Proliferation Papers

Strategic Stability in the Cold War

Lessons for Continuing Challenges

In collaboration with the Atomic Energy Commission (CEA)

David S. Yost

Winter 2011

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Though it has long been a concern for security experts, proliferation has truly become an important political issue since the 1990s, marked simultaneously by the nuclearization of South Asia, the weakening of international regimes and the discovery of clandestine activities, the number and gravity of which have surprised observers and analysts alike (including Iraq in 1991, Libya until 2004, the North Korean and Iranian programs, and the A. Q. Khan network).

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Introduction

Extending from roughly the end of the Second World War to the collapse of the Soviet empire in 1989-1991, the Cold War period witnessed – among other upheavals – significant conflicts in East Asia and the Middle East, the end of European colonial empires in Africa and Asia, and a remarkable competition between the United States and the Soviet Union across virtually every aspect of endeavor, from economic and cultural activities to military, nuclear, and space capabilities. In this era of great instability scores of new states gained their independence, some great powers lost stature and influence in comparative terms, and millions of people perished in civil and interstate wars and at the hands of repressive governments.

Yet it was during this period that the phrase "strategic stability" gained currency both as an objective and as an apt way of describing four dominant features of the period. First, the United States and the Soviet Union never went to war, although there were several occasions when some observers saw war as a genuine possibility, including the Berlin and Cuban crises, the 1973 Arab-Israeli war, and the "war scare" of the early 1980s. Second, neither these powers nor any others detonated nuclear weapons to inflict damage on an enemy, though they relied on them for deterrence, alliance cohesion, and other purposes. Third, the configuration of political alignments in Europe and Northeast Asia was remarkably stable from the mid-1950s to the end of the Cold War in 1989-1991. Fourth, the proliferation of nuclear-weapon states was contained to a much lower level than feared by some observers in the 1950s and 1960s.

This paper concentrates on the first of the four elements of strategic stability in the Cold War listed above – the fact that the two superpowers did not engage in a direct "hot war" with each other. It raises the question, to what extent did U.S. analytical models concerning "crisis stability," "first-strike stability," and "arms race stability" – and policies based on these models – contribute to the avoidance of war between the United States and the Soviet Union? These models assumed that Soviet and U.S. decision-makers had, or would in time adopt, similar deterrence policies and force structures, and that these parallel approaches would provide for strategic stability in the bilateral relationship. Despite the radical simplification of reality in these models, many U.S. analysts and policy-makers attached great importance to them, and relied on them as a key element in decisions about the strategic force structure and doctrine of the United States. However, in light of Soviet and U.S. behavior at the time and in view of what has subsequently been learned about Soviet policies and decision-

making, the proponents of these models appear to have overestimated their utility.

The expression “strategic stability” is still widely used to signify the objective of avoiding major-power war. It may therefore be useful to critically examine the cogency and relevance of these U.S. models from the Cold War period with a view to identifying lessons for current challenges.

U.S.-Soviet predominance and fear of nuclear war

It is not totally clear what prevented the U.S.-Soviet stalemate from erupting into a catastrophic world war. While important documentary and interview sources have become available since the end of the Cold War, the historical record is far from complete; and, even if it were more extensive, the full picture would probably remain elusive. The basic asymmetry in publicly available documentary evidence persists. Reliable material concerning the United States is much more accessible than that regarding the Soviet Union. With the principal exception of the Kataev archive of Soviet documents at Stanford University, which few scholars have closely examined, the main primary sources consist of the archives of the non-Soviet Warsaw Pact nations (which comprise by definition only the documents that the Soviet government chose to distribute), plus memoirs and oral history interviews. Even if supported by historical documents, memoirs can be self-serving; and the problems of bias and inaccurate memory with oral history can be even greater. As Mark Kramer has noted, the absence of publicly available Soviet documentation rules out "critical oral history."

> On the Soviet side… the ability to cross-check and verify the recollections of former officials is impossible… Until Western scholars get access to documents that will corroborate the claims of Soviet oral history participants, the best we can do is speculate, as we have in the past, about Soviet motives and actions in events like the Cuban missile crisis.[1]

This paper hypothesizes that two overlapping basic factors contributed substantially to the avoidance of a direct armed conflict between the Soviet Union and the United States. First, these two superpowers enjoyed political and military preeminence in relation to their rivals, allies, security partners, and neutral and nonaligned states. Second, they both had a profound fear of nuclear war. Despite the political ambitions expressed by both superpowers throughout the Cold War, as well as their risk-taking in crises, their essential orientation was cautious and directed toward the avoidance of nuclear war, especially after the 1962 Cuban missile crisis. This led to a de facto respect for each other's sphere of political influence, particularly in the most sensitive regions of confrontation – Europe and Northeast Asia.

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[1] Mark Kramer, "Remembering the Cuban Missile Crisis: Should We Swallow Oral History?", *International Security*, Vol. 15, No. 1, Summer 1990, pp. 214, 216.

The simple fact of the preeminence of the United States and the Soviet Union in military power and strategic resources in relation to other states during the Cold War period helps to explain their avoidance of a general war. While there were many wars and political upheavals, including "proxy" conflicts with superpower involvement, political leaders in Moscow and Washington were for the most part afraid of events getting out of hand and leading to a nuclear war. Wars between smaller powers were numerous during the Cold War, and U.S. and Soviet forces fought in various conflicts – above all, the Korean and Vietnam wars for the United States, and Afghanistan for the Soviet Union. However, there could be no general war without the direct participation of both superpowers. As the British historian Martin Wight assessed the situation in 1972, "These two Powers stand to their respective allies, not as Castlereagh's England stood to the other Powers of the grand alliance against Napoleon, but as the Roman Republic stood to the Hellenistic monarchies from the mid-second century B.C."[2] The weakness of potential rivals to the Soviet Union and the United States – particularly China – was probably a source of strategic stability during the Cold War. Some of Mao Zedong's policies, such as the Great Leap Forward and the Cultural Revolution, gravely weakened China and slowed its economic development and therefore protracted U.S.-Soviet bipolarity.

Scholars have advanced various theories to explain how and to what extent the United States and the Soviet Union came to prize and institutionalize measures supporting strategic stability – in the sense of war avoidance – during the Cold War. Alexander George and others have, for example, written about a learning process in which Moscow and Washington developed communications channels such as the "hot line," agreements on dealing with incidents at sea and elsewhere, and "rules of the road" about acceptable boundaries for behavior in crises.[3] It can also be argued that the USSR and the United States promoted strategic stability when they adopted principles of prudent management of nuclear forces, such as personnel reliability programs, robust command and control systems, and safety and security measures.

The contribution of the SALT and START negotiations to U.S.-Soviet strategic stability and war-avoidance is more debatable. Avis Bohlen determined that the negotiations process did not provide all the strategic stability benefits sought by the United States, but that its ultimate political contribution was positive. "It did not end or even slow the arms race, either quantitatively or qualitatively… It is sometimes claimed that it helped to stabilize relationships between the two superpowers, but this claim does not really withstand scrutiny." Indeed, the negotiations revealed that the United States and the Soviet Union did not agree on a concept of strategic stability to embody in treaty provisions. As Bohlen observed, despite

[2] Martin Wight, "The Balance of Power and International Order", in Alan James (ed.), *The Bases of International Order: Essays in Honour of C.A.W. Manning*, London, Oxford University Press, 1973, pp. 114-115.
[3] Alexander L. George, Philip J. Farley, and Alexander Dallin (eds.), *U.S.-Soviet Security Cooperation: Achievements, Failures, Lessons*, New York, Oxford University Press, 1988.

adhering to the ABM Treaty, "the Soviets never really bought into MAD [mutual assured destruction], at least in the sense it was understood by American strategists." Bohlen nonetheless concluded that the negotiations had positive political consequences, such as "reassuring… publics," reducing "nuclear anxiety," and providing "a modicum of transparency and predictability."[4]

The behavior and declarations of U.S. and Soviet leaders suggest strongly that the risks of highly destructive nuclear operations contributed to the prevention of major-power war and hence underpinned a form of strategic stability. The stalemate did not rule out fears of coercion in crises. Influential U.S. experts such as Paul Nitze argued in the late 1970s that the Soviet Union's superiority in intercontinental counterforce strike capabilities and other types of forces might enable it to exert escalation dominance in a confrontation with the United States.[5]

In the early to mid-1980s, George Shultz and other U.S. and allied officials publicly suggested that Soviet nuclear strength could grant Moscow a measure of assurance in risk-taking.[6] The Soviets did not, however, behave as recklessly or aggressively as Nitze, Shultz, and other Western observers feared that they might; and this seems to have been mainly because of the Soviet determination to avoid nuclear war.

Both sides became increasingly cautious about risk-taking that could lead to direct hostilities, particularly after they came to the brink of nuclear war in the 1962 Cuban missile crisis. As Khrushchev wrote,

> [i]n our estimation the Americans were trying to frighten us, but they were no less scared than we were of atomic war. We hadn't had time to deliver all our shipments to Cuba, but we had installed enough missiles already to destroy New York, Chicago, and the other huge industrial cities, not to mention a little village like Washington. I don't think America had ever faced such a real threat of destruction as at that moment. The Americans knew that if Russian blood were shed in Cuba, American blood would surely be shed in Germany. You'd have

[4] Avis Bohlen, "Arms Control in the Cold War", *Footnotes: The Newsletter of the Foreign Policy Research Institute's Wachman Center*, Vol. 14, No. 7, May 2009, available at: http://www.fpri.org/footnotes/1407.200905.bohlen.armscontrolcoldwar.html.

[5] Paul H. Nitze, "Assuring Strategic Stability in an Era of Détente", *Foreign Affairs*, Vol. 54, No. 2, January 1976; and Paul H. Nitze, "The Relationship of Strategic and Theater Nuclear Forces", *International Security*, Vol. 2, No. 2, Autumn 1977.

[6] George Shultz, *Modernizing U.S. Strategic Forces*, Current Policy, No. 480, Washington, Bureau of Public Affairs, U.S. Department of State, 20 April 1983, p. 2: "My concern is that the growth of Soviet strategic power can… have an important effect on the Soviets' willingness to run risks in a regional conflict or crisis… If the Soviets can strike effectively at our land-based ICBMs while our land-based deterrent does not have comparable capability, the Soviets might believe that they have a significant advantage in a crucial dimension of the strategic balance; they could seek to gain political leverage by a threat of nuclear blackmail."

> thought that war was inevitable. But both sides showed that if the desire to avoid war is strong enough, even the most pressing dispute can be solved by compromise.[7]

There is solid evidence that Soviet as well as U.S. leaders feared nuclear war. In 1992 General Colonel Andrian Danilevich described an exercise in 1972 in which the General Staff presented the results of an analysis of a hypothetical U.S. attack against the USSR:

> Brezhnev and Kosygin were visibly terrified by what they heard… Brezhnev was actually provided a button in the exercise and was to "push the button" at the appropriate time. Marshal Grechko was standing next to him and I next to Marshal Grechko. When the time came to push the button, Brezhnev was visibly shaken and pale and his hand trembled and he asked Grechko several times for assurances that the action would not have any real-world consequences. "Andrei Antonovich, are you sure this is just an exercise?"[8]

Some key Soviet leaders in the early 1980s formed a mistaken impression that the United States and its allies might be preparing to attack the USSR. The Soviet fears arose during the same period – the late 1970s and early 1980s – that some U.S. experts and officials were anxious about a "window of vulnerability" to a hypothetical Soviet "first strike" against U.S. ICBMs.

The gravity of the "war scare" of the early 1980s must, however, be put in perspective. As Gordon Barrass noted about the incident that has often been cited as the point of maximum peril, the NATO Able Archer exercise in November 1983: "At dawn on November 11, the command post for *Able Archer* signaled the order for nuclear missiles to be launched against targets in Eastern Europe and the Soviet Union. Soviet Military Intelligence did not flinch, because they knew they were monitoring an exercise."[9] In other words, while the Soviets were closely monitoring the activities of NATO (and NATO nations) during a period of heightened tension, they understood what was happening and they were not on the verge of undertaking a preemptive nuclear attack.

