1) the body of evidence is limited to a small number of cases; (2) there are other persuasive explanations for the outcome; and (3) disconfirming evidence has been avoided only by "near-misses." "Back to the Future," pp. 50-51. Obviously, all three are true with respect to the proposition that nuclear weapons cause peace. Thus, according to the criteria established by Mearsheimer, the hypothesis that nuclear weapons cause peace must be regarded as unproven.

[17] I am grateful to Barry Posen for suggesting that I consider this point.

[18] Posen, "The Security Dilemma and Ethnic Conflict," p.40. Also relevant here is Samuel P. Huntington, "The Clash of Civilizations," *Foreign Affairs*, Vol. 72, No. 3 (Summer 1993), which argues that "The most important conflicts of the future will occur along the cultural fault lines separating... civilizations from one another." (p. 25) Ukraine and Russia both belong to what Huntington labels the "Slavic-Orthodox" civilization, and hence share "civilization commonality." This is relevant here because "Common membership in a civilization reduces the probability of violence in situations where it might otherwise occur...If civilization is what counts..., the likelihood of violence between Ukrainians and Russians should be low." (p. 38)

[19] Alexander J. Motyl, *Dilemmas of Independence: Ukraine after Totalitarianism* (New York: Council on Foreign Relations Press, 1993), pp. 99-104.

[20] A good illustration of this point is 19th century Ukrainian poet and nationalist, Taras Shevchenko, who in his writings described Russian leaders as "murderers" and "cannibals" who had "crucified" Ukraine. Shevchenko is a leading figure in the history of 19th century Ukraine and influenced subsequent generations of Ukrainian nationalists. See Orest Subtelny, *Ukraine: A History* (Toronto: University of Toronto Press, 1988), pp. 232-235. See also John Morrison, "Pereyaslav and After: The Russian-Ukrainian Relationship," *International Affairs*, Vol. 69, No. 4 (1993), pp. 679-680 which notes Ukrainian resentment at what is regarded as the "enslavement" of Ukraine.

[21] An obvious response to this point is the argument that when homelands are in dispute, nuclear threats are more credible; deterrence, it is usually argued, is easier than extended deterrence.

[22] Waltz, *The Spread of Nuclear Weapons*, passim. See also Jervis, *The Meaning of the Nuclear Revolution.*

[23] For an excellent discussion of the conventionalization of nuclear strategy and other efforts to escape the defensive implications of nuclear weapons, see Robert Jervis, *The Illogic of American Nuclear Strategy* (Ithaca, NY: Cornell University Press, 1984), pp. 47-63.

[24] Waltz, *The Spread of Nuclear Weapons*, p. 7. The full sentence reads: "Nuclear weapons and an appropriate doctrine for their use may make it possible to approach the defensive-deterrent ideal, a condition that would cause the chances of war to dwindle."

[25] Important in this context is Scott Sagan's argument that military organizations possess a number of proclivities that incline them to beliefs and preferences that undermine rational deterrence relationships. This suggests the existence of a widespread causal mechanism for generating policy-relevant "inappropriate" beliefs—and Sagan suggests that the problem may be more severe in states without the tradition of civil control of the military that existed in the US and the USSR. See Scott D. Sagan, "The Perils of Proliferation: Organizations, Deterrence, and the Spread of Nuclear Weapons," *International Security*, Vol. 18, No. 3 (Spring 1994). Also pertinent here is Peter Feaver, "Proliferation Optimism and Theories of Nuclear Operations," *Security Studies*, Vol. 2, No. 3-4 (Spring-Summer 1993), pp. 159-191, which examines reasons why new proliferators may think or behave more dangerously than the superpowers.

[26] Waltz, "Nuclear Myths and Political Realities," p. 731.

[27] Waltz, "Nuclear Myths and Political Realities," pp. 738, 741. (Emphasis added.)

[28] Waltz, "Nuclear Myths and Political Realities," p. 741. (Emphasis added.) These points undermine van Creveld's argument that proliferation in not as worrisome as Western experts believe because proliferators usually employ Western (as opposed to some more disturbing "ethnic") mode of thinking about nuclear weapons. Clearly, beliefs common in the Western debate are worrying enough. See van Creveld, *Nuclear Proliferation and the Future of Conflict*, p. 104.

