Chapter 6
Nuclear Deterrence Theory and Current Nuclear Strategy Policy Issues

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This paper addresses the question of whether the theories of nuclear deterrence that were developed during the Cold War are applicable to the current international setting. Were these theories specific to the U.S.-Soviet context? If they were, how do they need to be updated to analyze nuclear policy in a world in which there are three major nuclear powers—China and Russia, in addition to the United States? Some experts have argued that the Cold War arguments are indeed outdated and that we need to develop new theories of deterrence. I disagree—the first section of this paper explains that the deterrence theories developed during the Cold War, as well as a variety of other arguments concerning preemptive attacks and other forms of escalation, apply in today's circumstances.

Next, to illustrate both the continuing relevance and current applicability of these deterrence arguments, this paper addresses three current nuclear policy issues: the challenge posed to the United States by two nuclear peers (2NP), the question of whether the United States should pursue a damage-limitation capability against China, and Japan's requirements for nuclear extended deterrence.

Are Cold War theories of deterrence valid in the current era?

The nuclear deterrence theories developed in the late 1950s and early 1960s by American strategists apply a general deterrence logic to the specific case of nuclear weapons.[1] Much of the application was to a specific nuclear configuration—a world in which both the United States and Soviet Union had truly massive retaliatory capabilities. This nuclear

[1] Among the key works are Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1959); Thomas C. Schelling, *The Strategy of Conflict* (Cambridge, MA: Harvard University Press, 1960); Schelling, *Arms and Influence* (New Haven: Yale University Press, 1966); and Glenn H. Snyder, *Deterrence and Defense: Toward a Theory of National Security* (Princeton: Princeton University Press, 1961).

situation came to be known as a world of mutual assured destruction (MAD) capabilities.[2]

The logic of nuclear strategy in MAD produced some novel results. Maybe the most striking was that there was little to no reason to target an adversary's nuclear forces once it had an assured destruction capability. Instead, if used at all, nuclear weapons would be used to inflict damage and costs on the adversary by targeting infrastructure and possibly population centers. This conclusion turned standard military logic on its head—instead of threatening to attack the adversary's forces, the logic of MAD called for threatening to attack its "value" targets. Limited nuclear attacks against such targets could be threatened to deter limited attacks by the adversary, including possibly large conventional attacks.

These early analyses also considered cases in which one country could destroy enough of the adversary's forces to deny it an assured destruction capability. This ability was termed a "damage-limitation capability." The logic of damage limitation is much more familiar/standard—a country uses its forces to protect itself against the adversary's forces. In addition, a damage-limitation capability could enhance deterrence by reducing the costs an adversary could inflict in retaliation. Without a damage-limitation capability (but even with one), the adversary's ability to inflict extremely high costs in a retaliatory attack could undermine the credibility of a state's deterrent threats.

One concern raised by possession, or even pursuit, of a damage-limitation capability was that it could create incentives for one or both countries to launch a preemptive attack—an attack designed to destroy as much of the adversary's forces as possible *because* the state believed its adversary was preparing to launch a massive nuclear attack, *because* the adversary feared the state was going to launch a damage-limitation attack. The possibility of this type of "reciprocal fear" and, closely related, concern about crisis instability—pressures and incentives to launch a counterforce attack because the adversary was believed to be preparing to launch one of its own—generated debate about the wisdom of the United States pursuing a damage-limitation capability.

By the end of the 1960s, the more important barrier to a U.S. damage-limitation capability was feasibility. The Soviet Union had built a larger and more survivable force, had the ability to continue building, and was believed to have the ability to undermine U.S. efforts to make its forces highly vulnerable.

American debates about nuclear strategy during the 1970s and 1980s focused on a set of issues that, with one exception, were less basic, but no less contentious. For the

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[2] Although sometimes understand as a strategy that called for the all-out targeting of the adversary's society, MAD should be understood as a condition created by the countries' nuclear forces, not a strategy. More than one strategy is possible in the condition of MAD.

most part, the debate assumed/accepted that the United States and the Soviet Union were in a condition of MAD. The key debate was over whether the United States should have a counterforce strategy—one based on the logic of targeting the adversary's nuclear forces—or instead a countervalue strategy in MAD.[3] A counterforce strategy could also target the adversary's nuclear command and control system (NC2) because it is essential for launching a country's forces. Whether to include NC2 in a counterforce attack would depend on the purpose of the attack.

