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AUTHOR(S) Eric K. Graben

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Los Alamos Los Alamos National Laboratory
Los Alamos, New Mexico 87545

Superpower Nuclear Minimalism?

Eric K. Graben

During the Cold War, the United States and the Soviet Union competed in building weapons -- now it seems like America and Russia are competing to get rid of them the fastest. The lengthy process of formal arms control has been replaced by exchanges of unilateral force reductions and proposals for reciprocal reductions not necessarily codified by treaty. Should superpower nuclear strategies change along with force postures? President Bush has yet to make a formal pronouncement on post-Cold War American nuclear strategy, and it is uncertain if the Soviet/Russian doctrine of reasonable sufficiency formulated in the Gorbachev era actually heralds a change in strategy. Some of the provisions in the most recent round of unilateral proposals put forth by Presidents Bush and Yeltsin in January 1992 are compatible with a change in strategy. Whether such a change has actually occurred remains to be seen.

With the end of the Cold War and the breakup of the Soviet Union, the strategic environment has fundamentally changed, so it would seem logical to reexamine strategy as well. There are two main schools of nuclear strategic thought: a maximalist school, which emphasizes counterforce superiority and nuclear war-fighting capability, and a MAD-plus school, which emphasizes survivability of an assured destruction capability along with the ability to deliver small, limited nuclear attacks in the event that conflict occurs. The MAD-plus strategy is the more logical of the two strategies, because the maximalist strategy is based on an attempt to conventionalize nuclear weapons which is unrealistic.

Yet throughout the Cold War, both the United States and the Soviet Union adhered to the maximalist concept of deterrence. Both governments believed security was provided by preparing to for a war with the other. Both state's military establishments believed that this required a nuclear war-fighting capability where nuclear weapons were treated as extremely destructive conventional weapons. Civilian leaders were unwilling to challenge the assumptions on which strategic doctrine was based. Even if a government had desired to reject the maximalist strategy and adopt the MAD-plus strategy, it would have been unsafe to do so

2. The termination of nuclear war as quickly as possible and on terms as favorable as possible should war occur

3. Ensure the continued existence and political independence of the United States and its vital allies (the West European states and Japan)

ASSURED DESTRUCTION AND THE MINIMALIST SCHOOL OF DETERRENCE. Both the maximalist and MAD-plus deterrent strategies are sophisticated revisions of the simpler minimalist nuclear strategy, so this strategy will be outlined first. All nuclear strategies are based on certain assumptions about the nature of nuclear war. The minimalist assumptions are: (1) No political goal is worth the price of receiving a strategic nuclear attack. (2) It is impossible to limit the damage from a massive nuclear attack. (3) Escalation to massive nuclear exchanges from a lesser conflict is so likely that it must be treated as a certainty; therefore a nuclear war cannot be fought. The implication of these assumptions is what McGeorge Bundy has called "existential deterrence": the prospect of having one's country made into a "smoking, radiating ruin" is enough to deter anyone from ever using nuclear weapons under any circumstances. Therefore, any aggression should be deterred simply by the existence of an opponent's nuclear weapons.[1]

"Hard core" minimalists would prescribe that America needs only the possibility, not necessarily the certainty, of just a few (perhaps 10) nuclear weapons surviving an attack to have a secure deterrent. More prudent minimalists require the existence of an assured destruction capability, that is, a nuclear force that can survive an opponent's strongest attack and still inflict unacceptable damage on the opponent. Such a capability is often referred to as the McNamara criteria. According to the McNamara criteria, "unacceptable damage" is the destruction of 20 to 30 percent of the population of the former Soviet Union and 50 to 70 percent of its industrial capability.[2] To ensure such destruction, the United States needs 200 to 400 survivable equivalent megatons (EMT) worth of nuclear warheads.[3]

Strategic stability is achieved when both sides have an assured destruction capability producing a situation of mutual assured destruction or MAD. Since neither side can prevent its own destruction by striking first, neither has an incentive to attack, so the situation is stable. Beyond the McNamara criteria, further weapons are unnecessary and can even be harmful. The massive deployment of hard-target-kill capable weapons might lead one to believe that a first-strike can meaningfully limit damage when, in fact, it cannot. This in turn might lead one to believe nuclear wars can be safely fought thus weakening deterrence.