The Soviet leadership had to contend with the atrophy of faith in Marxist-Leninist ideology, widespread social demoralization, the frustrations of the non-Russian nationalities in the Soviet Union, and the restiveness of the Warsaw Pact allies. The Soviet leadership became more risk-averse and inward looking, and often found its hands full with maintaining internal

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[7] Nikita Khrushchev, *Khrushchev Remembers*, translated and edited by Strobe Talbott, Boston, Little, Brown and Company, 1970, pp. 496, 499-500.
[8] Danilevich quoted in John G. Hines (senior author), Ellis Mishulovich, and John F. Shull, *Soviet Intentions 1965-1985,* Vol. II: *Soviet Post-Cold War Testimonial Evidence,* McLean, The BDM Corporation, 22 September 1995, p. 27.
[9] Gordon S. Barrass*, The Great Cold War: A Journey Through the Hall of Mirrors*, Stanford, Stanford University Press, 2009, p. 301.

political order and its alliance system. Some clients (such as Cuba, North Korea, and Vietnam) probably constituted a net burden on the Soviet economy. By the 1980s this was the case with Moscow's Warsaw Pact allies in Eastern Europe as well. As simple regime-maintenance and sustaining the USSR's position in the competition with the United States and its allies became greater challenges for the Soviet leadership, undertaking a conflict that might lead to nuclear war became even less plausible. Soviet leaders were increasingly preoccupied in the 1980s with the comparative weakening of their position.

American theories of stability during the Cold War

During the 1960s some U.S. analysts and policy-makers went beyond the basic and widely endorsed strategic stability argument that the development of secure second-strike capabilities would be prudent, given the risk that a high level of reliance on vulnerable forces might invite a disarming surprise attack or attract preventive strikes in a crisis.[10] They posited strategic stability models that would, they maintained, diminish possible incentives to strike first in a crisis ("first strike stability," often regarded as virtually synonymous with "crisis stability") and remove incentives to invest in strategic defenses or additional offensive strike forces ("arms race stability"). The origins of such strategic stability models appear to reside in the concept of "assured destruction."

Secretary of Defense Robert McNamara and his colleagues in the 1960s devised theories of "assured destruction" as a force-sizing tool – a means to ensure that Washington would have enough nuclear forces "to deter a deliberate nuclear attack upon the United States or its allies by maintaining at all times a clear and unmistakable ability to inflict an unacceptable degree of damage upon any aggressor, or combination of aggressors – even after absorbing a surprise first strike."[11] How was "unacceptable" damage defined? According to Alain Enthoven and Wayne Smith, who played leading roles in defining this policy in the Department of Defense:

> After careful study and debate, it was McNamara's judgment, accepted by Presidents Kennedy and Johnson, and not disputed by the Congress, that the ability to destroy in retaliation 20 to 25 percent of the Soviet population and 50 percent of its industrial capacity was sufficient. Such a level of destruction would certainly represent intolerable punishment to any modern industrialized nation.[12]

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[10] Albert Wohlstetter gave classic expression to this argument in his article, "The Delicate Balance of Terror", *Foreign Affairs*, Vol. 37, No. 2, January 1959.

[11] Alain C. Enthoven and K. Wayne Smith, *How Much Is Enough? Shaping the Defense Program 1961*-1969, New York, Harper and Row, 1971, p. 174. Enthoven served under McNamara as the Assistant Secretary of Defense for Systems Analysis.

[12] *Ibid.*, p. 175.

Having decided what would deter the United States, Enthoven and Smith projected this definition of deterrence requirements onto the Soviet Union and formulated a model of strategic stability through the sustained mutual vulnerability of the U.S. and Soviet populations to nuclear attack:

> [I]f deterrence is also the Soviets' objective (as the available evidence has consistently and strongly suggested), we would expect them to react in much the same way to any effort on our part to reduce the effectiveness of their deterrent (or assured-destruction) capability against us… This "action-reaction" phenomenon is central to all strategic force planning issues as well as to any theory of an arms race.[13]

Abstract models of strategic stability built on "assured destruction" (AD) assumptions gained influential supporters in the United States during the 1960s and subsequent decades. As William Van Cleave has observed,

> Originally only one of several analytical tests to aid judgment on the adequacy of forces, AD became the principal criterion, then the dominant strategic concept of the American defense community, and finally a philosophical base for theories of mutual deterrence, strategic stability, and strategic arms limitation… The corollary to this presumed "action-reaction" determinism was inaction-inaction. If the US were to refrain from challenging a Soviet AD capability, the Soviets would be satisfied and would have no need to build up their forces further.[14]

The concept of "assured destruction," which soon transmuted into a strategic stability model of "mutual assured destruction," had a potent and enduring effect on U.S. policy-making. According to Thomas Wolfe, "Although amended criteria for strategic force size and design began to be advanced in 1974 after James R. Schlesinger became secretary of defense…, it seems fair to say that throughout SALT I and at least the first part of SALT II the mutual assured destruction concept formed the central axis of consensus for the making of major strategic posture and arms control decisions in the United States."[15] Indeed, this concept of strategic stability influenced the thinking of some U.S. analysts and policy-makers throughout the rest of the Cold War.

Reducing the United States and the Soviet Union to equivalent abstractions

As Michael Nacht has pointed out, the "assured destruction"-based concept of strategic stability reduced the United States and the Soviet Union to two

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[13] *Ibid.*, pp. 175-176.
[14] William R. Van Cleave, "The US Strategic Triad", in Ray Bonds (ed.), *The US War Machine,* New York, Crown Publishers, 1978, pp. 61-62.
[15] Thomas W. Wolfe, *The SALT Experience,* Cambridge, Ballinger Publishing Company, 1979, p. 108.

"A and B" abstractions.[16] Nacht's account is not a caricature, but a truthful report of the approach taken by many U.S. analysts from the late 1960s to the late 1980s. In 1988, for example, three Rand Corporation experts analyzed "conditions of first-strike stability and instability" and presented the following propositions:

> Two conditions, operating together, might in a crisis create pressure to strike first: (1) the perception by the leader of Country A of the likelihood that Country B will launch a first strike if he waits and (2) the extent to which the expected (potential) cost to Country A associated with going second exceeds its cost of going first. Country B would simultaneously weigh these two factors... If the leader of Country A perceived that Country B was tempted to strike first, he would feel pressured to strike first to avoid the worse consequence of going second. The leader of Country B would then feel pressured to strike first so as to exploit the opportunity while it still existed. Under these circumstances, first-strike instability could arise in a crisis when either country perceived the other as being tempted to strike first… If, in contrast, both sides possessed highly survivable strategic offensive forces and if strategic defensive forces were not really effective, large numbers of U.S. and Soviet weapons could survive the other's first strike and penetrate to enemy targets in retaliation.[17]

The dominant prescription was to seek "first-strike stability" by acquiring highly survivable second-strike forces suited to attacking the other side's population while eschewing capabilities that might limit damage to one's own society. "Arms race stability" was expected to obtain when neither side had a motive to build up its offensive strike forces, owing to a low level of authorized strategic defenses.

Capabilities that might limit damage by destroying the other side's forces before they could be launched, such as highly accurate ICBMs and SLBMs with MIRVed warheads, were stigmatized by many U.S. observers as "destabilizing." SLBMs were seen as stabilizing because they provided a secure second-strike capability. Many U.S. commentators deplored the pursuit of ballistic missile defenses intended to offer protection to U.S. society against ICBMs and SLBMs as "destabilizing."

In order to uphold this model of strategic stability requirements, the United States at times exercised restraint in making accuracy improvements. In 1970, John Foster, then Director of Defense Research and Engineering in the Department of Defense, testified that he had deliberately cancelled research that might have made U.S. MIRVs more

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[16] Michael Nacht, "The Politics: How Did We Get Here?", *Washington Quarterly*, Vol. 23, No. 3, Summer 2000, p. 88.

[17] Glenn A. Kent, Randall J. DeValk, and David E. Thaler, *A Calculus of First-Strike Stability (A Criterion for Evaluating Strategic Forces)*, N-2526-AF, Santa Monica, Rand Corporation, June 1988, p. 3.

accurate and thus better suited to holding Soviet ICBM silos and other hardened targets at risk. “My purpose was to make it absolutely clear to the Congress and, hopefully, to the Soviet Union, that it is not the policy of the United States to deny the Soviet Union their deterrent capability.”[18]

As Harold Brown, then Secretary of Defense, put it in 1979, “In the interests of stability, we avoid the capability of eliminating the other side’s deterrent, insofar as we might be able to do so. In short, we must be quite willing – as we have been for some time – to accept the principle of mutual deterrence, and design our defense posture in light of that principle.”[19]

Strategic stability models based on mutual vulnerability were attractive to many U.S. analysts and policy-makers for multiple reasons. Aside from the financial savings derived from foregoing damage-limiting capabilities, the models were elegant, simple, and reassuring. They spared U.S. analysts the trouble of doing empirical research about specific countries, and enabled them to focus on a factor – force structures – that could be observed and subjected to mathematical analysis. Abstract game theory models seem to have appealed to U.S. analysts with professional backgrounds in economics or mathematics.

The United States attempted through arms control negotiations and other means to persuade the Soviet leadership to embrace the logic of stability through mutual vulnerability but had little success in this endeavor. Moscow accepted the ABM Treaty in 1972 and agreed to amend it in 1974 (reducing the number of treaty-authorized sites for strategic ABM interceptor complexes from two to one), but the Soviet Union continued to invest much more than the United States in strategic defenses, active and passive.

Soviet and U.S. behavior demonstrated that the two superpowers were not simply countries “A” and “B.” A strong strain in U.S. thinking argued for a cooperative U.S.-Soviet effort to construct similar postures that would, according to U.S. analytical models, support strategic stability. In contrast, the dominant view in the Soviet government and military saw instability as deriving fundamentally from political factors rather than force structures. As Kerry Kartchner has noted, “Instability, in the traditional Soviet view, is primarily a function of the inherent hostility and political tensions between different types of social systems, or classes of states.”[20]

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[18] Foster testimony on 4 June 1970 in U.S. Senate, Committee on Foreign Relations, Subcommittee on Arms Control, International Law and Organization, *ABM, MIRV, SALT, and the Nuclear Arms Race*, Hearing, 91st Congress, 2nd Session, Washington, U.S. Government Printing Office, 1970, p. 509.

[19] *Report of Secretary of Defense Harold Brown to the Congress on the FY 1980 Budget, FY 1981 Authorization Request and FY 1980-1984 Defense Programs*, Washington, U.S. Government Printing Office, 1979, p. 61.

[20] Kerry M. Kartchner, *Negotiating START: Strategic Arms Reduction Talks and the Quest for Strategic Stability*, New Brunswick and London, Transaction Publishers, 1992, pp. 8-9.

In strategic arms control negotiations the Soviets made clear their interest in preserving certain unilateral advantages, particularly in ICBM-based counterforce capabilities. According to Thomas Wolfe, the SALT negotiations from 1969 to 1979 revealed

> the lack of a common conception of strategic stability and of what might be required to preserve it… Although the Soviets could be judged sensitive to the survivability issues as it concerned their own forces, they apparently again [in SALT II], as in SALT I, could not be moved to agree that *mutual* survivability of offensive forces would be good for the security of both parties.[21]

The same pattern persisted in the START negotiations from 1982 to 1991. As a result, in Kartchner's words, "The net effect has been to preserve and protect a position of Soviet dominance in those counterforce weapons best suited for preemptive disarming attacks."[22]

Simple models, complex realities of competition

While many American strategic analysts in the 1960s and 1970s were preoccupied with devising doctrines of strategic stability through mutual vulnerability, Soviet political and military leaders did not accept U.S. theories of stability via "mutual assured destruction" capabilities as guidance for their own force development and strategic planning. According to perhaps the most authoritative and comprehensive study of the U.S.–Soviet strategic arms competition, the once highly classified analysis conducted for the U.S. government by Ernest May, John Steinbruner and Thomas Wolfe,

> *Though the United States and the Soviet Union both came to conceive of strategic forces as having the function of war prevention, their views concerning these forces continued to be different, the U.S. emphasizing manifestation of capability for inflicting unacceptable damage on an adversary's homeland, the Soviets emphasizing manifestation of capability for fighting a war*… The Soviets… appear to have had a different approach, the essence of which was that the better the armed forces were prepared to fight a nuclear war, and the society to survive its effects, and the more clearly the adversary understood this, the more he would be effectively deterred… [T]he equation of effective deterrence with war fighting capability made the Soviet leadership continuously unreceptive to the doctrine of "mutual assured destruction.[23]

[21] Wolfe, *The SALT Experience*, *op. cit.*, pp. 106-107; emphasis in the original.
[22] Kartchner, *Negotiating START*, *op. cit.*, p. 283.
[23] Ernest R. May, John D. Steinbruner, and Thomas W. Wolfe, *History of the Strategic Arms Competition, 1945-1972*, edited by Alfred Goldberg, Washington,

Rather than endorsing a concept of mutual vulnerability, Soviet leaders sought to reduce their state's vulnerability to nuclear coercion and to minimize their losses in the event of conflict by pursuing damage-limiting capabilities – hard-target-kill counterforce capabilities that U.S. assessments deemed considerably more potent than those of the United States, plus strategic defenses much more extensive than their U.S. counterparts, including air defenses, civil defenses, and deep underground shelters for leadership cadres.