During the Cold War, the U.S. strategy heavily emphasized counterforce targeting.[4] As noted above, critics argued that in MAD there was no good reason for targeting the adversary's forces, because the remaining forces could still inflict assured destruction in retaliation. Damage limitation was infeasible; the superpowers could not escape MAD.

Proponents of counterforce disagreed and offered a variety of arguments, some of which are being used once again today. One argument focused on the ratio of forces: Proponents argued that the ratio of forces—both before and following a nuclear exchange—could influence deterrence. For example, if the Soviet force was much larger than the U.S. force, Soviet leaders might not be deterred. Similarly, if the Soviet Union could launch a counterforce attack that gave it an advantage in force size—and therefore a ratio that favored it—Soviet leaders might launch a counterforce attack and then try to compel the United States to make concessions.

A second argument held that Soviet leaders valued their forces and leadership, not their population and economic targets. Consequently, to threaten high costs, the United States had to target Soviet forces. In effect, this argument held that nuclear forces were value targets.

A third argument, which may have been the most influential, was that the United States needed counterforce to credibly threaten limited nuclear attacks. According to basic deterrence logic, limited nuclear options would increase the credibility of U.S. threats because threats of all-out nuclear war were incredible, except in retaliation for an all-out Soviet attack. The United States relied on the threat of nuclear escalation to contribute to deterrence of a conventional Soviet/Warsaw Pact attack in Europe. In addition, it worried that the Soviet Union might launch limited nuclear attacks against the United States.

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[3] Robert Jervis, "Why Nuclear Superiority Doesn't Matter," *Political Science Quarterly*, Vol. 94, No. 4 (Winter 1979-80): 617-633; Jervis, *The Meaning of the Nuclear Revolution: Statecraft and the Prospect of Armageddon* (Ithaca: Cornell University Press, 1990); Charles L. Glaser, *Analyzing Strategic Nuclear Policy* (Princeton: Princeton University Press, 1990).

[4] Scott D. Sagan, *Moving Targets: Nuclear Strategy and National Security* (Princeton: Princeton University Press, 1989), Chapter One.

Proponents (mistakenly or misleadingly) equated countervalue targeting with all-out nuclear attacks. Therefore, they concluded that the United States required counterforce.

Finally, some proponents of counterforce argued that even if the United States could not undermine the Soviet assured destruction capability, some damage limitation was nevertheless possible. An assured destruction capability would not destroy all of the United States and kill all of its people. Consequently, proponents argued that whatever Soviet forces the United States could destroy were worth destroying, as this would reduce the damage the United States would suffer, even if the damage remained at an extremely high level. In other words, these proponents argued that some damage limitation was feasible even in MAD.

Critics of counterforce (including me) responded that each of these arguments was seriously flawed. Although there is much to be said, short responses are sufficient to make the basic points and capture the overall feel of the debate. Ratios of nuclear forces do not measure a meaningful capability in MAD because whatever the ratio is, both sides can still inflict enormous, crippling damage. A leader whose country can be essentially destroyed would not see significantly higher costs if the United States also destroyed its nuclear weapons. What value could these forces have provided following such a nuclear war? Limited nuclear options are possible without counterforce. The proponents' error is to equate a countervalue attack with an all-out attack. But there is no logical reason that countervalue attacks should be all-out. In fact, the logic of MAD holds that limited countervalue attacks are the only logical attacks in MAD—they can be employed for coercive bargaining while retaining some hope of keeping the war limited. The adversary has incentives to keep the war limited because so much of its country has not been attacked. And in MAD, there is little pressure to escalate to all-out attacks because damage limitation is not feasible, which reduces the risks of limited nuclear attacks.

In addition to rejecting the deterrent, coercive, and damage-limitation potential of counterforce in MAD, critics argued that large counterforce forces would generate preemptive incentives and other time pressures to escalate, even when states were in MAD. They also argued that counterforce policies would fuel arms races, because states would react to ensure their assured destruction capability, which would strain political relations, and in turn make war more likely.