Very few, if any, "real people" are minimalists. The assumption that any conflict will escalate to massive nuclear attacks on cities was proven false very early in the nuclear age by the Korean War. Since the possibility of escalation to massive nuclear exchanges would not deter all attacks, lesser options were deemed necessary. During the Kennedy administration, the addition of limited options to the assured destruction capability was formalized in the doctrine of flexible response, which was NATO's strategy for dealing with Soviet numerical

credibly threaten to do so.

Many leadership targets in the former Soviet Union are based in hardened bunkers, and modern ICBMs, which make up a large part of superpower strategic arsenals, particularly in the CIS, are based in hardened silos, so counterforce capability is usually equated with hard-target-kill capability. Currently the CIS has about 1,600 missile silos and perhaps thousands of leadership bunkers. For all practical purposes under START, and particularly with much lower levels of strategic weapons that are likely to obtain from mutual unilateral reductions, the maximalist would advocate deploying as many survivable, hard-target-kill capable weapons as possible to be able to cover the target base after absorbing a first strike. One of the last American Cold War plans for nuclear war listed 50,000 targets and required the ability to hit 5,400 targets with about 3,800 weapons after absorbing a first strike.[7] The number of hard targets within this total could go down as ICBMs are dismantled under START and future unilateral cuts, but the number of survivable warheads should still be maximized to obtain the most favorable post-exchange nuclear-balance.

The maximalist school seeks to "conventionalize" nuclear weapons using them only to attack an opponent's leadership and military targets, which is compatible with *jus in bello* ethics and which seeks to make it possible to rationally use strategic nuclear weapons on a large scale.[8] This means the maximalist seeks to find a military utility for strategic weapons, where "military utility" is defined as being able to contribute to vanquishing an opponent in combat. It is hoped that massive civilian casualties and economic loss can be avoided either by limiting the conflict to military targets by implicit mutual agreement with the opponent or, depending on the strategist, by actually destroying, with counterforce strikes, an opponent's ability to attack cities. The primary difference between the MAD-plus school and the maximalist school is that MAD-plus considers such conventionalization impossible because of the immense destructive power of strategic weapons.

THE MAD-PLUS SCHOOL OF DETERRENCE.[9] The MAD-plus strategy assumes that the collateral damage to civilians from any large-scale use of nuclear weapons, regardless of intended target, would constitute assured destruction and would be too great a price to pay for any political goal. It is also assumed that the likelihood of escalation from a low level of nuclear conflict to countervalue exchanges, while not certain, is likely, especially if large attacks are utilized. The MAD-plus strategist agrees with the maximalist that the threat to launch a massive countervalue strike is not a credible response to most provocations, so some LNO capability is necessary. To meet the two goals of avoiding escaltion to catastrophic levels of conflict and maintain credibility of response, the MAD-plus school advocates the threat to use very small LNOs. As Thomas Schelling has pointed out, the sole purpose of such LNOs is to demonstrate a resolve to continue to fight unless an equitable cessation of hostilities is achieved.[10] Because of the destructiveness of strategic weapons and the size and survivability of superpower arsenals, they cannot be used to achieve military victory.

A typical LNO for the MAD-plus school would involve using a handful of weapons to destroy a fraction of an opponent's oil refining capacity (a few large, soft refineries). Such an

such gain would be worth this cost. The Soviet Union did not initiate hostilities in 1941. It is plausible though, that a state would be willing to incur such casualties for a vital interest like national survival. No one claims that the Soviet Union would have been better off by surrendering to Adolph Hitler. A lesser but still vital interest like the survival of America's European allies or access to vital natural resources like Middle Eastern oil may or may not be worth the cost of such casualties depending on the person making the decision. Whether a state could incur such casualties in a few days and survive the ensuing dislocation as a functioning state is debatable. Even if a state could and would accept 20 million casualties, Levi, von Hippel, and Dougherty, estimate that counterforce casualties could be 65 percent higher than this.

While it may be uncertain whether or not the casualties from a counterforce exchange would be enough to deter any aggression, it is more certain that such exchanges would produce no militarily useful result that would vanquish an opponent in the traditional military definition of victory. Since the early 1960s, neither side has had any chance of being able to prevent its opponent from launching a countervalue second strike by launching a counterforce first strike. It is unlikely that, even with the end of the Cold War, America and Russia (or the CIS) will disarm themselves to the point of giving the other a damage-limiting, first-strike capability. Thus, if one state launched a "limited" counterforce first strike, it would not be able to to ensure the safety of its own civilians, it would not enhance the credibility of a threatened follow-on countervalue strike, and it would have greatly angered its opponent by killing tens of millions of its citizens. The opponent might not even be able to tell that the strike was a "limited strike."