The damage-limiting capabilities probably did not give the Soviets much confidence that they could avoid catastrophic losses in the event of a nuclear war with the United States. As David Holloway observed, the Soviets "have tried to prepare for nuclear war, and they would try to win such a war if it came to that. But there is little evidence to suggest that they think victory in a global nuclear war would be anything other than catastrophic."[24] Indeed, the catastrophic nature of nuclear war was a theme in Soviet military doctrine from the late 1960s to the end of the USSR in 1991.

While both the Soviet Union and the United States sought deterrence and the prevention of nuclear war, they took a different approach in their preparations for the contingency of deterrence failure. During the decade from 1972 (the conclusion of the ABM Treaty) to 1983 (President Reagan's Strategic Defense Initiative speech) the Soviet Union probably invested much more in strategic defense capabilities (including air defenses and passive defenses as well as missile defenses) than did the United States, and continued its high levels of visible investment in strategic defense capabilities such as air defenses into the late 1980s. Assessing the cost of these investments with any precision is, however, difficult. The Soviets did not publish financial data with regard to military spending; such information was kept highly secret. The information about Soviet military spending that has subsequently become available is incomplete, and the authenticity and reliability of some sources is in question. A more fundamental problem regarding data on Soviet military spending is that the Soviet economy was a centralized command economy.

U.S. government "dollar cost" estimates suggested only what it might have cost the United States to build and operate specific Soviet capabilities. In 1975, for example, the Director of the CIA testified that,

> As for strategic defense forces, the ABM and similar systems, the U.S.S.R. has traditionally maintained much larger ones than the United States… The cumulative dollar costs of Soviet programs over the 1964-1974 period are four times U.S. spending, the biggest difference being in SAM [surface-to-air missile] and fighter-interceptor programs. In 1974, the dollar

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Historical Office, Office of the Secretary of Defense, March 1981, pp. 819-820; emphasis in the original.

[24] David Holloway, *The Soviet Union and the Arms Race*, New Haven, Yale University Press, 1983, p. 179.

> costs of Soviet strategic defense programs amount to almost eight times U.S. expenditures for strategic defense.[25]

The only type of strategic defense capability subject to treaty constraints during the Cold War was ballistic missile defense, restricted by the 1972 ABM Treaty. It is noteworthy that the initial Soviet reactions to U.S. offers to negotiate constraints on ballistic missile defenses, as articulated by Prime Minister Aleksei Kosygin in 1967, were negative. As Aleksandr' Savel'yev and Nikolay Detinov have noted, in the 1960s

> notions such as "strategic stability," "nuclear deterrence," and so on, were, at that time, still foreign to the Soviet leadership... Soviet strategic offensive arms of all classes, as well as its ABM system, fully conformed to the then prevailing Soviet military doctrine which aimed at *winning* a nuclear war... Similarly, when the SALT I talks were subsequently opened with the United States in November of 1969, the issue of strengthening strategic stability was not one that formed a cornerstone of the Soviet position.[26]

The Soviet decision to approve treaty constraints on BMD deployments and associated activities seems to have formed gradually as three considerations came into clearer focus at that time: the disappointing performance of Soviet BMD systems, the superior technical prospects of U.S. BMD programs, and the continuing domestic political survival of U.S. BMD programs. The Soviet leadership appears to have endorsed the ABM Treaty mainly as a means to discourage the United States from investing in missile defense while the Soviet Union carried forward its research and development efforts in missile defense, continued investing in other forms of strategic defense, and expanded its offensive strike capabilities.

Evidence for the thesis that the Soviets accepted the ABM Treaty as a means to uphold a theory of strategic stability based on agreed mutual vulnerability is limited and open to debate.[27] For example, the conclusions presented by Aleksandr' Savel'yev and Nikolay Detinov on the Soviet decision to accept the ABM Treaty proposed by the United States are not entirely consistent. In one passage they emphasized disappointment with Soviet BMD technology as a more important factor than American "strategic

[25] Testimony of William E. Colby, Director, Central Intelligence Agency, 18 June 1975, in *Allocation of Resources in the Soviet Union and China – 1975*, Hearings before the Subcommittee on Priorities and Economy in Government of the Joint Economic Committee, Congress of the United States, 94th Congress, 1st session, Part 1, Washington, U.S. Government Printing Office, 1975, p. 30.

[26] Aleksandr' G. Savel'yev and Nikolay N. Detinov, *The Big Five: Arms Control Decision-Making in the Soviet Union*, trans. by Dmitriy Trenin and ed. by Gregory Varhall, Westport, Praeger Publishers, 1995, pp. 2, 3, 7; italics in the original.

[27] David S. Yost, *Soviet Ballistic Missile Defense and the Western Alliance*, Cambridge, Harvard University Press, 1988, pp. 88-102 and *passim*.

stability" arguments, while in another they highlighted these arguments as a decisive consideration.[28]

According to William Odom's report of his interview exchanges with Detinov, "The U.S. proposal for an ABM treaty... came as a pleasant surprise. By ending the U.S. ABM program, it would free the Soviets from engaging in simultaneous competition in both strategic offensive and defensive systems and permit Soviet ICBM programs to move ahead on schedule." Odom wrote that Detinov held that "the logic of U.S. views on... how to achieve strategic 'stability' played no role at all in the Soviet acceptance of the ABM treaty."[29]

While the extent to which U.S. strategic stability theories may have influenced the Soviet decision to accept the ABM Treaty is less than entirely clear, the treaty plainly enabled the Soviets to avoid an expensive competition in a domain of U.S. technological advantage. By relieving the Soviets of a resource dilemma, the ABM Treaty allowed them to invest more in other capabilities, including ICBMs. The counterforce capabilities resident in their ICBM force might enable them to achieve greater damage-limiting results than might be available through Soviet missile defenses.

In short, the Soviet political-military leadership appears to have rejected the "mutual assured destruction" reasoning advanced by Robert McNamara and his followers as the desirable foundation of strategic stability, including "crisis stability" and "arms race stability." As John Hines and his colleagues found in interviews with former senior Soviet military officers and civilian officials,

> Soviet strategists recognized that deterrence was, to some extent, mutual, because each side was capable of launching a retaliatory strike and of inflicting unacceptable damage on the other. They, nevertheless, considered their nuclear power the only guarantee of security from war, and they never examined the question of mutually assured destruction as a condition they should accept, much less pursue… They rejected the desirability of mutual vulnerability, so they attempted to acquire the capacity to limit damage.[30]

Moreover, according to these interviews, the Soviets did not accept the assumption – popularized in U.S. expert and official circles by McNamara and his followers – that strategic stability should be based on "parity," an equivalence in intercontinental offensive and defensive capabilities. Instead of being satisfied with the "parity" that U.S. officials and

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[28] Savel'yev and Detinov, *The Big Five, op. cit.*, pp. 21-22.
[29] William E. Odom, *The Collapse of the Soviet Military,* New Haven and London, Yale University Press, 1998, p. 71.
[30] John G. Hines (senior author), Ellis Mishulovich, and John F. Shull, *Soviet Intentions 1965-1985,* Vol. I: *An Analytical Comparison of U.S.-Soviet Assessments During the Cold War*, McLean, The BDM Corporation, 22 September 1995, pp. 16-17, 21.

experts saw the Soviet Union gaining in the late 1960s, a "parity" ostensibly codified in the 1972 SALT treaties, Moscow appears to have seen Soviet superiority as the proper basis for stability. From the perspective of highly placed Soviet officers and officials, the balance with the United States was not as stable as many of their U.S. counterparts assumed; and in their view Soviet superiority would have a stabilizing effect that would enhance the USSR's security. [31]

Soviet behavior in the 1970s gave many American observers the impression that the USSR was seeking superiority. This behavior did not conform to U.S. "arms race stability" theories holding that minimizing strategic missile defenses through the ABM Treaty would remove incentives to build offensive strike forces and to invest in non-ABM forms of strategic defense. As Secretary of Defense Harold Brown observed in 1979,

> Unfortunately, longer-term stability is not fully assured, and the future competition in strategic capabilities is likely to become more dynamic than need be the case... [T]he main impulse for this dynamism comes from the Soviet Union in the form of a large ICBM force with an expanding hard-target-kill capability, a much publicized civil defense effort, and the likelihood of significantly upgraded air defense capabilities… More troublesome is the degree of emphasis in Soviet military doctrine on a war-winning nuclear capability, and the extent to which current Soviet programs are related to the doctrine.[32]

In other words, the "arms race stability" and "strategic stability" theories that had led the United States to propose the SALT I agreements, including the ABM Treaty, failed to account for Soviet behavior. This failure was one of the factors (among others, including the Soviet invasion of Afghanistan) that convinced the Carter Administration of the need to support a significant increase in defense spending and improvements in the survivability of U.S. strategic nuclear forces – a policy direction continued in the early 1980s by the Reagan Administration.

Moreover, the Soviets frequently tested the ABM Treaty's boundaries, and this led to numerous compliance disputes. In 1989 the

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[31] "Soviet strategists considered the nuclear balance to be unstable, because technological advances and increases in the size of the arsenal could significantly augment the power of one side relative to the other, thereby upsetting the balance... The Soviets felt that the only truly stable nuclear situation was one in which one side had clear superiority over the other. To be both secure and stable, the imbalance had to be in the Soviets' favor. Therefore, throughout this period the Soviets attempted to gain strategic superiority over the U.S., with the primary goal not of ensuring victory in a nuclear war (which the informed military leadership considered unattainable in any meaningful sense), but of enhancing their general security, to include the security of Soviet influence in Europe and around the globe." Hines *et al.*, *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, p. 1.

[32] *Report of Secretary of Defense Harold Brown to the Congress on the FY 1980 Budget*, *op. cit.*, pp. 79-80.

Soviet Foreign Minister, Eduard Shevardnadze, admitted, as Washington had long charged, that the USSR's Krasnoyarsk radar was constructed in violation of the ABM Treaty.[33] Many American officials and experts had asserted in the early 1970s that the 1972 ABM Treaty would stabilize the arms competition by removing any incentive for the Soviet Union to expand its ICBM forces, because the strict limits on U.S. BMD deployments would leave the population of the United States vulnerable to Soviet attack. However, Soviet force procurement did not conform to mainstream U.S. expectations. The Soviet Union dramatically increased its ICBM capabilities in the 1970s.