The logic of these arguments is not special or particular to the case of U.S.-Soviet nuclear deterrence and competition. The arguments were not tailored to specific features of the United States and the Soviet Union. Instead, these deterrence and stability arguments capture the general logic of MAD. And, as explained below, they apply

well when there are more than two countries that have deployed assured destruction capabilities. Furthermore, although the debate about counterforce targeting continues, I believe that the countervalue/bargaining logic of nuclear weapons in MAD was, and is, sound.

Whether other nuclear dyads are characterized by MAD—that is, whether both countries have assured destruction capabilities—is a separate question. But cases that are not in MAD are still covered by the Cold War nuclear logic, albeit differently. If a state has, or can acquire, a significant damage-limitation capability, then there is a logical reason for pursuing counterforce targeting, as well as other systems that can help reduce the adversary's retaliatory capability, including national missile defense (NMD) if the adversary has ballistic missiles, and anti-submarine warfare (ASW) capabilities if the adversary has submarines that carry nuclear weapons.

Even in these cases, whether pursuit of damage limitation provides sufficient benefits to offset the costs and risks—which include preemptive incentives and crisis instability, and the political costs of intense nuclear competition—can in certain cases be a difficult question. A key issue is how effective the state's damage-limitation capability can be. Another key issue is whether the adversary also has a damage-limitation capability, which would then create interlocking pressures for early nuclear use.

I will illustrate the continuing analytic value of these deterrence arguments by briefly considering three current nuclear policy questions: 1) The challenge posed by two nuclear peers (2NP); 2) Whether the United States should pursue a damage-limitation capability against China; and 3) Japan's extended deterrence requirements when the United States and China are in MAD.

The challenge posed by 2NP

China's deployment of a large, increasingly diverse, and survivable nuclear arsenal has generated a good deal of concern in the United States about the challenge of facing two major nuclear powers. One prominent strategist declared that the result was a "paradigm shift" and a more dangerous world.[5] An important study by experienced nuclear experts argued that the United States would need a much larger force to meet its requirements

[5] Andrew F. Krepinevich, Jr., "The New Nuclear Age: How China's Growing Nuclear Arsenal Threatens Deterrence," *Foreign Affairs*, Vol. 101, No. 3 (May/June 2022): 92-104.

of deterrence.[6] The study's analysis hinges on arguments for targeting the adversary's nuclear forces. According to the authors, in a 2NP world, the United States should be able to target both China's and Russia's nuclear forces. And it should be able to do this sequentially and/or simultaneously. To meet this requirement in the relatively near term, the United States should therefore prepare to upload warheads onto its ICBMs. These warheads were previously deployed on U.S. ICBMs; they were removed from the deployed U.S. arsenal to meet the terms of the New START agreement.

With a couple of colleagues, I argued recently, in *Foreign Affairs*, that this analysis of the 2NP problem is deeply flawed.[7] Its conclusions follow directly from current U.S. nuclear doctrine, which continues to emphasize counterforce targeting. The study does not argue that the United States can or should try to deny China and Russia assured-destruction capabilities. Thus, we are back to the debate over counterforce in MAD. I will very briefly address three of their arguments here.

First, the study argues that some damage limitation is possible even in MAD. In a certain sense this is correct—an attack that inflicted an assured-destruction level of damage would not destroy everything or immediately kill all the people in the opposing country. However, whether the reduction in damage would be meaningful is a different question. These levels of damage are so high that society might well collapse. Survivors might not survive for long. The state would not persist as a functioning entity and it would likely never recover.

Second, the study holds that counterforce is required to target what the adversary values most—its military forces and its leadership. As I noted briefly above, targeting leadership and forces can add little to the costs of an all-out nuclear war, because the costs would already be so large and because there would be little to lead and nothing left to target.

Third, the study argues that countervalue targeting is immoral and inconsistent with the Laws of Armed Conflict (LOAC). The immorality argument is maybe the

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6 Brad Roberts et al., *China's Emergence as a Second Nuclear Peer: Implications for U.S. Nuclear Strategy*, A Report of a Study Group Convened by The Center for Global Security Research at Lawrence Livermore National Laboratory (Spring 2023), https://cgsr.llnl.gov/content/assets/docs/CGSR_Two_Peer_230314.pdf.