Massive counterforce attacks could demonstrate a resolve to continue to fight, which could serve the political goal of termination of hostilities on favorable terms. As Thomas Schelling has pointed out, the purpose of limited nuclear attacks is to demonstrate such resolve by demonstrating the "vitalness" of a particular interest.[1] The massive counterforce attacks of the maximalist school would certainly demonstrate resolve if perceived as limited, but they would produce immensely greater casualties than all past wars but one have produced historically. Because of the size of the strikes and the casualties produced, they also are much more likely to be mistaken for a decision to commit mutual suicide by engaging in a countervalue exchange, rather than a decision to demonstrate resolve to fight by holding a segment of a nation's industrial base at risk. If, for some reason, one wanted to produce as many casualties as produced by a massive counterforce attack, this could be done with much fewer, less capable weapons then the counterforce attack would require.

The likely hood of escalation from "limited" counterforce attacks makes another assumption of the maximalist school questionable: the assumption that nuclear war can probably be kept limited. No maximalist catagorically believes it can, but their arguments suggest that the possibility is at least high. It is possible that a nuclear war would be terminated short of an all-out nuclear exchange, but it is also very possible that it would not. No rational leader would escalate to mutually-suicidal countervalue attacks, but leaders may become irrational due to fear or other sources of Clausewitzian friction, or they may act in what would appear to be an irrational manner because of a nuclear "fog of war." The numbers of weapons

that deterrence is a subjective thing -- what deters is determined in the eyes of the party to be deterred. A maximalist believes that a favorable or at least neutral balance of survivable counterforce capability is necessary for deterrence. If such a balance does not exist then deterrence does not exist, and the side favored in the counterforce balance will gain political leverage.[15] If this is believed, then a MAD-plus-prescribed force posture would not provide stable deterrence because it does not ensure a favorable or neutral survivable counterforce balance. Therefore, a MAD-plus force posture cannot reliably deter a maximalist.

During the Cold War, the doctrine and force postures of both superpowers suggested that they adhered to the maximalist strategy. Both sides engaged in an arms race to deploy more and better hard-target-kill capable weapons. Both sides, even if they preferred the MAD-plus strategy, had to judge from their opponent's force posture and doctrine that there was a significant chance that the opponent was a maximalist. Therefore, the "reluctant" side had to be maximalist as well. This reluctant maximalism is illustrated by Harold Brown's reports as Secretary of Defense in the late 1970s. Brown pointed out that a nuclear war could not be won and damage could not be limited, which are MAD-plus assumptions, but he also pointed out that we had to deter the Soviet Union, and it was not obvious that the Soviets held these beliefs. Therefore, the United States had to adopt a maximalist force posture and doctrine in case the Soviet Union was maximalist.[16]

If this was the case in the past, why can we change to MAD-plus strategies now? What do we need to do? America and Russia, or the CIS, need to admit simultaneously that "the emperor has no clothes," that the maximalist strategy is objectively flawed, and the reason both sides adhered to it during the Cold War was for fear that the other side believed it and could only be deterred if the first side pretended to believe it as well.

"Men do not fight because they have arms. They have arms because they deem it necessary to fight."[17] America had genuine fear that it might have to fight the Soviet Union in the Cold War, and maintained a constant readiness for war, including massive nuclear war, because of this fear. The Soviet Union claimed to have the same fear of America. American performance in the Gulf War suggests that the Soviet Union had good cause to fear our capabilities, if not our intent. The necessity to prepare to fight and the horror of nuclear war lead to the attempt to conventionalize nuclear weapons. Now that the Cold War is over and the "evil empire" has collapsed, this fear has almost totally disappeared. As long as the fear existed, it was difficult to change from the maximalist strategies adopted because of this mutual fear. As the most recent round of unilateral proposals suggests, the decline of fear has lead both America and Russia to seek arms reductions.[18]

What is the Situation Now? The Military Establishments and Academia

Currently, both the American and former Soviet miliary establishments seem to continue to adhere to the maximalist strategy. Civilians in both states, primarily in the academic community in America and in the Academy of Sciences and former Soviet Foreign Ministry in the CIS, are advocating MAD-plus strategies. Traditionally, the executive branches of both

3. To deter nuclear war, a situation of mutual assured destruction should be maintained at the lowest possible level of nuclear weapons in the near term, and in the long term nuclear weapons should be abolished.