The "action-reaction" model of the arms competition failed to account for Soviet behavior because it disregarded the autonomy of Soviet decision-making. Vojtech Mastny has in this regard emphasized the "ideological preconceptions" of Soviet decision-makers and their confidence in "the supposedly 'scientific' nature of Soviet policy" as factors in this autonomy in relation to U.S. choices.[34]

John Hines and his colleagues also found considerable autonomy in Soviet arms competition behavior. However, they attributed the Soviet unresponsiveness to U.S. force posture decisions not to Communist ideological principles, but to internal bureaucratic factors and the power accumulated by key personalities in the organizational structure.[35]

The complex mix of causative factors within the USSR appears to have included personalities and bureaucratic imperatives as well as ideology and strategy, and to have been somewhat insulated from the effect of U.S. activities. The autonomy of Soviet policy was long ago evident to scholars who looked beyond the "action-reaction" model to empirical evidence. In 1974-1975 Albert Wohlstetter demonstrated in a series of studies the inadequacy of simple "action-reaction" models of U.S.-Soviet competition in strategic nuclear capabilities.[36]

The U.S. and Soviet force postures were not mirror-image replicas of each other. The United States, for example, maintained a larger intercontinental bomber force than the Soviet Union from the late 1950s to the end of the Cold War, while Moscow invested more than Washington in

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[33] Eduard A. Shevardnadze quoted in Bill Keller, "Radar a 'Violation,'" *New York Times*, 24 October 1989, p. A1.

[34] Vojtech Mastny, "Imagining War in Europe: Soviet Strategic Planning", in Vojtech Mastny, Sven G. Holtsmark, and Andreas Wenger (eds.), *War Plans and Alliances in the Cold War: Threat Perceptions in the East and West,* London and New York: Routledge, 2006, p. 28.

[35] Hines *et al*., *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, pp. 49, 71.

[36] Albert Wohlstetter, "Is There a Strategic Arms Race?", *Foreign Policy*, No. 15, Summer 1974; "Rivals, But No 'Race'", *Foreign Policy*, No. 16, Fall 1974; and "Optimal Ways to Confuse Ourselves", *Foreign Policy*, No. 20, Fall 1975. See also: Andrew W. Marshall, "Arms Competitions: The Status of Analysis," in Uwe Nerlich (ed.), *The Western Panacea: Constraining Soviet Power through Negotiation*, Vol. 2 of *Soviet Power and Western Negotiating Policies,* Cambridge, Ballinger Publishing Company, 1983, pp. 3, 7.

high throw-weight ICBMs, with larger numbers of warheads, from the late 1960s to the end of the Cold War. The United States effectively abandoned civil and air defenses in the 1960s.

The United States developed capabilities, articulated declaratory strategies, and undertook planning and targeting beyond the requirements of the "assured destruction" criteria defined by McNamara and his colleagues in the late 1960s. While Washington invested much less than Moscow in strategic defenses, particularly prior to the initiation of the SDI, the United States developed counterforce capabilities and options for limited nuclear strikes. Indeed, even McNamara saw merits in developing options for limited nuclear operations. The landmarks in the Cold War development of U.S. declaratory and operational policy complementing and looking beyond stability based on U.S.-Soviet mutual vulnerability included McNamara's "counterforce" or "no cities" strategy in 1961-1962, Secretary of Defense James Schlesinger's quest for "options" and "escalation control" in 1974, Secretary of Defense Harold Brown's "countervailing strategy" in 1980, and Secretary of Defense Caspar Weinberger's interest in preparedness for potential "protracted" nuclear conflict in 1982.

Moreover, on at least some occasions, the United States attempted to pursue a "competitive strategies" approach. This approach included efforts to exploit the Soviet tendency to invest heavily in strategic defenses, including air defenses, and thereby limit the amount of resources available to the Soviets for spending on offensive strike forces. It is not clear why the Soviets continued to sustain their costly air defense effort despite Washington's confidence in the U.S. ability to defeat and penetrate Soviet air defenses. Accepting their vulnerability would have been consistent with first-strike stability models. The Soviets were, however, evidently trying to diminish their vulnerability to U.S. (and third-party) bomber aircraft.

A related problem with "first-strike stability" theory is that its proponents assumed that, to quote Glenn Kent and David Thaler, "The United States and the Soviet Union share the national security objective of first-strike stability, and maintaining it requires joint efforts and cooperation. Because first-strike stability is a shared goal, each country should spend its resources to make its own strategic nuclear forces invulnerable, rather than to make the other's strategic nuclear forces vulnerable."[37]

By this logic, both the Soviet Union and the United States should have seen the merits of building strategic nuclear force postures with similar characteristics. This was, however, clearly not the case during the late 1970s and early 1980s, when the Soviet Union dramatically exceeded U.S. expectations in the construction of accurate high-throw-weight ICBMs capable of threatening a substantial proportion of U.S. strategic nuclear forces. As Alexei Arbatov and Vladimir Dvorkin wrote in 2006, "In the Soviet Union in the late 1970s and early 1980s, the strategic nuclear force

[37] Glenn A. Kent and David E. Thaler, *First-Strike Stability: A Methodology for Evaluating Strategic Forces*, R-3765, Santa Monica, Rand Corporation, August 1989, pp. 47-48.

corresponded more closely to the model of forces for war fighting (about 70 percent of warheads were on silo-based ICBMs with MIRVs), although at the political level deterrence was placed at the forefront."[38]

The Soviets behaved with greater restraint in the late 1970s and early 1980s than Paul Nitze and other U.S. "window of vulnerability" theorists feared that they might. However, the Soviets did not reason and behave as U.S. "first-strike stability" theorists assumed. The differences in outlook became clear in U.S.-Soviet nuclear arms control negotiations, including the last major treaty concluded before the Soviet Union collapsed. As Kerry Kartchner has shown in his analysis of the negotiating record, the START treaty signed by the Soviet Union and the United States in July 1991 represented a compromise between contrasting concepts of stability.

> Both sides in START endorsed improving stability as a general goal, but could not agree on what stability means... For the Soviets, strategic stability in military terms depends heavily on preserving counterforce dominance, and is a function of their confidence in achieving wartime objectives. For example, the Soviets argued in START that SS-18s are actually stabilizing because their counterforce potential discourages prospective adversaries from exploiting crises in which those adversaries might otherwise be tempted to attack the Soviet Union. On the other hand, the United States considers the SS-18 to be the most destabilizing weapon in existence because it is capable of disarming first-strike attacks, yet is itself vulnerable to such attacks and must therefore be launched preemptively... Furthermore, the very weapons the United States claimed were *stabilizing* (cruise missiles, bombers, and sea-launched ballistic missiles) were denounced by the Soviets as *destabilizing*.[39]

John Hines and his colleagues reached similar conclusions on the basis of interviews with former Soviet officials.

> Nor did the Soviets build weapons principally with the aim of maintaining a stable strategic balance, because they considered the strategic competition to be inherently unstable and dynamic. They did, however, build weapons that credibly could and would be used in the event nuclear war actually were to occur. In this sense, the ability to fight a war was an integral part of the Soviet deterrence strategy, despite the fact that the leadership was not sanguine about the possibility of a meaningful victory, nor even of the survival of a Soviet state.[40]

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[38] Alexei Arbatov and Vladimir Dvorkin, *Beyond Nuclear Deterrence: Transforming the U.S.-Russian Equation*, Washington, Carnegie Endowment for International Peace, 2006, p. 22.
[39] Kartchner, *Negotiating START,* pp. 277, 279; italics in the original.
[40] Hines *et al*., *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, p. 3.

It was not until 1989, near the end of the Cold War, that the United States and allied governments began to grasp the magnitude of Soviet biological weapons (BW) programs. The United States had decided that biological and toxin weapons were unnecessary and had no military value in comparison with nuclear weapons, and President Nixon had terminated U.S. BW programs in 1969. Despite the fact that the USSR would pursue biological weapons until the end of the Cold War, the Soviet Union joined with the United States and other countries to conclude the 1972 Biological and Toxin Weapons Convention (BTWC), which entered into force in 1975.

It was evidently in that same year that – in covert violation of the BTWC – the Soviet Union began to vastly expand its long-standing BW programs. These programs "grew to employ tens of thousands of workers and received the equivalent of hundreds of millions of dollars in funding." The Soviets worked on weaponizing plague, anthrax, smallpox, and other agents, and constructed huge production facilities for these agents. The Soviets also worked on "genetically altered viruses and germ weapons to devastate crops and livestock," including "plant pathogens intended to wipe out the entire American wheat supply."[41]

While many unanswered questions remain regarding Soviet biological weapons activities (for instance, whether – or to what extent – reliable cruise and ballistic missile delivery systems were developed), it is clear that Soviet BW efforts were far more extensive than imagined in the United States. The massive Soviet BW programs were hardly a sign of similarity in U.S. and Soviet thinking about how to achieve strategic stability. The possibility that the Soviets might engage in strategic-scale BW operations was not taken into account in the theories of strategic stability propounded by American analysts during the Cold War.

Another important Soviet effort that was not encompassed by U.S. conceptions of strategic stability was the USSR's development of a semi-automatic command and control system for its strategic nuclear forces. While the Soviets considered a "Dead Hand" concept for a fully automated nuclear retaliatory system, they rejected it. They instead constructed a semi-automatic system called Perimetr which provided for a pre-delegation of launch authority in the presence of certain criteria, including evidence of a large number of nuclear detonations against certain targets. However, the Perimetr system had no deterrent value during the Cold War because the Soviet authorities kept its existence secret.

Misrepresenting the likely causes of war

The mutual vulnerability model that was supposed to simultaneously provide "crisis stability," "first strike stability," and "arms race stability" was alluring and elegant, but based on false premises about a supposed similarity of doctrine and capabilities of the two antagonists and about how

[41] David E. Hoffman, *The Dead Hand: The Untold Story of the Cold War Arms Race and Its Dangerous Legacy,* New York, Doubleday, 2009, pp. 132, 134, and 473. See also pp. 14, 20, and 327-342.

decisions are made to go to war – as if force posture characteristics were the decisive factor.

The superpowers and the rest of the world did not, for example, survive the Cuban missile crisis owing to a similarity in U.S. and Soviet force posture characteristics. According to one analysis, the United States had "at least nine times as many deliverable nuclear warheads" as the Soviet Union at the time of the crisis, to say nothing of its superiority in ICBMs and SLBMs.[42] The U.S. government had for at least a year been aware of the fact that the "missile gap" fears deliberately fostered by the Soviet Union in the late 1950s were unfounded, at least as far as ICBMs were concerned.

While President Kennedy was aware of U.S. superiority in survivable nuclear strike systems, he was preoccupied with the grave risks in any nuclear war, and tried to avoid confrontation. Rather than taking the decisive military action that some advisers had recommended, he ordered what he termed "a strict quarantine on all offensive military equipment under shipment to Cuba."[43] Calling the U.S. naval action during the Cuban missile crisis a "quarantine" instead of a "blockade" was in itself significant, because a blockade would have been an act of war. According to Robert F. Kennedy, President Kennedy "reminded" congressional leaders "that once an attack began our adversaries could respond with a missile barrage from which many millions of Americans would be killed. That was a gamble he was not willing to take until he had finally and forcefully exhausted all other possibilities."[44] President Kennedy was deeply impressed by Barbara Tuchman's book *The Guns of August*,[45] an account of the miscalculations and emotional choices that contributed to the outbreak of World War I. President Kennedy told his brother, "I am not going to push the Russians an inch beyond what is necessary."[46]

Moscow and Washington appear not to have gone to war in other Cold War crises because of fear that any direct clash could lead to nuclear war, not because of shared commitment to a theory of "crisis stability" through parity and similar force postures based on survivable second-strike forces and the avoidance of strategic defenses and hard-target-kill counterforce capabilities.

In other words, the contribution of force posture characteristics to strategic stability in U.S.-Soviet relations was probably secondary to that of political factors. Each side's maintenance of secure second-strike forces

[42] Vladislav M. Zubok, "Spy vs. Spy: The KGB vs. the CIA, 1960-1962", in Woodrow Wilson International Center for Scholars, *Cold War International History Project Bulletin*, Issue 4, Fall 1994, p. 22.
[43] President John F. Kennedy, Radio and Television Report to the American People on the Soviet Arms Buildup in Cuba, 22 October 1962, available at http://www.jfklibrary.org/jfkl/cmc/j102262.htm (accessed 30 December 2010).
[44] Robert F. Kennedy, *Thirteen Days: A Memoir of the Cuban Missile Crisis,* New York, W. W. Norton, 1969, p. 54.
[45] Barbara Tuchman, *The Guns of August,* New York, Macmillan, 1962.
[46] Kennedy, *Thirteen Days*, *op. cit*., p. 127.

may have contributed to stability from the late 1960s to the end of the Cold War, however.