7 Charles L. Glaser, James M. Acton, and Steve Fetter, "The U.S. Nuclear Arsenal Can Deter Both China and Russia: Why America Doesn't Need More Missiles," *Foreign Affairs* (October 5, 2023), https://www.foreignaffairs.com/united-states/us-nuclear-arsenal-can-deter-both-china-and-russia?check_logged_in=1.

most contentious: I argued last year in the *Washington Quarterly*,[8] with my colleague Steve Fetter, that applying the LOAC to nuclear war provides poor guidance. First, a counterforce doctrine makes nuclear war more likely. Second, it increases the probability that a nuclear war will escalate to an all-out war. Moreover, the targeting allowed by the LOAC would inflict huge costs to civilians, which the LOAC are designed to avoid. We conclude that the targeting is legal, but does not achieve the objectives of the LOAC. Thus, although countervalue targeting is prohibited by the LOAC, it is the strategy most likely to achieve the United States' goals of minimizing the probability of nuclear war and the probability that a nuclear war will escalate to all-out war. We conclude that the value of complying with the LOAC for its own sake does not warrant adopting a strategically inferior nuclear strategy.

Should the United States pursue a damage-limitation capability against China's nuclear force?

Until around 2000, the United States had the ability to significantly limit/reduce the size of a Chinese retaliatory attack. China's force was small and highly vulnerable to a U.S. counterforce attack. In addition to possibly enabling the United States to reduce the retaliatory damage, this capability arguably enhanced extended deterrence—because the United States would suffer far less damage in an all-out war than China, the United States could more credibly threaten to pursue policies that would lead to nuclear war.

China has now largely transformed its force. It is becoming increasingly clear that a highly effective damage-limitation capability is beyond U.S. reach in politically relevant scenarios. For starters, China's nuclear force is now much larger. More importantly, its missile force is now more survivable because China has deployed mobile ICBMs. If China alerts its forces and operates them effectively once they are out of garrison, the majority of its mobile ICBMs could survive a U.S. attack.[9] Furthermore, China is increasing the size of its mobile ICBM force and is building hundreds of new silo-based missiles. At a minimum, targeting these silos will require warheads that the United States could otherwise devote to barraging China's mobile missiles. In addition, a relatively small number of these silos might survive a full counterforce attack.

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[8] Steve Fetter and Charles L. Glaser, "Legal, but Lethal: The Law of Armed Conflict and US Nuclear Strategy," *The Washington Quarterly*, Vo. 45, No. 1 (Spring 2022): 25-37.

[9] Charles L. Glaser and Steve Fetter, "Should the United States Reject MAD? Damage Limitation and U.S. Nuclear Strategy Toward China," *International Security*, Vol. 41, No. 1 (Summer 2016): 49-98.

China has also deployed sea-launch ballistic missiles that may have the ability to reach the continental United States from China's littoral waters. This would enable China to deploy its nuclear ballistic missile submarines (SSBNs) in a bastion near its shores, which it could protect with submarines, surface ships, and aircraft. How effective a Chinese bastion would be against U.S. nuclear attack submarines is an open question, at least in the unclassified literature. In any event, improvements in the submarine leg of China's nuclear force mean that the United States can no longer essentially assume it will be able to destroy China's SSBNs.

In addition, China is increasingly operating its forces in ways intended to enhance their survivability during a severe crisis or war. It is keeping some of its SSBNs on patrol and some of its mobile ICBMs at a higher day-to-day alert rate. In addition, China is reported to be planning to become able to launch some of its ICBMs on warning, which would enable them to be launched before U.S. nuclear weapons could destroy them. Increasing its ability to launch on warning may be the key reason for China's deployment of ICBMs in the new missile silos.

To regain a significant damage-limitation capability, the United States would need to be able to track and target China's mobile missiles, and to destroy China's SSBNs operating in its coastline bastion. In addition, the United States would likely want to expand its NMD system to improve its ability to intercept any Chinese weapons that were not destroyed by the initial U.S. attack and China was able to launch.