There is substantial debate in the former Soviet Union on precisely what the general precepts mean. Pre-August coup Soviet military officers believed reasonable sufficiency involved the ability to deliver "crushing rebuffs" to an aggressor and demonstrated continued concern with numerical nuclear parity.[29] The concern with numerical parity in particular suggests continued adherence to a maximalist strategy concerned with the U.S.-Soviet counterforce balance. Thus, the former Soviet military establishment seems to want to retain the old maximalist strategy but perhaps at lower levels.

The officers who most frequently made policy announcements during the early days of reasonable sufficiency are either no longer alive or in power.[30] The current leadership, including the last Soviet Defense Minister Marshal Yevgeny Shaposhnikov, has yet to make any substantial statement on strategic doctrine, so it would seem likely that military doctrine has not changed. The current CIS military establishment is expending most of its intellectual energy trying to hold a united army together and ensure a decent quality of life for its officers and men.

Since 1987 Soviet civilians in the Academy of Sciences and Foreign Ministry have called for the adoption of a nuclear doctrine similar to the MAD-plus and minimalist strategies.[31] Many of these civilians, and even some junior military officers, have specifically called for the adoption of the "McNamara Criteria" from the minimalist nuclear strategy.[32] Thus a civilian-military strategic dichotomy exists in the CIS that is similar to the civilian-military dichotomy in the United States.

What is the Situation Now? The Bush-Yeltsin Proposals

Russian and American political leaders have yet to decisively decide between the two strategies. Former President Gorbachev's speeches were never specific enough to tell what doctrine, if any, he adhered to. For example, about the most specific thing he said was, "the disarmament process should proceed on an equal footing, on the basis of strict observance of balance at all stages."[33] There is no real way to tell whether he supported maximalism or minimalism. When still president, he did permit the deployment of highly counterforce-capable "maximalist" weapons like the SS-24, SS-25, and the SS-18 mod 5, but he also permitted civilians like Alexei Arbotov and Yevgeny Primakov to publicly call for a minimalist or MAD-plus strategy under his policy of *Glasnost*.

Only recently has Russian President Boris Yeltsin made any pronouncements on nuclear strategy or force postures. He has said that Russian missiles will no longer be targeted at American cities.[34] This is a confusing statement, for all strategies of deterrence are ultimately based on the threat to destroy an opponent's society, and it is impossible to do this without destroying large portions of an opponent's population which is equivalent to targeting cities. So

Midgetman ICBM program, and the offers to scrap the MX and deMIRV the Minuteman III all represent a retreat from counterforce targeting and preoccupation with the counterforce balance. ICBMs have traditionally been the backbone of both American and Soviet hard-target-kill capability, and these unilateral reductions, and the bilateral reductions if they take place, would reduce American counterforce capability well below what would be required by the simple numerical cuts compatible with the President's proposal.

The cancellation of the W88 warhead also represents a retreat from the maximalist preoccupation with counterforce capability. The Trident II will still have some hard-target-kill capability, but not nearly as much as it would have with the W88.[37] The cancellation of the SRAM II and ACM similarly reduce U.S. counterforce capability beyond what is required by numerical cuts. Both systems were intended to enhance the penetrability and hard-target-kill capability of strategic bombers on a second-strike mission. The proposal to halt B-2 production after five more planes are built could also be a retreat from maximalism, since one of the Air Force's main rationales for the plane was to use it to track down mobile Soviet ICBMs in a nuclear war.

President Bush's proposals do not all lean towards the adoption of MAD-plus force postures. The most significant retreats from counterforce require reciprocal Russian actions that may require an even greater Russian retreat from counterforce. The January proposals for reciprocal action could represent continued adherence to the maximalist strategy in that they either require greater Russian cuts, which could leave the United States with a better counterforce balance after the cuts than before, or they could be a good-faith offer to try to get Russia to trade away the hard-target-kill capable weapons that American maximalists fear most.