Disregarding the role of individual personalities in strategic decision-making

As suggested above, the Cuban missile crisis illustrated the pivotal role of individual personalities in decision-making. The Soviet and U.S. leaders made choices designed to enable them to disengage from the confrontation without an armed conflict that could have readily led to nuclear war.

In the United States, the role of powerful personalities such as Robert McNamara, who served as Secretary of Defense from 1961 to 1968, in shaping the U.S. strategic force posture has long been apparent.

Studies of primary documentary sources from Warsaw Pact archives have underscored the critical roles played by specific Soviet leaders during the Cold War. As Vojtech Mastny has pointed out,

> The close dependence of policy on the personalities of the supreme leaders, documented by new evidence, made Soviet management of military power less predictable than suggested by the image of the Cold War's bipolar stability. Stalin's reputed realism and sense of caution did not prevent him from imposing the Berlin blockade and sanctioning the aggression in Korea – blunders that gave the Cold War the military dimension it had originally lacked. Khrushchev's restless drive for innovation and desire to demilitarize the conflict did not prevent him from achieving the opposite effect, leading to the Cold War's most dangerous crises over Berlin and Cuba. And Brezhnev, though more averse to risk than either of his predecessors, tolerated out of weakness and corruption excessive militarization of Soviet power, which was wrought with unprecedented dangers.[47]

The interviews conducted by John Hines and his colleagues also indicate that "Personalities were as important, if not more important, than institutional or bureaucratic competition in determining Soviet military and force-building policy and clearly played a more immediate and decisive role than did expert analysis."[48] The examples cited include Marshal Andrei Grechko, the Minister of Defense in 1967-1976, and Mstislav Keldysh, President of the Academy of Sciences, 1961-1975.[49]

The central role of personalities in key choices about how to conduct the strategic competition – as well as how to prepare for war and

[47] Vojtech Mastny, "Introduction: New Perspectives on the Cold War Alliances", in Vojtech Mastny, Sven G. Holtsmark, and Andreas Wenger (eds.), *War Plans and Alliances in the Cold War*, *op. cit.*, p. 3.
[48] Hines *et al.*, *Soviet Intentions 1965-1985*, Vol. I, *op. cit*., p. 7.
[49] Hines *et al.*, *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, pp. 53-56.

manage crises – casts doubt on the accuracy of analyses that presume that Soviet and U.S. leaders were guided by "first strike stability" or "arms race stability" models.

An increasingly multipolar configuration of nuclear powers

Another major shortcoming of the "first strike stability" models favored by some U.S. analysts and policy-makers during the Cold War was their radical simplification of the strategic world to two powers, during an era when complex multipolar configurations of nuclear weapons states were emerging.

As early as the 1960s, U.S. officials expressed concern about how future Chinese nuclear capabilities could affect the U.S.-Soviet relationship. For example, if China used nuclear weapons against the United States, the United States would be weakened and still facing an undamaged Soviet Union. In 1969, U.S. Secretary of Defense Melvin Laird advanced this as an argument for the proposed U.S. missile defense system known as Safeguard.[50]

During the late 1970s high-level French officials drew attention to France's ability to affect the U.S.-Soviet strategic balance. The idea was that French strikes against the Soviet Union could put Moscow in a highly inferior and vulnerable position in relation to the United States, and that this ought to have an effect on Soviet thinking and thereby contribute to deterrence. In 1977 General Guy Méry, then the Chief of Staff of the Armed Forces, declared that the "damage that we could cause to either superpower would immediately place it in such a situation of imbalance regarding the other superpower that it is doubtful that either could afford to tolerate suffering that damage at any time."[51] In the same year Prime Minister Raymond Barre referred to the "decisive disequilibrium" that France could bring about in the U.S.-Soviet strategic nuclear balance as a deterrent.[52]

The British government in 1980 also expressed interest in assessing its nuclear deterrence requirements in the context of how the United Kingdom could affect the U.S.-Soviet relationship: "Indeed, one practical approach to judging how much deterrent power Britain needs is to consider what type and scale of damage Soviet leaders might think likely to leave them critically handicapped afterwards in continuing confrontation with a relatively unscathed United States."[53]

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[50] U.S. Secretary of Defense Melvin Laird, testimony before the House Appropriations Committee, *Safeguard Antiballistic Missile System*, 91st Congress, 1st session, Washington, Government Printing Office, 1969, pp. 59-60.
[51] Guy Méry, "Conférence", *Défense*, No. 9, May 1977, p. 19.
[52] Raymond Barre, "Discours prononcé au Camp de Mailly le 18 juin 1977", *Défense Nationale*, August-September 1977, p. 12.
[53] *The Future United Kingdom Strategic Nuclear Deterrent Force*, London, Ministry of Defence, July 1980, p. 5.

Soviet concern about third nuclear powers was apparent in Moscow's persistent efforts to include British and French forces in the U.S.-Soviet arms control negotiations. Soviet demands for compensation extended at times beyond Britain and France to China.[54] Soviet leaders also made clear their concern about the possible role of third powers when they terminated their nuclear technology assistance to China in the late 1950s, joined with the United Kingdom and the United States in establishing the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) in 1968, and asked the U.S. government in 1969 how Washington might react to a Soviet strike against Chinese nuclear assets.

The United States was initially critical of the French nuclear weapons program. In the early 1960s Secretary of Defense McNamara made clear his concern that French nuclear forces could complicate U.S. control over a nuclear confrontation with the Soviet Union. McNamara declared that "limited nuclear capabilities, operating independently, are dangerous, expensive, prone to obsolescence, and lacking in credibility as a deterrent."[55] American officials also deplored the French nuclear project as a diversion of resources away from conventional forces, as prone to divide the Alliance, and as likely to incite further nuclear proliferation.[56]

By 1974, however, the United States was ready to endorse the Ottawa Declaration on Alliance Relations, which noted that two of the European Allies "possess nuclear forces capable of playing a deterrent role of their own contributing to the overall strengthening of the deterrence of the Alliance."[57] In other words, the United States and the other NATO Allies held that multiple centers of nuclear decision-making could complicate an adversary's risk calculations and thereby reinforce deterrence and strategic stability. The NATO Allies have retained the view that the British and French nuclear forces enhance the Alliance's deterrence posture.[58]

The possible roles of third powers were, however, generally not taken into account in the mathematical models of "first-strike stability" and

[54] Savel'yev and Detinov, *The Big Five*, *op. cit.* p. 13.
[55] Robert S. McNamara, Address at the Commencement Exercises, University of Michigan, Ann Arbor, Michigan, 16 June 1962, quoted in William W. Kaufmann, *The McNamara Strategy*, New York, Harper and Row, 1964, p. 117.
[56] Edward A. Kolodziej, *French International Policy Under de Gaulle and Pompidou: The Politics of Grandeur*, Ithaca and London, Cornell University Press, 1974, p. 108.
[57] North Atlantic Council, Declaration on Atlantic Relations, Ottawa, 19 June 1974, in *Texts of Final Communiqués, 1949-1974*, Brussels, NATO Information Service, 1975, p. 319 (paragraph 6).
[58] "The supreme guarantee of the security of the Allies is provided by the strategic nuclear forces of the Alliance, particularly those of the United States; the independent strategic nuclear forces of the United Kingdom and France, which have a deterrent role of their own, contribute to the overall deterrence and security of the Allies." North Atlantic Council, Active Engagement, Modern Defence: Strategic Concept for the Defence and Security of the Members of the North Atlantic Treaty Organisation, 19 November 2010 (paragraph 18). This statement repeated almost identical statements in the Alliance's Strategic Concepts of 7 November 1991 (paragraph 54) and 24 April 1999 (paragraph 62).

related concepts that were esteemed by some leading U.S. analysts and policy-makers during the Cold War. Moreover, the American theories of strategic stability prominent during the Cold War generally failed to consider the alliance dynamics operative on each side. The theories about superpowers "A" and "B" disregarded decision-making in NATO and the Warsaw Pact as well as the relationships that Moscow and Washington had with allies and security partners outside Europe.

Moving from abstraction to reality

In retrospect, strategic stability in U.S.-Soviet relations amounted to the avoidance of direct war and the successful management of crises that might have led to nuclear war. It did not imply a consensus on nuclear doctrine or on theories of "first-strike stability" or other abstract constructs endorsed by influential U.S. analysts. Nor did it imply an enduring formal agreement on spheres of influence or an abandonment of political ambitions on either side. The nominal stability of the Cold War period was far from entirely reliable, in view of the ongoing political-military competition and the recurrent "close calls" in confrontations that might have led to war. The apparent stability was nonetheless noteworthy in relation to the potential for violent destruction that each superpower held in reserve.

While some observers maintain that the fact that no U.S.-Soviet nuclear war took place proves the robustness of the deterrence relationship between Washington and Moscow, it seems impossible to objectively assess the comparative strength or fragility of a particular bilateral deterrence relationship as long as there has been no recourse to combat. In other words, while war may demonstrate the breakdown of a deterrence stalemate, it is impossible to prove that an ostensibly stable deterrence stalemate is not at risk of erosion or even imminent collapse. The absence of fighting in a particular antagonistic relationship offers (a) no proof that deterrent threats (as opposed to other causes) are inducing restraint and (b) no guarantee that the restraint will continue. Efforts to deter are subject to multiple limits, and no firm warranties against failure are available.

Accordingly, one must be cautious in drawing inferences and lessons from a single case – the U.S.-Soviet relationship during the Cold War. Except for the capital virtue of successful avoidance of a major-power war as well as the merits of certain agreements to constrain and regulate the bilateral competition and influence the nuclear proliferation decisions of third parties, the conduct of the U.S.-Soviet Cold War does not offer a particularly attractive precedent for guidance in post-Cold War conditions.

Moreover, the abstract models favored by some U.S. analysts and policy-makers during the Cold War were so detached from political, operational, and strategic realities that their utility is severely limited. Indeed, their seeming objectivity and mathematical elegance could provide unwarranted assurance as to the robustness and reliability of the U.S. deterrence posture. Such models were useful only to the limited extent that their assumptions and parameters could capture a complex and dynamic reality. Such models had no predictive value, partly because they could not

encompass some major pertinent factors, such as personalities and the possible roles of third parties, as well as the potential influence of "national styles" and strategic cultures.[59]

[59] This was one of the main arguments advanced by the first generation of "strategic culture" theorists, including Jack L. Snyder and Colin S. Gray. See, for example, Jack L. Snyder, *The Soviet Strategic Culture : Implications for Limited Nuclear Operations*, R-2154-AF, Santa Monica, Rand Corporation, September 1977; and Colin S. Gray, *Nuclear Strategy and National Style*, Lanham, Hamilton Press/Abt Books, 1986. For a perceptive discussion of specific merits and limitations of "strategic culture" as an analytical construct, see Christopher Twomey, "Lacunae in the Study of Culture in International Security", *Contemporary Security Policy*, Vol. 29, No. 2, August 2008.

Lessons

Some of the essential strategic choices that the United States and its allies made during the Cold War appear addressed to a bygone world rather than to today's challenges. These challenges include sophisticated terrorist networks; the continuing proliferation of nuclear, chemical and biological weapons, usually termed weapons of mass destruction (WMD), and their delivery means, including cruise and ballistic missiles; and the risk of a resurgence of great power competition and confrontation. The international context may become more dynamic and fluid with the diffusion of various technologies (including advanced means of guidance, reconnaissance, and communications) and the possible rise of nationalistic and religious ideologies in adverse economic conditions.

Many lessons could no doubt be drawn from the U.S.-Soviet experience, including the value of restraint and caution in crisis management. However, the following objectives may constitute a useful medium-term agenda: recognizing the limits of Cold War models, cultivating humility about understanding deterrence and stability, adopting a more empirical approach to deterrence and stability requirements, upholding extended deterrence despite the tension between it and U.S. strategic vulnerability, and increasing investments in non-nuclear operational capabilities.