[29] Waltz, *The Spread of Nuclear Weapons*, p. 28. In the same passage, Waltz acknowledges that superpower nuclear doctrines "tilted" not toward deterrent strategies whose benefits he was espousing but toward warfighting strategies that make arms races "very difficult to avoid."

[30] Jervis, *The Illogic of American Nuclear Strategy*, pp. 38-39.

[31] This is known as the stability-instability paradox. For more on this point, see Jervis, *The Illogic of American Nuclear Strategy*, pp. 31-33.

[32] Waltz, The Spread of Nuclear Weapons, p. 19.

[33] Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks* (Ithaca, NY: Cornell University Press, 1991), p. 2 & xi. See also pp. 201-202 for an explication of this point.
[34] Posen, *Inadvertent Escalation*, pp. 28-67. The basic argument is laid out on pp. 28-29.
[35] On the problems experienced by Ukraine's Air Force, see Ustina Markus, "Ukraine Restructures its Air Forces: New Role, New Problems," *RFE/RL Research Report*, October 22, 1993, pp. 52-53. Ukraine inherited a lot of aircraft from the USSR, but has not been able to afford to maintain and operate them effectively. It also, for obvious reasons, has lacked warning capabilities on its eastern frontier.
[36] This issue is discussed in Campbell, Carter, Miller, and Zraket, *Soviet Nuclear Fission*, pp. 110-113; and in Steven E. Miller, "Nuclear Proliferation Risks and the Former Soviet Union," Working Paper No. 6, Woodrow Wilson Center for International Studies, April 1993, pp. 7-9.
[37] See, for example, Stephen Meyer, *Probing the Causes of Nuclear Proliferation: An Empirical Analysis, 1940-1973*, (Doctoral dissertation, University of Michigan, 1978), p. 310.
[38] See, for example, Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 51, which argues for a world in which Ukraine and Germany are nuclear powers and in which "all the minor powers" are non-nuclear.
[39] The motives and nuclear options of other FSU states are examined in Miller, "Nuclear Proliferation Risks and the Former Soviet Union," pp. 5-15.
[40] But disputing this argument is Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," pp. 60-61, which argues that Ukrainian nuclear weapons will dampen the prospects for proliferation in Europe by creating a nuclear-armed buffer state protecting Germany and East-Central Europe from the latent threat of Russia.
[41] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 51. See also Mearsheimer, "Back to the Future," pp. 37-39, where he provides an excellent concise analysis of the dangers of nuclear proliferation.
[42] As Michael Brown has observed, "Those who believe that nuclear deterrence is a stabilizing influence in world politics have failed to develop a rigorous framework for distinguishing between 'good' proliferation and 'bad' proliferation. Taken to its logical conclusion, their argument would hold that every state in the international system should be encouraged to acquire nuclear deterrent capabilities. No serious analyst takes this position, however. Where, then, should we draw the line?" "The 'End' of Nuclear Arms Control," *Arms Control*, Vol. 14., No. 1 (April 1993), p. 43. Brown provides a concise and useful framework for distinguishing good from bad proliferation on pp. 43-44.
[43] Waltz, *The Spread of Nuclear Weapons*, pp. 1, 10, & 26. Waltz's concern with the pace of proliferation focussed on the spread across states rather than within states, but I believe that same concerns apply in the latter case.
[44] A useful discussion of these issues is Martin J. DeWing, "The Ukrainian Nuclear Arsenal: Problems of Command, Control, and Maintenance," *Working Paper No. 3*, Program for Nonproliferation Studies, Monterey Institute of International Studies, October 1993.
[45] For a full discussion of this point, see Kurt Campbell, Ashton B. Carter, Steven E. Miller, and Charles Zraket, *Soviet Nuclear Fission: Control of the Nuclear Arsenal in a Disintegrating Soviet Union*, CSIA Studies in International Security, No. 1 (Cambridge, MA: Center for Science and International Affairs, Harvard University, November 1991), pp. 11-16.
[46] See, in particular, the important findings of Scott D. Sagan in *The Limits of Safety: Organizations, Accidents, and Nuclear Weapons* (Princeton: Princeton University Press, 1993).
[47] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 51.
[48] See, for example, Lawrence Freedman, *The Evolution of Nuclear Strategy*, Second Edition (New York: St. Martin's Press, 1989), pp. 387-392, for an account of the ICBM vulnerability crisis in the late 1970s.
[49] Russian consideration of the possibility of war with Ukraine is mentioned in Konstantin E. Sorokin, *Russia's Security in a Rapidly Changing World*, Center for International Security and Arms Control, Stanford University, January 1994, p. 19. According to one Russian expert who was asked about the implications of a nuclear Ukraine for Russia's defense policy, Moscow's military planners