The President's proposals could also be interpreted as an attempt to hang on to the B-2 bomber, which is the bomber that maximalists prefer most. In the September proposals, the President sought to retain the B-2 program. The change in the January proposals could reflect a genuine belief that the reduced threat no longer requires the bomber, or it could represent a continued attempt to salvage the program, since building a total of twenty planes instead of halting production at the 15 planes that are currently complete or under production will require keeping the B-2 assembly line open till the next century.[38] The President may be hoping to be able to resurrect the program in the future

There are also some ambiguous proposals in the two packages. Taking American bombers off of alert greatly reduces the survivability of American land-based forces in the event of a surprise attack. Formerly synergy between alert bombers and ICBMs ensured that either one or the other would survive any preemptive attack, since no Soviet attack was capable of targeting both simultaneously.[39] With American bombers off of alert, both bombers and ICBMs can be attacked by Russian ICBMs. The only programs that could preserve land-based weapon survivability were the MX RGB and Midgetman HML programs, both of which were cancelled. Thus overall American strategic survivability has been greatly reduced, though not catastrophically. The United States fears a loss of control over nuclear weapons in the CIS, so American bombers may have been taken off of alert to allow the CIS to reciprocate reducing the

(2) 503 ICBMs would immediately be removed from alert.
(3) Research on a modified short-range missile for Soviet heavy bombers would cease.
(4) Mobile missiles would be kept in their garrisons.
(5) Strategic warheads would be cut below the START-mandated level of 6,000 to 5,000.
(6) The ten-warhead SS-24 ICBM would not be modernized, and production of it would cease.
(7) The United States and the Soviet Union should begin intense negotiations to cut strategic arsenals by about one half.

Yeltsin, January, 1992[41]

(1) 1,250 strategic warheads had already been removed from strategic alert.
(2) Six submarines were being stripped of their launchers.
(3) The CIS would halt production of Bear-H and Blackjack strategic bombers.
(4) The CIS would meet START-mandated levels within three years instead of the permitted seven years.
(5) A joint U.S.-Russian global strategic defense should replace the U.S. SDI program.
(6) The United States and the CIS should cut overall strategic warhead levels to around 2,000 to 2,500.[42]

Russian officials visiting the United Nations at the time of the January proposals said Yeltsin found Bush's proposals to be "lopsided." President Bush's proposals would require larger cuts in the Russian ICBM force than in any other area,[43] and President Yeltsin's proposals are markedly lean on specific proposals regarding ICBMs.

Like the American measures, Mr. Gorbachev's and Mr. Yeltsin's proposals have some provisions that are compatible with a MAD-plus strategy. The quick achievement of START-mandated cuts could reduce Russian counterforce capability faster than American counterforce capability, temporarily altering the counterforce balance in the United States' favor, which a Russian maximalist would not want to do. Also, the halt in SS-24 production and confinement of mobile SS-24s to their bases reduces Russian survivable counterforce capability more than is required by treaty. Cancellation of the "Russian SRAM" program and a halt in bomber production also reduce Russian second-strike counterforce capability.

The Russian/CIS cancellations are even more likely to be purely budget-driven than American reductions, considering the state of collapse in the CIS economy, so Russian cancellations cannot be construed as incontrovertible evidence that a change in strategy has taken place. It is also not certain that Russia can reduce its inventory of warheads as fast as Mr. Yeltsin has offered. The head of the Russian nuclear weapons industry has stated that Russia will need American monetary aid to reduce its arsenal within ten years to the levels proposed by Mr. Yeltsin.[44]

During the Cold War, the United States, at least the U.S. defense establishment, saw the Soviet Union as an implacable threat to U.S. interests and bent on world domination.[46] This threat and the maximalist nuclear strategy drove the requirement for highly counterforce- capable weapons. In the words of General John Chain, former commander in chief of the strategic air command,

> We need systems with improved accuracy and a better capability to penetrate advanced defenses and strike hardened targets. Weapons with prompt hard-target capability are essential to disrupt Soviet attack plans as quickly as possible. It is imperative that we develop the capability to detect and attack the growing Soviet mobile target set. Additionally, we must have other forces sufficiently durable and flexible to hold remaining targets at risk throughout a nuclear conflict in order to control escalation, prevent coercion, and convince the Soviets to end the conflict.[47]

This argument was specifically used to endorse the MX missile, both silo and rail-based, and the B-2 bomber.