Recognizing the limits of Cold War strategic stability models

If strategic stability means simply the avoidance of major-power war, it is doubtful whether any model based mainly on the force structure characteristics of the potential antagonists can provide conclusive insights. In principle, force structure matters: for example, other things being equal, secure second-strike forces might well be more "stabilizing" in a crisis than lucrative and vulnerable targets, such as silo-based MIRVed ICBMs. However, the parallel force structures advocated by U.S. theorists during the Cold War might not be a sufficient condition for strategic stability, given the other factors that could influence decision-making. The U.S.-Soviet case suggests that strategic stability involves important factors other than particular force structure characteristics. As with deterrence efforts, there are no guarantees in the quest for stability; and probability judgments are the most that can be offered regarding attempts to promote stability.

The models of "crisis stability" and "arms race stability" favored in the United States from the 1960s on were inadequate guides for policy during the Cold War era in which they were formulated, and they are not likely to be more relevant in current and foreseeable circumstances.

However, some proponents of such theories may argue that they could furnish a basis for future U.S. relations with China. They may contend that the U.S. acceptance of rough parity with the Soviet Union, which some Americans rationalized on the basis of their theories of the requirements of strategic stability, offers a precedent that might be applied to managing the rise of China. Such an approach would rely on an abstract model of strategic stability through mutual vulnerability and would disregard political, cultural, geographical, and other differences that could make the acceptance of rough parity with China dangerous for the United States and its allies. While strategic stability in the sense of avoiding war between China and the United States is obviously a desirable goal, the proper foundations and mechanisms of strategic stability in U.S.-Chinese relations must be defined with care.

One of the problems with the phrase "strategic stability" is that it can be (and has often been) employed to convey the misleading impression that there is an agreed and enduring consensus on its requirements. It is important to be aware of the risk that the phrase may therefore be used as an instrument of political struggle, as it was during the Cold War. Proponents of particular policies may garb their proposals in dignified and positive "stabilizing" trappings and attack disfavored policies as somehow inconsistent with strategic stability.

In July 2010, Sergey Lavrov, the Russian Foreign Minister, expressed concern about "the totality of factors that could erode strategic stability," including "the prospect of weapons in outer space, plans for the creation of non-nuclear strategic missile systems, the unilateral strategic missile defense buildup, and the growing imbalance in conventional weapons."[60]

Such concepts of what could "erode strategic stability" might lead to the reestablishment of political or even legal constraints on missile defenses and drastically constrain the ability of the United States to develop such defenses against regional powers. Moreover, the Russian approach could hinder the United States and its allies in developing other capabilities that could help to ensure their national security and promote global strategic stability. The Russians appear to be interested in exploiting a concept of stability through mutual vulnerability for which their Soviet predecessors had little use in their operational strategy during the Cold War. It is therefore important to strive for clarity in thinking and discourse about strategic stability and associated ideas and to examine critically the practical implications of the concepts advanced as a basis for action.

The abstract strategic stability models favored in the United States during the Cold War are plainly irrelevant in confrontations with zealots bent

[60] Foreign Minister Sergey Lavrov, "The New START Treaty in the Global Security Matrix: The Political Dimension", *Mezhdunarodnaya Zhizn*, No. 7, July 2010, available at: http://www.mid.ru/brp_4.nsf/e78a48070f128a7b43256999005bcbb3/25909cfe1bbd1c6ec325777500339245?OpenDocument (accessed 30 December 2010).

on personal martyrdom or otherwise disconnected from the cost-benefit calculus associated with theories of deterrence based on a threat of punishment. For this reason it appears that "deterrence by denial" measures – that is, threatening operational defeat – may offer better prospects for success than threatening punishment in conflicts with religious fanatics.

It is not clear whether or to what extent fanatical state regimes may be subject to deterrence. In Michael Rühle's judgment, "Once religious fundamentalism is factored into the nuclear equation (witness the debate about a 'Talibanisation' of Pakistan), the chances of erecting a stable, long-term mutual deterrence regime in a multinuclear world appear slim indeed."[61] This observation raises questions that deserve further analysis. It can be argued that once a revolutionary regime has a territory it has something to lose and therefore a motive for at least a measure of restraint, as the examples of Communist China and North Korea suggest. In other words, cases may differ. As Joseph Pilat has observed, terrorist organizations "have historically mimicked states in key areas and are thus subject to constraints and influences of various kinds."[62] This might be all the more the case if a terrorist group gained control of a state, but the reliability of deterrence measures could not be guaranteed.

The major Asian powers – in particular, China, India, Japan, and Russia – are likely to shape conditions for global strategic stability to an increasing extent. As Brad Roberts has observed, "Asia is now the most nuclearized of all continents," with three main possible sources of instability: the "unpredictability" of Asia's major powers, the potential "intensification of competition," and "the unique role of the United States in the region as an extender of deterrence and assurance." Owing to America's unique role,

> A sudden loss of confidence in the United States as a security guarantor would have far-reaching implications as states respond by creating deterrents of their own – or more advanced hedging strategies... The objectives of U.S. policy should flow from these potential sources of instability. Policy should seek to lend a sense of predictability of the Asian nuclear order, to avoid an intensification of strategic military competition, and to reinforce the reputation of the United States as a guardian of nuclear stability.[63]

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[61] Michael Rühle, "NATO's Future Nuclear Doctrine: Factors Shaping a Decision", in Mark Fitzpatrick, Alexander Nikitin, and Sergey Oznobishchev (eds.), *Nuclear Doctrines and Strategies*, Amsterdam, IOS Press, 2008, p. 60.

[62] Joseph F. Pilat, "Dissuasion of Terrorists and Other Non-State Actors", *Strategic Insights*, Vol.III, Issue 10, October 2004, available at: http://www.nps.edu/Academics/centers/ccc/publications/OnlineJournal/2004/oct/pilatOct04.html (accessed 30 December 2010).

[63] Brad Roberts, *Asia's Major Powers and the Emerging Challenges to Nuclear Stability Among Them*, IDA Paper P-4423, Alexandria, Institute for Defense Analyses, February 2009, pp. S-1-S-3.

The multifaceted challenges in promoting strategic stability in Asia's dynamic political environment underscore the limited relevance of the bipolar "first-strike stability" models of the Cold War. It is noteworthy in this regard that, while the April 2010 U.S. Nuclear Posture Review report referred repeatedly to the importance of pursuing strategic stability in U.S.-Russian and U.S.-Chinese relations, it did not even mention Russian-Chinese strategic stability issues. Russia's Vostok 2010 military exercise underscored, however, the continuing value that Moscow attaches to its nuclear forces as a bulwark of deterrence and defense for Siberia and the Far East.

Cultivating humility about understanding the requirements of deterrence and stability

One of the lessons of the Cold War is that the United States and its allies should be cautious about imagining that they understand the internal political dynamics of their adversaries and their military and nuclear strategies.

Since the end of the Cold War, it has become apparent that the Soviet Union and the United States each made errors in assessing the other side's capabilities and intentions. For example, it appears that each side may have overestimated the accuracy of the other side's ICBMs. John Hines and his colleagues found that in the early 1980s Soviet estimates held that "greater accuracy, in combination with other factors," had "increased the effective power of the U.S. nuclear arsenal by a factor of 3."[64] Pavel Podvig, relying on the Kataev archive of primary source documents regarding Soviet strategic programs, concluded that

> U.S. estimates significantly overestimated the accuracy that Soviet missiles were able to demonstrate in the late 1970s and early 1980s... [O]nly in 1991 did the Soviet Union barely reach the counterforce capability that the U.S. intelligence community reported it had achieved a decade earlier.[65]

Perhaps the greatest Soviet errors (aside from the risk-taking under Stalin and Khrushchev) were in attributing a "first-strike" strategy to the United States and suspecting that Washington in the early 1980s might be preparing to implement this strategy. The corresponding U.S. error was failing to understand that the fears of some Soviet officials in the early 1980s were genuine.[66]

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[64] Hines *et al.*, *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, p. 17.

[65] Pavel Podvig, "The Window of Vulnerability That Wasn't: Soviet Military Buildup in the 1970s – A Research Note", *International Security*, Vol. 33, No. 1, Summer 2008, pp. 126, 129.

[66] As Robert M. Gates wrote, "U.S. intelligence had failed to grasp the true extent of their anxiety. A reexamination of the whole episode by the President's Foreign Intelligence Advisory Board in 1990 concluded that the intelligence community's confidence that this all had been Soviet posturing for political effect was misplaced." Robert M. Gates, *From the Shadows: The Ultimate Insider's Story of*

According to the analysis prepared by John Hines and his colleagues, one of the most significant U.S. errors was to attribute greater aggressiveness to the Soviet Union than was in fact the case, given what has become known since the USSR's collapse about the true dynamics of Soviet policy-making and behavior.

> U.S. analysts perceived greater military planning and design behind the USSR's arms buildup than probably was justified. Missile deployments in the 1970s, for instance, gave the impression to some of the most astute U.S. experts that the Soviet Union was developing the ability to initiate limited nuclear strikes, when in fact, missiles continued to roll off Soviet production lines largely to satisfy the interests of the defense industry.[67]

Even if the motivation behind Soviet force building was as "benign" as a bureaucratic-industrial establishment producing excess weapons for its own satisfaction, with little reference to a coherent strategic design, Hines and his colleagues noted, "This, of course, left the *fact* of the massive Soviet capability, regardless of its origins, as the main threat, a capability, which in the hands of a malevolent or irrational leadership could, in any case, destroy the Western world."[68]

U.S. analysts therefore had objective grounds for concern, for Soviet behavior had led to the accumulation of capabilities that could plausibly threaten major elements of the U.S. force structure – as well as holding other assets at risk. Moreover, Soviet behavior was far from conforming to U.S. theories of the requirements of "first-strike stability" and "arms race stability."

In other words, one should be wary of the notion popular in the United States during that era that there is a single sensible approach to stable nuclear deterrence that one's adversaries will eventually recognize and accept. This may be an ethnocentric projection onto others of one's own thinking about what ought to constitute a credible deterrent.[69] The same difficulty applies to concepts of intra-war deterrence and escalation control. A deliberately limited action intended to have a de-escalatory effect – that is, the restoration of deterrence and the cessation of combat – might not be interpreted by an adversary as a signal of restraint and resolve, but as a precursor to a mortal challenge.

It would be imprudent to suppose that the requirements of strategic stability have been firmly grasped, much less agreed upon, by the major

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Five Presidents and How They Won the Cold War, New York, Simon and Schuster, p. 273.

[67] Hines *et al.*, *Soviet Intentions 1965-1985*, Vol. I, *op. cit.*, p. 69.

[68] *Ibid*., p. 69; italics in the original.

[69] For an incisive discussion, see Ken Booth, *Strategy and Ethnocentrism*, London, Croom Helm, 1979.

powers and by third parties capable of initiating conflicts that could draw in major powers.

Adopting a more empirical approach to deterrence and stability requirements

Perhaps the most significant lesson that the United States and its allies can learn from the Cold War experience follows directly from acknowledging that there were important errors in U.S. assessments of the Soviet Union's capabilities, strategies, and intentions. These errors stemmed in part from successful Soviet information denial and deception efforts and in part from U.S. failures to comprehend or take seriously available evidence. However, they also derived from a focus on U.S. theoretical models of deterrence and stability requirements that were at times regarded as more relevant than empirical evidence of Soviet activities and strategic policy. Owing to faith in U.S.-designed models as a universal strategic wisdom that the Soviets would eventually accept and endorse, some U.S. experts regarded the Soviets as "slow learners" who, as Roman Kolkowicz put it, "lagged behind" the United States in learning about the doctrinal and force posture requirements of strategic stability.[70]

In retrospect, and in light of Soviet and Warsaw Pact primary sources that have become available since the end of the Cold War, it is clear that U.S. and other Western analysts failed to grasp the autonomy and distinctness of essential elements of Soviet strategic policy.