This competition between survivability and vulnerability appears to favor survivability.[10] A constellation of space-based radars is required for all-weather, 24-hour tracking of mobile missiles. Increasingly, this type of low-Earth constellation is feasible. However, there are a variety of countermeasures that can defeat these radars and appear to be relatively simple, including deploying decoy missiles, deploying missiles in modes that look like other vehicles—e.g., large trucks—and jamming the space-based radars. In addition, China should be able to greatly reduce the effectiveness of U.S. NMD. China appears to worry a great deal about U.S. missile defense: its fear is not so much about the current system but instead about the U.S. ability to expand its system and continue to improve it.[11] However, there is a weak link in national ballistic missile systems that China

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[10] For debate on these assessments, see Brendan Rittenhouse Green et al., "Correspondence: The Limits of Damage Limitation," *International Security*, Vol. 42, No. 1 (Summer 2017): 193-207.

[11] Henrik Stalhane Hiim, M. Taylor Fravel, and Magnus Langset Troan, "The Dynamics of an Entangled Security Dilemma: China's Changing Nuclear Posture," *International Security*, Vol. 47, No. 4 (Spring 2023): 147-187.

should be able to exploit with midcourse countermeasures. Because the midcourse phase of the ballistic missile trajectory is in a virtual vacuum, decoys should be highly effective against the U.S. NMD system. Advances in NMD might enable the United States to discriminate simply decoys from warheads, but it will likely remain unable to deal with the sophisticated decoys China is capable of deploying.

In addition to the poor prospects for success, U.S. pursuit of an effective damage-limitation capability would bring a number of risks and costs. China's mobilization of its mobile missile force during a crisis could create time pressures for the United States to launch a massive attack relatively early in a crisis. On the flipside, China would face pressures to alert its forces earlier in a crisis, which could intensify a crisis, as well as create incentives for the United States to attack. And U.S. damage-limitation programs will fuel the U.S.-China strategic arms competition, which would further strain the U.S.-China political relationship. These are the same types of arguments that were marshalled against large counterforce forces during the Cold War. They apply as well today to the U.S.-China strategic competition.

These risks and costs must be weighed against the potential benefits of a highly effective damage-limitation capability. As summarized earlier, if a highly effective damage-limitation capability were feasible, the United States would have good reasons to pursue it. It would reduce the costs the United States would suffer in an all-out war, and it could reduce the probability of nuclear war and conventional war by enhancing extended deterrence. The overall impact of a significant damage-limitation capability would depend on a variety of specifics, including the nature and extent of the extended deterrence challenges, the effectiveness of U.S. conventional forces, and the details of the two countries' nuclear forces, which influence the various time pressures for escalation.

Although the question deserves fuller analysis, due to space limitations, I will simply offer my bottom line. Given the very poor prospects for success, and the costs and risks of competition, the United States should forego efforts to regain a significant damage-limitation capability against China.

Meeting Japan's requirements for extended deterrence

The elimination of the United States' damage-limitation capability and the increase in China's assertiveness in East Asia raise the question of whether the United States can still meet its requirements for extending deterrence to Japan. The answer depends on answers to a number of prior questions.

First, how determined is China to conquer or coerce Japan? The smaller the value that China places on conquering Japan, the lower the requirements for extended deterrence. Experts disagree on the answer to this question. Some believe that China is determined to attain regional hegemony in East Asia. This would require pushing the United States out of the region. Even if China does not value conquering Japan per se, it would value this capability for fundamentally changing the geopolitical status quo. Other analysts believe that China is not highly determined to achieve regional hegemony and therefore, among other reasons, places little value on being able to conquer Japan. My own views fall into the latter camp.

Second, how capable is the U.S.-Japan alliance, possibly joined by other allies, of defeating Chinese conventional threats to Japan, including invasion, blockade, and coercion via countervalue conventional attacks? Invasion across water is a very difficult mission and advances in technology appear to be making it even more difficult.[12] Given the size and capability of alliance forces, China is quite unlikely to be able to successfully invade Japan.