With the end of the Cold War, the Department of Defense no longer considers a conflict with the former Soviet Union likely. As Secretary of Defense Dick Cheney testified to Congress,

> It is improbable that a global conventional challenge to U.S. and Western security will emerge from the Eurasian heartland any time in the near future. Even if some new leadership in Moscow were to try to recover its lost empire in Central Europe and to threaten NATO ... then the reduction of its military, conventional capabilities over the past several years would make the chances for success remote without a prolonged period for force generation and redeployment.[48]

Chairman of the Joint Chiefs of Staff Colin Powell, CIA Director Robert Gates, and Defense Intelligence Agency Director Lt. Gen. James Clapper have all made similar statements.[49] Since the need for escalation dominance in the event conventional hostilities arose drove the maximalist strategy, it can be assumed that the defense establishment sees the nuclear as well as the conventional threat to be greatly reduced. The American defense establishment does not consider the Russian/CIS threat to be non-existent. Robert Gates testified that unrest in the CIS is still the most serious potential threat to U.S. security.[50] Powell and Cheney similarly point out that the former Soviet arsenal, particularly the nuclear arsenal, still poses a significant though greatly reduced threat to the United States.[51]

If the presence of a massive immediate threat drove the requirements for weapons like the MX and the B-2, then the decline of the threat is driving the cancellation of these weapons. For example, a Department of Defense press release issued the day President Bush announced a cap on B-2 production at 20 aircraft states,

threatening MAD-plus strategy is publicly adopted, it is more difficult to believe that one's opponent is still planning on fighting a nuclear war, which is in turn conducive to peaceful relations. As long as the Cold War strategies remain in place, prudent decision makers in both states should be less inclined to think that the Cold War is completely over.

A second reason the MAD-plus strategy should be adopted is that this strategy calls for cheaper force postures. Highly-survivable counterforce capability that maximalists desire is expensive. The MAD-plus strategy requires much less survivability and hard-target-kill capability than the maximalist strategy and so can be implemented with much cheaper force postures.[58] The United States has halted almost all strategic modernization, so this argument applies more to the CIS, which is still building SS-18, mod 5 and SS-25 ICBMs and developing new SLBMs.[59] Such continued development and deployment is only necessary if more of the hard-target-kill capability of the SS-18 and more of the survivability of the SS-25 is desired. The United States has not totally rejected counterforce modernization. The accuracy of the Minuteman III ICBM will be upgraded if the MX is scrapped.

A third reason the MAD-plus strategy should be adopted is to avoid a return to the arms race if democracy in the CIS fails and the Cold War returns. The maximalist strategy leads to arms races because of the quest for counterforce superiority, which requires constant attempts to deploy more or at least "better" weapons as an opponent does the same thing. The quality of a MAD-plus deterrent force is unchanged by fairly large fluctuations in an opponent's capability, so a change in one side's capabilities is unlikely to lead to an action-reaction arms race if MAD-plus strategies are adopted.

One might ask, "If we return to the Cold War, won't both sides revert to the maximalist strategy anyway?" This is possible, but the maximalist strategy is illogical, and if both sides admit it is illogical and adopt MAD-plus strategies, it will be difficult to revert to the old strategy. It may be difficult to admit in the first place that the "emperor has no clothes," but once everyone has admitted it, it is difficult to go back to pretending that a naked emperor is fully clothed.

A final reason to change strategies, is that a change to the MAD-plus strategy will increase strategic stability. If forces are cut and the old maximalist strategy is retained, the superpowers could end up with forces that are incapable of meeting the doctrine's requirements for stable deterrence. Security would thus depend on continued good will. If this good will evaporates, the situation could be very unstable if either side has a force that it thinks is unable to deter the other. As previously stated, many of the cuts announced by Presidents Bush and Yeltsin are not compatible with the old maximalist strategy, so if strategies do not change, it is possible that neither side will have a secure deterrent according to its own doctrine.

What Must Happen for MAD-Plus Strategies to be Adopted?

Civilian leaders on both sides must give strategic policy to their military establishments rather than take it, as has been done in the past. This will probably be easier to do in the United

public consumption or disinformation to lull an opponent into complacency. However, if leadership really does undergo a change of intent and wants to encourage reciprocity, then it would probably make a public declaration of its change. A concrete change in declaratory policy is, therefore, a necessary but not sufficient indicator of a change in strategy.