This discovery and the recognition that the United States and its allies face multiple types of potential threats – from terrorist organizations and regional powers to major powers – have rightly led to calls for "tailored deterrence." The phrase "tailored deterrence" seems to have first entered the official lexicon of the U.S. Department of Defense with the 2006 Quadrennial Defense Review, which said that the United States must move away "From 'one size fits all' deterrence – to tailored deterrence for rogue powers, terrorist networks and near-peer competitors." The 2006 QDR also referred to the need for "more tailorable capabilities to deter advanced military powers, regional WMD states, or non-state terrorists."[71]

There were efforts during the Cold War to tailor the U.S. and NATO deterrence posture to the Soviet threat, but these efforts did not go as far as current judgments on the demands of tailored deterrence and they were influenced by models of strategic stability that dominated U.S. thinking and posited a universal model of deterrence requirements. "Tailored deterrence" calls for avoiding self-centered mirror-imaging and the projection of one's own values and assumptions onto others. It requires detailed knowledge of particular adversaries and their strategic cultures, decision-making patterns, and priorities, not *a priori* assumptions about the functioning of deterrence derived from Cold War experiences.

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[70] Roman Kolkowicz, *The Soviet Union and Arms Control*, Baltimore, Johns Hopkins University Press, 1970, pp. 35-37.

[71] *Quadrennial Defense Review Report*, Washington, U.S. Department of Defense, 6 February 2006, pp. vi, 4.

Another element of a more empirical approach to strategic stability may be pursuing intensive, high-level, and wide-ranging dialogues with potential adversaries. Robert Pfaltzgraff has suggested that "a stable strategic relationship is one in which both sides gain knowledge about each other's strategy such that they gain increased confidence that neither will dramatically alter the relationship, or at the very least one of the parties will have sufficient advance warning to be able to take corrective action."[72] This approach to strategic stability is consistent with the call in the April 2010 U.S. Nuclear Posture Review report for "high-level, bilateral dialogues on strategic stability with both Russia and China."[73]

This approach has potential pitfalls, including the risk that U.S. allies may develop anxieties about the possibility that Washington might neglect their security interests and make deals with Moscow and/or Beijing without consulting them. The perennial risks of deception and manipulation – and of misunderstanding – would also persist, as would the chance that Chinese or Russian representatives would simply reiterate standard declaratory policy at meeting after meeting. Moreover, preparations for demanding dialogues would oblige U.S. policy-makers to engage with specific issues presented by Russian and Chinese interlocutors. However, communicating U.S. resolve might be constructive for deterrence and stability, as well as reassuring to allies. At a minimum, it should be recalled that one of the positive results of Cold War efforts to pursue strategic stability was the establishment of direct "hot line" channels of communication between the U.S. and Soviet governments.

Upholding extended deterrence

U.S. extended deterrence commitments and alliance relationships, notably in NATO and with Japan and South Korea, remain relevant as a means to promote nonproliferation. It is in U.S. interests and in the interests of global political stability and war-prevention that the United States uphold the credibility of these commitments. In summing up the findings from a series of studies of countries that considered pursuing national nuclear weapons programs, Kurt Campbell and Robert Einhorn reached the following conclusion:

> The case studies suggest that the perceived reliability of U.S. security assurances will be a critical factor, if not *the* critical factor, in whether such countries as Japan, Saudi Arabia, South Korea, Taiwan, and Turkey reconsider their nuclear options.[74]

[72] Robert L. Pfaltzgraff, Jr., "China-U.S. Strategic Stability", presentation at the Carnegie Endowment for International Peace conference, Washington, 6-7 April 2009, p. 1, available at: http://www.ifpa.org/pdf/Pfaltzgraff_China-US.Strategic.Stability_Carnegie.Seminar_6.April.2009.pdf.

[73] *Nuclear Posture Review Report*, Washington, U.S. Department of Defense, April 2010, p. x. See also pp. 19, 28-29, 46.

[74] Kurt M. Campbell and Robert J. Einhorn, "Avoiding the Tipping Point: Concluding Observations", in Kurt M. Campbell, Robert J. Einhorn, and Mitchell B.

There is a risk, however, that U.S. extended deterrence commitments may in some cases appear less necessary and/or less credible over time, and this could lead to decisions to pursue national nuclear weapons programs. In some circumstances, an increase in perceived threats could enhance the importance of the mechanisms devised during the Cold War to bolster the credibility of extended deterrence and assurance (including consultations and, in NATO, roles for European allies in hosting and/or supporting operational assets).

To hedge against the risk of a perceived decline in the credibility of U.S. nuclear security commitments, the United States will have to exercise caution in undertaking unilateral or negotiated reductions in its nuclear forces. Successful dissuasion and deterrence, as well as the assurance of allies, may depend on retaining credible nuclear forces. Aside from the risks for successful nonproliferation policies, nuclear force reductions could present other risks for stability. Less numerous and less diversified forces could be more vulnerable to attack, cheating, and technological breakthroughs, and would provide fewer options for central and extended deterrence.

Grappling with the tension between extended deterrence and U.S. strategic vulnerability

Cold War experiences may also be relevant in dealing with the tension, visible since the late 1950s, between extended deterrence and the vulnerability of the U.S. homeland to nuclear attack.

To diminish this tension, the United States and its allies will have to develop options other than relying on a model of strategic stability based on mutual vulnerability to nuclear attack. These options could include improved damage-limiting capabilities, such as air and missile defenses, and conventional strike and combat forces. It is noteworthy in this regard that in both the 2001 and the 2010 Nuclear Posture Reviews, the U.S. government called for enhancing the credibility of deterrence through an increased reliance on non-nuclear capabilities.

The credibility of extended deterrence commitments depends on more than capabilities, however. It is clear from the historical record that from the mid-1950s on Soviet leaders feared nuclear war and were conscious of the intrinsic risks in the U.S.-Soviet nuclear standoff in Europe and elsewhere. Beginning in the 1950s, the United States underscored these risks by deploying nuclear weapons on the territory of selected allies.

With the promulgation of the Schlesinger Doctrine in 1974, the U.S. government made public a capacity to employ limited nuclear options that was intended, among other purposes, to reinforce the credibility of extended deterrence. In Schlesinger's words, "We had to persuade the

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Reiss (eds.), *The Nuclear Tipping Point: Why States Reconsider Their Nuclear Choices*, Washington, Brookings Institution, 2004, p. 321; emphasis in the original.

Russians and our European allies that extended deterrence still worked, even though the Soviet Union could now destroy our cities."[75]

The United States enhanced the credibility of its extended deterrence commitments, despite its vulnerability to Soviet nuclear attack, by making clear to Moscow that it regarded its own national security interests as being at stake with those of its allies. In other words, in addition to facing U.S. and allied capabilities, the Soviet Union could see that Washington considered the security of its NATO allies to be among the vital interests of the United States. This helped to compensate for America's vulnerability to Soviet nuclear forces and thus upheld the credibility of U.S. extended deterrence. The tension appeared insurmountable in abstract models of strategic stability, but in practice U.S. allies and adversaries generally regarded U.S. security commitments as credible, owing in part to the large U.S. military presence in Europe.[76]

The credibility of extended deterrence commitments depends, among other factors, on the gravity of the interests at stake for the security guarantor, and not only on capability ratios and force posture characteristics. It appears that the United States can in some circumstances – despite its own nuclear vulnerability – offer effective extended deterrence protection by identifying its interests with those of its allies and demonstrating firmness in risk-taking on behalf of these allies. In the absence of superior U.S. damage-limiting capabilities, however, the risks are higher for Washington, and therefore the credibility challenge is greater.

The tension between extended deterrence commitments and U.S. strategic vulnerability that arose during the Cold War in U.S.-Soviet relations may reappear in U.S.-Chinese relations if China continues to build up robust and survivable second-strike forces. In other words, China need not attain parity with the United States in nuclear capabilities in order to threaten U.S. allies and hold significant U.S. assets at risk. China's expanding regional and long-range strike capabilities could complicate U.S. efforts to sustain the credibility of extended deterrence and assure U.S. allies and security partners.

U.S. quantitative superiority in strategic forces would not, in other words, necessarily mean that U.S. extended deterrence would prevail. It might take less to deter the United States than to deter China in a specific contingency. Depending on the circumstances, the stakes might be higher in a Taiwan crisis for China than for the United States, and China's willingness to run risks might be correspondingly greater than that of the United States.

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[75] James R. Schlesinger, interviews on 15 and 19 March 2007, quoted in Gordon S. Barrass, *The Great Cold War: A Journey Through the Hall of Mirrors*, Stanford, Stanford University Press, 2009, p. 181.

[76] For background, see David S. Yost, "Assurance and US Extended Deterrence in NATO", *International Affairs*, Vol. 85, No. 4, July 2009.

U.S. analysts remain far from agreement on whether the United States should or can take action to avoid a Chinese-U.S. relationship of mutual vulnerability to nuclear attack. Robert Pfaltzgraff has set out a vigorous argument for taking such action:

> the conscious perpetuation of U.S. vulnerability in the mistaken belief that the result will be strategic stability makes no sense. It may even encourage China to attempt to exploit U.S. vulnerability at a time of crisis and lead to undesired escalation based on miscalculation... For the United States strategic stability can best be enhanced by reducing vulnerabilities, including a strategic nuclear posture that includes deterrence by denial.[77]

The proposal advanced by some Russian and U.S. observers of reviving the ABM Treaty appears to be based in part on a misreading of the Cold War experience. To the extent that strategic stability prevailed during the Cold War – above all, in the sense of avoiding a direct war between the United States and the Soviet Union – it appears to have resulted from the shared fear of nuclear war and the specific features of the major antagonists, not from parallel force posture characteristics conforming to models of "first-strike stability." A new ABM Treaty could constrain the ability of the United States and its allies to deal with plausible regional power contingencies without contributing materially to the prevention of major-power conflicts. The United States and its allies and coalition partners may find it advantageous to invest in superior damage-limiting capabilities, including missile defenses, for multiple reasons: to improve the prospects for successful deterrence and crisis management, to sustain public support and alliance cohesion, and to defend their interests in confrontations with regional powers.

Increasing investments in non-nuclear operational capabilities

It remains in the interest of the United States and its allies to reduce their dependence on nuclear weapons by continuing to develop non-nuclear capabilities, including special operations forces and various types of defenses, active and passive. Damage-limiting capabilities, such as active and passive defenses as well as cyber defenses and precision non-nuclear strike assets, may enhance deterrence and constitute a hedge against the possible failure to deter of second-strike nuclear forces and other capabilities and arrangements intended to provide for deterrence and strategic stability.[78]

The nuclear element of deterrence will remain of paramount importance, because conventional means cannot achieve operational, deterrent, or political effects equivalent to those feasible with nuclear weapons. As Rod Lyon has observed, "Nuclear weapons, because of their

[77] Robert L. Pfaltzgraff, Jr., "China-U.S. Strategic Stability", *op. cit*., pp. 6-7.
[78] The risk of what Barry Posen has called "inadvertent nuclear escalation" cannot, of course, be excluded. Barry R. Posen, *Inadvertent Escalation: Conventional War and Nuclear Risks*, Ithaca, Cornell University Press, 1991.

sheer destructiveness, speak a unique dialect of the language of deterrence."[79] Indeed, aside from their destructiveness, nuclear weapons bear unique political and psychological significance in deterrence and assurance.

For this reason a number of expert allied observers in Australia, Japan, and South Korea, as well as in NATO countries, see limits to lessening reliance on nuclear deterrence capabilities. Conventional forces cannot in the foreseeable future completely replace nuclear forces for deterrence, and whether they will ever be able to do so is open to debate. The United States and its allies are nonetheless likely to find additional non-nuclear capabilities – including precision strike forces and air and missile defenses – among the most valuable options for dealing with the WMD capabilities of regional powers in the event of deterrence failure. Capabilities for deterrence by denial – that is, threatening the adversary with operational defeat – can be employed, if necessary, to limit damage and impose defeat.

Doubts about the reliability and political credibility of deterrence based on threats of punishment have led to (a) greater interest in capabilities for deterrence by denial – that is, capabilities designed to frustrate and defeat an enemy's assault while minimizing collateral damage to the maximum extent possible – and (b) closer attention to concepts of anticipatory defense, including preemptive action, with regard to state as well as non-state adversaries. The renewed prominence of these concepts suggests how dramatically perceptions of international security challenges have changed since the end of the Cold War. Preemptive actions would offer ipso facto proof of the absence of strategic stability if they led to a clash between major powers. Non-nuclear capabilities for deterrence by denial could offer a means, at least in some circumstances, to diminish reliance on nuclear forces.