think in terms of only two scenarios: a non-nuclear Ukraine or war. Interview, Moscow, January 1994.

[50] See Daniel Williams and R. Jeffrey Smith, "Dire US Forecast for Ukraine Conflict," *International Herald Tribune*, January 26, 1994. For a concise survey of Ukraine's economic troubles, see Fred Kaplan, "Ukraine's Morass: A Rich Potential Lost," *Boston Globe*, March 3, 1994. Ukraine's vulnerability to Russian manipulation of energy supplies is illustrated in John Lloyd, Jill Barshay, and Robert Corzine, "Russia Cuts Gas Supplies to Ukraine," *Financial Times*, March 4, 1994.

[51] It is worth noting the some American strategists believed that even the U.S. nuclear deterrent would be deterred under most circumstances, and that the US had a vigorous debate on this question. For a useful concise survey of the issue, see Scott D. Sagan, *Moving Targets: Nuclear Strategy and National Security* (Princeton: Princeton University Press, 1989), pp. 77-78. One of the classic statements of this concern is Paul H. Nitze, "Deterring Our Deterrent," *Foreign Policy*, No. 25 (Winter 1976-1977), pp. 195-210. That the United States, with its vast arsenal, had such a debate should suggest the difficulties Ukraine may face in trying to devise a credible nuclear posture.

[52] On the difficulty of deterring limited challenges, see Patrick Morgan, *Deterrence: A Conceptual Analysis* (Beverly Hills, Cal.: Sage Publications, 1983), pp. 143-145.

[53] For a detailed account of NATO's endless struggle to devise a credible and politically acceptable nuclear doctrine, see Ivo H. Daalder, *The Nature and Practice of Flexible Response: NATO Strategy and Theater Nuclear Forces Since 1967* (New York: Columbia University Press, 1991). As Daalder points out (p. 5), in the NATO nuclear debate, "Both hawks and doves shared the assumption of the incredibility of suicidal threats..."

[54] Indeed, it is striking that some of the same scholars who are now arguing that nuclear weapons will keep the peace between Russia and Ukraine spent years preoccupied with the NATO-Warsaw Pact conventional balance in Europe. In view of their present beliefs about the peace-causing effects of nuclear weapons, they should have been utterly uninterested in the conventional balance, which is, of course, inconsequential if nuclear weapons solve everything. Instead, they seem to have been concerned about the stability-instability paradox. See, for example, John J. Mearsheimer, "Why the Soviets Can't Win Quickly in Central Europe," *International Security*, Vol. 7, No. 1 (Summer 1982), pp. 3-39; and Barry R. Posen, "Measuring the European Conventional Balance: Coping with Complexity in Threat Assessment," *International Security*, Vol. 9, No. 3 (Winter 1984-1985), pp. 47-88. More consistent in the regard is Waltz, who suggests that conventional forces are unimportant in a world of nuclear deterrence. See, for example, Waltz, "Nuclear Myths and Political Realities," p. 739: "Nuclear weapons strip conventional forces of most of their functions...Enlarging conventional capabilities does nothing to strengthen deterrence." Obviously, this is another of Waltz's theoretical deductions that was observed in the breech by the United States and the Soviet Union.

[55] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 57.

[56] See Thomas C. Schelling, "The Threat That Leaves Something to Chance," in his *The Strategy of Conflict* (Cambridge, Ma.: Harvard University Press, 1980), pp. 187-203.