The second indicator of change will be change in deployments. Statesmen may not always act on what they say, but they generally act on what they believe; therefore, a combination of declaratory policy change and changes in force deployments compatible with the new doctrine will be sufficient indicators of change. Changes in force deployments alone are not enough, because both sides must change strategies simultaneously for the change to be stable. A reactive combination of mutual declarations followed by force posture alterations will be necessary for each side to know that the other is on the path of change.

One of the specific technical indicators that MAD-plus force postures are replacing maximalist force postures is that counterforce capability decline faster than warhead counts. Scrapping highly hard-target-kill capable weapons first, like the MX , SS-18, and SS-24 ICBMs deployed with ten warheads each, is the way to do this. Another indicator is that marginal imbalances in survivable counterforce capability not impede reductions so long as each side can maintain an assured second strike capability after a few weapons for use in LNOs are subtracted from its strategic force. This does not necessarily require the complete deMIRVing of ICBMs, though in particular instances, complete deMIRVing may be necessary, and it is likely that some MIRV reduction will be necessary in any case.

As stated above, many of the unilateral actions and some of the proposals for reciprocal action if adopted, match the indicators stated above. Just as changes in declaratory policy alone are not enough to indicate a change in strategy, changes in force postures are not enough either. Also as stated above, changes in force posture without changes in doctrine can lead to dangerous instabilities if conflict returns and one or both superpowers discover they have cut their arsenals to the point of not having a secure deterrent according to the doctrines they adhere to. A combination of changes in force posture and changes in declaratory doctrine is the best indicator that a change in doctrine has occured.

What About the Future of the CIS?

The future of the former Soviet Union is highly uncertain. A reasonable question to ask is how would unification of the former republics, total collapse of the CIS, or the rise to power of a "Russian Napoleon" or "Russian Hitler" affect the benefits of adopting the MAD-plus strategy?

There are three likely possible future states of unity for the former Soviet Union: there could be a true union like the old union with one central authority, a semi-unified commonwealth of mostly-sovereign states like the CIS now, or up to 15 completely separate states no more unified than the United States and Canada are unified. In the event that there is a return to a strong union, the U.S.-Union relationship would be bilateral like it was in the past, so traditional

[10]Schelling, Chs 2&3.

[11]U.S. Congress, OTA, The Effects of Nuclear War (Washington, D,C.: US OTA, 1979): 12-18.

[12]William H. Dougherty, Barbara G. Levi, and Frank N. von Hippel, "The Consequences of Limited Nuclear Attacks on the United States." International Security, vol.10, no.4 (Spring 1986): 5, and "Civilian Casualties from Limited Nuclear Attacks on the Soviet Union," International Security, vol. 12, no.4 (Winter 87/88): 169.

[13]Schelling, Chs. 2&3.

[14]OTA, p. 13.

[15]Nitze, "Assuring Strategic Stability in an Era or Detente," p. 227 and "Considerations Bearing on the Merits of the SALT II Agreement as Signed at Vienna," in Alerting America, ed. Charles Tyroler, II (DC:Pergammon & Brassey's, 1989),: 196-97.

[16]Brown, pp. 38-40.

[17]Hans J. Morgenthau and Kenneth W. Thompson, Politics Among Nations, 6th ed. (Knopf: New York, 1985): 436

[18]President Bush's State of the Union Address, televised, (Jan. 28, 1992), and President Yeltsin's Declaration that Russia will no longer target the United States. Michael Dobbs, "Yeltsin Pursues Nuclear Issues, Visits Fleet," Washington Post, (Jan. 29, 1992): A23.

[19]Compare Harold Brown's Department of Defense Annual Report FY 1982, op cit., pp. 5-19, 32-44, with Casper Weinberger, Annual Report to the Congress FY 1988 (DC, U.S. Government Printing Office, Jan. 1, 1982), pp. 42-72, 54-56 and Frank C. Carlucci, Annual Report to Congress FY89 (U.S. Government Printing Office, Feb 11, 1988), pp. 25-77, 50-55.

[20]Thomas C. Reed and Michael O. Wheeler, The Role of Nuclear Weapons in The New World Order, Dec. 1991, released for pub. 1/8/92, p. 29.

[21]Ibid., p. 28.