Third, how much do U.S nuclear weapons contribute to deterrence of conventional war in MAD? While the lack of a damage-limitation capability reduces the credibility of U.S. threats to escalate to nuclear weapons and to use nuclear weapons in response to nuclear use by China, much of their deterrent value remains. China's leaders would almost certainly worry that a large conventional war could escalate to nuclear war via a variety of unforeseen or unpredictable paths. In addition, the United States can threaten a spectrum of limited nuclear options that should be more credible than the threat of all-out war and thereby restore additional deterrent value to its nuclear weapons.

This back-of-the-envelope assessment suggests that the U.S. extended deterrent remains adequate, even though China has acquired an assured destruction capability. Given the relatively low value that China places on conquering or severely coercing Japan, the likelihood that U.S. and Japanese conventional forces would defeat a Chinese invasion, and the deterrent value of nuclear escalation even in MAD, we have strong reasons to believe that China would be deterred. Obviously, however, analysts who believe that one or more of these conditions do not hold will be less optimistic and conclude that the U.S. extended deterrent is less adequate or even inadequate.

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[12] Stephen Biddle and Ivan Oelrich, "Future Warfare in the Western Pacific: Chinese Antiaccess/Area Denial, U.S. AirSea Battle, and the Command of the Commons in East Asia," *International Security*, Vol. 41, No. 1 (Summer 2016): 7-48; Eugene Gholz, Benjamin Friedman, and Enea Gjoza, "Defensive Defense: A Better Way to Protect US Allies in Asia," *The Washington Quarterly* (Winter 2020): 171-189.

If deterrence is inadequate or simply in need of bolstering, the United States and Japan have a spectrum of well-known options. The least controversial simply involves continuing to improve the alliance's conventional forces, including the hardening of military bases, and continuing to increase joint training and planning. The much more controversial steps involve nuclear weapons. Some analysts who are skeptical that U.S. nuclear weapons in MAD can contribute significantly to extended deterrence will be especially open to this change in alliance strategy.

A first option would be to deploy American nuclear weapons on Japanese territory, but for the United States to retain full operational control of these weapons. To attempt to further increase the credibility of the nuclear deterrent, the United States could deploy weapons in Japan and share control of these weapons with Japan. This option would resemble the nuclear sharing arrangements that the United States and its NATO allies developed to increase the credibility of U.S. extended deterrence in Europe during the Cold War. Mirroring the current situation in East Asia, this shift in U.S. doctrine occurred in response to the Soviet Union's increasing ability to retaliate following the United States' use of nuclear weapons and its eventual acquisition of an assured destruction capability. U.S. theater nuclear weapons were said to "couple" U.S. forces in Europe to U.S. strategic nuclear weapons, thereby increasing the probability that a large war in Europe would escalate to attacks against the Soviet homeland and, in turn, enhancing extended deterrence.

Finally, Japan could acquire its own nuclear weapons. The central rationale would be that a state can make more credible threats to protect its own homeland than to protect an ally. Therefore, Japanese nuclear threats would be more credible than American nuclear threats in response to a Chinese invasion of Japan. There are two basic possibilities within this option. First, Japan acquires nuclear weapons, while remaining in the U.S.-Japan alliance and under the U.S. nuclear umbrella. This arrangement would resemble that of two European members of NATO—Great Britain and France—that have their own nuclear weapons. The second possibility is that Japan acquires its own nuclear weapons and the U.S.-Japan alliance dissolves.

Which option Japan and the U.S.-Japan alliance should choose is likely to generate increasing debate as China's conventional capabilities continue to improve. The key point for this paper is that the challenge of extending deterrence in MAD is not a new one. In fact, the challenges of extending deterrence to NATO drove much of the strategy and nuclear debate during the Cold War. There were no easy answers, but the question was studied and debated extensively. These arguments—about the role of conventional

forces, the rationales for theater nuclear forces, and the complexity of the command-and-control arrangements for managing these forces—formed the core of the U.S. Cold War nuclear strategy debate. Although the specific political and geographic circumstances are different, the logic of these arguments and debates remains highly and directly applicable to Japan and the U.S.-Japan alliance.