[57] Waltz, *The Spread of Nuclear Weapons*, pp. 24-25. Waltz's argument is that the risk of nuclear escalation should prevent desperate situations from arising in the first place.

[58] Schelling also notes the difficulty of making effective deterrent threats when implementation of the threats will bring great pain to the threatener as well as the threatened: "To say only that one may carry out the threat, not that one certainly will, is to invite the opponent to guess whether one will prefer to punish himself and his opponent..." *The Strategy of Conflict*, p. 187.

[59] As Waltz puts it, "Nuclear weapons and strategies...do not cover all of the military problems of new nuclear states..." *The Spread of Nuclear Weapons*, p. 26.

[60] See Richard Betts, *Nuclear Blackmail and Nuclear Balance* (Washington DC: The Brookings Institution, 1987), which recurrently notes the limited and often ambiguous evidence about the utility of nuclear coercion. In some cases, it is unclear whether a nuclear threat was ever clearly communicated (for example, by the United States against China during the Korean War), and in others it is unclear what impact, if any, nuclear threats had on the behavior of target states.

[61] On the cost of the British and French nuclear forces, see Campbell, Carter, Miller and Zraket,

Soviet Nuclear Fission, pp. 90-91. The other figures are drawn from *The Military Balance, 1992-1993* (London, IISS, Autumn 1992).

[62] It is unclear, however, what these cost estimates include or how reliable they are. The alleged figure seems surprisingly low. When Israel was developing its nuclear weapons capability in the 1960s, for example, it was spending hundreds of millions of dollars per year (in 1960s dollars) on its program, according to public estimates. See Seymour M. Hersh, *The Samson Option: Israel's Nuclear Arsenal and American Foreign Policy* (New York: Random House, 1967), p. 67.

[63] Charles L. Glaser, *Analyzing Strategic Nuclear Policy*, (Princeton: Princeton University Press, 1990), p. 147.

[64] John J. Mearsheimer, *Conventional Deterrence* (Ithaca, NY: Cornell University Press, 1983), p. 64.

[65] Mearsheimer, "The Case for a Ukrainian Nuclear Deterrent," p. 58. It is worth noting that Mearsheimer tries to have it both ways on this issue. On the one hand, he argues (p. 56) that Ukraine will *not* be strong enough conventionally relative to Russia to have a viable conventional deterrent strategy (although even here he agrees that Ukraine will be able to put up "dogged resistance"). On the other hand, he argues (p. 58) that a Russian preventive war option is not a worry because Ukraine will, in effect, deter it. This formulation has the effect of making a Ukrainian nuclear deterrent both necessary (because a conventional option is lacking) and safe (because preventive war is unlikely). But there is at least some tension between the two arguments.

[66] Jan Prawitz, "Sweden: A Non-Nuclear Weapon State," in Johan Jorgen Holst, ed., *Security, Order, and the Bomb: Nuclear Weapons in the Politics and Defence Planning of Non-Nuclear Weapon States* (Oslo: Universitetsforlaget, 1972), p. 65. I have also benefitted from several conversations on this subject with Dr. Jan Prawitz, for which he has my thanks.

[67] Prawitz, "Sweden: A Non-Nuclear Weapon State," p. 66.

[68] Although the outcome was different from the Swedish case, similar arguments were voiced in Israel. Internal critics of the Israeli nuclear program feared that it was harming Israel's ability to compete with its adversaries in conventional forces. See Hersh, *The Samson Option*, p. 65: "The huge expense of Dimona [Israel's nuclear weapons facility] was a constant source of dissent inside the Israeli government, which was in a struggle to match Egypt in the rapid arms buildup in the Middle East...The perennial critics of Israel's nuclear program...saw the Egyptian arms buildup as the most compelling argument against investing money at Dimona."

[69] See for example, Senator Larry Pressler, "We Need Leverage to Slow Nuclear Race," *New York Times*, March 5, 1994, in which Senator Pressler argues that it is imperative that there be "penalty" associated with the decision by a potential proliferator to go nuclear.

[70] FBIS.

[71] Mearsheimer, "Back to the Future," pp. 37, 39.

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