[32]Arbotov, p. 36, Primakov, p. 618, Zhurkin, Karaganov, and Kortunov, p. 7, and Col. V. Strebkov, "From the Standpoint of the New Thinking: Military Party Yesterday and Today," FBIS-SOV-89-002 (Jan. 4, 1989): 2.

[33]M. S. Gorbachev, "Cross a Watershed in the Country's History in a Fitting Manner," (speech in the Odessa military district, Aug. 17, 1990), Current Digest of the Soviet Press, vol. 42, no.32 (Sept. 19, 1990): 7.

[34]Michael Dobbs, "Yeltsin Pursues Nuclear Issues, Visits Fleet," Washington Post, (Jan. 29, 1992): A23.

[35]George Bush, Address from the Oval Office, televised, (Sept. 27, 1991).

[36]George Bush, State of the Union, televised, delivered to joint session of Congress (Jan. 28, 1992).

[37]If Russian silos are hardened to withstand 2000 psi of blast overpressure like American silos, and the D-5 has a CEP of 120 m, replacing the 475 kt W88 warhead with the 100 kt W76 will reduce the D-5s single-shot kill probability from about 98% to 76% (assuming perfect reliability). If Russian silos are harder, say hardened to withstand 5000 psi, the single-shot kill probability drops from 85% to 54%. (Kill probablilities are calculated using weapons specifications from U.S. Congress, Congressional Budget Office, Modernizing U.S. Strategic Offensive Forces, Nov. 1987, p. 86, silo hardness is taken from the 1983 version, p. 47).

[38]Patricia A. Gilmartin, "USAF Budget Plan Preserves F-22, C-17 But Caps Stealth Bomber Production," Aviation Week and Space Technology (Feb. 3, 1992): 23.

[39]For an explanation of the synergistic relationship, see Brent Scowcroft, Committee Chairman, Report of the President's Commission on Strategic Forces, (Washington, D.C.: U.S. Government Printing Office, 1983): 17.

[40]"Gorbachev Matches U.S. on Nuclear Cuts and Goes Further on Strategic Warheads," New York Times, (Oct. 6, 1991): A1.

[41]Serge Schmemann, "Yeltsin Describes His Cutbacks in Arms," New York Times, (Jan. 30, 1992): A6.

[42]It is uncertain if this number refers to all strategic weapons or just ballistic missile warheads. Andrew Rosenthal, "Bush and Yeltsin Propose Deep Cuts in Atomic Weapons," New York Times, (Jan. 30, 1992): A1, A6.

[43]Rosenthal, op. cit.

[44]Fred Hiatt, "A-Arms Chief Says Russia Needs Help," Washington Post, (Feb 5, 1992).

[45]Fred Hiatt, "Moscow Slashes Military Spending," Washington Post, (Jan. 25, 1992).

[46]For a typical example of the Cold War description of the threat see, Caspar W. Weinberger, Annual Report to the Congress, FY 1988, U.S. Department of Defense, January. 1987, pp. 23-25.

[62]Patrick E. Tyler, "U.S. Concerned that as the Union Breaks Up, So Does the Soviet Military," New York Times, (Dec. 10, 1991): A19, and Serge Schmeman, "Gorbachev is Ready to Resign as Post-Soviet Plan Advisor," New York Times, (Dec. 13, 1991): A1, 22.

[63]John D. Morocco, "Soviet Military Breakdown Worries U.S. As Control Over Nuclear Arms Splinters," Aviation Week and Space Technology, (Dec. 16, 1991): 20, and International Institute for Strategic Studies, The Military Balance, 1990-91 , (London: Brassey's, 1990): 34.

[64]R. Jeffrey Smith, "Russia to be Sole Nuclear Republic," Washington Post, (Feb. 6, 1992).

[65]Feiveson and von Hippel, (op. cit., p. 160) envision America and Russia with about 2000 warheads and the third nuclear powers with 200-500 warheads each. Kayser, McNamara, and Rathjens, op. cit., similarly expect the third nuclear powers to be willing to accept continued inferiority, p. 100.

[66]The Nazi party received 2.6% of the popular vote in May 1918. In Sept. 1930 they became the second largest party in the Reichstag getting 18.3% of the vote. In 1933, when Hitler became Chancellor, they won on a plurality of 43.9% of the popular vote.

[67]William Drozdiak, "Yeltsin Sees Threat of New Dictatorship," Washington Post, (Feb. 7, 1992).