Non-nuclear as well as nuclear capabilities will have to be adapted to new challenges for strategic stability in space and cyberspace. As Michèle Flournoy and Shawn Brimley have noted, cyberspace and outer space, together with the sea and the atmosphere, constitute "the global commons, those areas of the world beyond the control of any one state." From a U.S. national security perspective, they have added, "stability and security in space and cyberspace will depend on working with our allies and partners to develop a common framework and advance international norms that can shape the choices and behavior of others."[80]

[79] Rod Lyon, *A Delicate Issue: Asia's Nuclear Future,* Canberra, Australian Strategic Policy Institute, December 2009, p. 21.
[80] Michèle Flournoy and Shawn Brimley, "The Contested Commons", U.S. Naval Institute Proceedings, Vol. 135, No. 7, July 2009, available at: http://www.usni.org/magazines/proceedings/story.asp?STORY_ID=1950.

Conclusion

The Cold War confrontation is history, but the challenges of strategic stability remain. The United States in its February 2010 Ballistic Missile Defense Review (BMDR) and its April 2010 Nuclear Posture Review (NPR) referred repeatedly to the importance of strategic stability in U.S.-Russian and U.S.-Chinese relations. The BMDR confirmed that U.S. "homeland missile defense capabilities are focused on regional actors such as Iran and North Korea" and that the U.S. ground-based midcourse defense system "does not have the capacity to cope with large scale Russian or Chinese missile attacks, and is not intended to affect the strategic balance with those countries."[81]

Pending nuclear disarmament, the NPR called for the following measures in support of strategic stability: maintaining an assured second-strike capability with the long-standing U.S. nuclear alert posture in order to ensure that any aggressor would continue to face "unacceptable costs;" convening "high-level, bilateral dialogues on strategic stability with both Russia and China;" avoiding "large disparities in nuclear capabilities" in the U.S.-Russia force ratio; implementing the "verification and transparency measures" in the New START Treaty; and pursuing the ratification and entry into force of the Comprehensive Test Ban Treaty (CTBT) and the negotiation of a Fissile Material Cutoff Treaty (FMCT) "with appropriate monitoring and verification provisions."[82] While the NPR retained the traditional Triad of ICBMs, SLBMs, and heavy bombers, it prescribed de-MIRVing all U.S. ICBMs to a single warhead and ensuring that proposed non-nuclear prompt global strike capabilities do not undermine "the stability of our nuclear relationships with Russia or China."[83]

The new emphasis on strategic stability in relations with both Russia and China makes clear that the context is no longer that of the Cold War. The rise of China has led to concern among U.S. allies in the Asia-Pacific region. Japanese observers in particular have expressed concern that the concept of U.S.-Chinese strategic stability might encourage China "to be more assertive and confident" and build up its nuclear arsenal to rough parity with the United States, as in the U.S.-Russia relationship, particularly in a context of U.S. and Russian nuclear force reductions. According to some Japanese observers, while defining strategic stability as based on

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[81] *Ballistic Missile Defense Review Report*, Washington, U.S. Department of Defense, February 2010, p. 13.
[82] *Nuclear Posture Review Report*, *op. cit.*, pp. x, 12, 13, 19-21, 25, 28-30, 46.
[83] *Ibid.*, p. 34. Although the NPR stated that these various measures would support strategic stability, it did not offer a definition of strategic stability.

agreed mutual vulnerability is acceptable in U.S.-Russian relations, formalizing a similar definition in U.S.-Chinese relations in an arms control agreement could place Japan in a vulnerable position.[84] As two experts on Japanese perspectives recently wrote,

> National security officials in Tokyo have expressed particular concern that China may decide to step beyond its current nuclear posture of minimum deterrence and decide to develop a robust second-strike capability, perhaps with Japan as a primary target. Simultaneously, some Japanese experts worry that U.S. absolute supremacy in nuclear forces may erode in the future… The worst-case scenario for these strategic thinkers is that increase in Chinese capabilities and decrease in U.S. capabilities may lead the United States to conclude a bilateral arms control agreement with Beijing that endorses protection of a Chinese limited nuclear strike capability against the United States, with a decoupling effect that would be devastating for Japan.[85]

For observers holding this judgment, the prescription of U.S.-Chinese arms control negotiations offers no comfort. Their concerns relate to the factors that contribute to the overall credibility of U.S. extended deterrence commitments, including U.S. capabilities, vulnerabilities, and political will. As Stephan Frühling has noted, "Somewhat paradoxically, such concerns could be reinforced by US attempts to stabilize the (global) balance through arms control measures with the rising power, which would lead to questions about US resolve, and could enshrine US vulnerabilities."[86]

The tension between U.S. strategic vulnerability and extended deterrence protection to allies stood out as a recurrent issue during the Cold War, particularly in Europe. This tension has become more acute and complex as greater demands have been placed on the United States to uphold extended deterrence commitments to security partners that feel threatened by China, Russia, and/or other powers, such as Iran and North Korea. Some allied observers have raised questions about the capacity of the United States to provide extended deterrence protection to its many security partners in Europe, Asia, and the Middle East, given the continuing expansion of Chinese conventional and nuclear capabilities; the modernization of Russian nuclear forces; and the proliferation of increasingly accurate and longer-range missiles and other military capabilities in Iran, North Korea, and other states.

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[84] Author's interviews in Tokyo, June 2010.

[85] Michael J. Green and Katsuhisa Furukawa, "Japan: New Nuclear Realism", in Muthiah Alagappa (ed.), *The Long Shadow: Nuclear Weapons and Security in 21st Century Asia*, Stanford, Stanford University Press, 2008, pp. 354-355.

[86] Stephan Frühling, "Never Say Never: Considerations about the Possibility of Australia Acquiring Nuclear Weapons", *Asian Security*, Vol. 6, No. 2, 2010, p. 157.

The question of de-MIRVing ICBMs offers another illustration of continuity and change in U.S. efforts to promote strategic stability. The United States sought the de-MIRVing of ICBMs in Cold War arms control negotiations with the Soviet Union. U.S. analysts argued during the Cold War that de-MIRVed (or single-warhead) ICBMs would promote strategic stability because multiple warheads would be required to neutralize a single-warhead ICBM and because single-warhead ICBMs could not threaten as many targets as MIRVed ICBMs. U.S. analysts maintained that both Moscow and Washington should de-MIRV their ICBMs, and this is what the START II Treaty signed in January 1993 called for.

This ICBM de-MIRVing requirement was, however, one of the most distasteful features of the ill-fated START II Treaty in Russian eyes; and it helps to explain why Moscow in ratifying this treaty in April-May 2000 attached conditions that it had every reason to expect would be unacceptable to the United States. As a result, START II never entered into force.[87] When START II was effectively bypassed by the May 2002 Moscow Treaty, the United States made clear that it had abandoned its previous policy about the dangers for strategic stability posed by Moscow's MIRVed ICBMs. U.S. Secretary of State Colin Powell said in July 2002, "Since neither the United States nor Russia has any incentive to launch nuclear weapons at each other, we no longer view Russian deployment of MIRVed ICBMs as destabilizing to our strategic relationship."[88] This announcement illustrated how a political perspective on strategic stability may differ from that posited in an abstract model.

In the New START Treaty signed in April 2010 the Barack Obama administration maintained the George W. Bush administration's acceptance of Russia's reluctance to de-MIRV its ICBMs. The New START Treaty contains no de-MIRVing requirement or ICBM throw-weight limits, and Russia is at liberty to continue to MIRV its ICBMs. The April 2010 U.S. Nuclear Posture Review report stated, however, that "All U.S. ICBMs will be 'de-MIRVed' to a single warhead each to increase stability."[89] According to

[87] In his Letter of Submittal concerning the May 2002 Moscow Treaty, Secretary of State Colin Powell stated that "The START II Treaty, which was signed in 1993, and to which the Senate gave its advice and consent in 1996, never entered into force because Russia placed unacceptable conditions on its own ratification of START II. Russia's explicit linkage of START II to preservation of the ABM Treaty and entry into force of several agreements, signed in 1997, which related to ABM Treaty succession and ABM/TMD demarcation, made it impossible for START II to enter into force." See the Letter of Submittal in *Treaty on Strategic Offensive Reduction: The Moscow Treaty*, Hearings before the Committee on Foreign Relations, United States Senate, 107th Congress, 2nd Session, July 9, 17, 23 and September 12, 2002, Washington, US Government Printing Office, 2002, p. 269, available at: http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=107_senate_hearings&docid=f:81339.pdf.

[88] Secretary of State Colin Powell, Prepared Statement on the U.S.-Russia Treaty on Strategic Offensive Reductions, 9 July 2002, in *Treaty on Strategic Offensive Reduction*, *op. cit.*, p. 18.

[89] *Nuclear Posture Review Report*, *op. cit.*, p. 25.

the NPR report, "This step will enhance the stability of the nuclear balance by reducing the incentives for either side to strike first."[90]

In other words, the United States has endorsed the theory favored by leading U.S. analysts during the Cold War that "Single-warhead ICBMs contribute to stability,"[91] but it has implicitly recognized that Russia does not accept U.S. views on the force posture characteristics that would enhance strategic stability.[92] This dichotomy is pertinent to the assurance of allies and security partners benefiting from U.S. extended deterrence protection, because some allied observers have raised questions about the coherence of U.S. policy. The single-warhead ICBM policy shows U.S. fidelity to an element of a Cold War U.S. model of strategic stability, but with little reason to expect that Russia will follow the U.S. example.

The paradoxical result is that U.S. de-MIRVing could have a harmful effect on strategic stability, depending on Russia's procurement decisions, according to the U.S. Cold War models that emphasized the role of force posture characteristics in stability assessments. The combination of U.S. de-MIRVing and Russian MIRVing could lead to a widening disparity in U.S. and Russian uploading capacity. If the Russians chose to keep up their warhead numbers by MIRVing a smaller number of ICBMs, the United States could have an advantage in uploading capacity. At the same time, however, according to the U.S. Cold War models, Russia – with comparatively lucrative targets constituted by an increasingly smaller number of MIRVed ICBMs – might judge that it is at risk of a U.S. disarming first strike, and therefore feel under pressure to launch preemptively in an acute crisis. According to the U.S. Cold War models, the preferred solution would be de-MIRVing on the Russian side, so that Moscow would not rely on a relatively small number of MIRVed missiles that could comprise attractive targets. Purchasing a large number of new ICBMs might, however, be beyond Russia's means, given its financial constraints.[93]

The relevance of Cold War concepts of deterrence and strategic stability for today's challenges deserves further critical analysis. The need for sound organizing concepts concerning strategic stability is clear, and critical thinking about the Cold War experience may be an instructive source of inspiration. Cold War principles of deterrence have too often, it seems, been either rejected or carried over into post-Cold War and post-11 September 2001 circumstances without due consideration. Some principles, such as the utility for strategic stability (in the sense of enhancing the probability of successful deterrence and war-prevention) of secure second-strike capabilities, remain valid in relations among advanced nuclear-weapon states, although they may be of less relevance in deterring specific regional powers. Moreover, some principles of prudent

[90] *Nuclear Posture Review Report*, *op. cit.*, p. 23.
[91] *Nuclear Posture Review Report*, *op. cit.*, p. 22.
[92] According to the International Institute for Strategic Studies, Russia maintains 68 SS-18s, most with 10 MIRVs per missile, and 72 SS-19s, most with 6 MIRVs per missile. *The Military Balance 2010*, London, Routledge for the International Institute for Strategic Studies, 2010, p. 222.
[93] I am indebted to Kerry Kartchner for counsel in this regard.

management of nuclear capabilities – personnel reliability programs, “hot line” and other communications systems, and various safety and security arrangements – may make an indirect contribution to strategic stability by minimizing risks of accidents, misperceptions, and unauthorized use. Reassessing the Cold War experience may offer further lessons – positive and negative – for declaratory policy and capability requirements. Preventing major-power war remains a central objective of efforts in support of strategic stability.

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