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# The Eroding Balance of Terror

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## The Decline of Deterrence

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*Andrew F. Krepinevich, Jr.*

“**T**hus far the chief purpose of our military establishment has been to win wars,” the American nuclear strategist Bernard Brodie wrote in 1946. “From now on its chief purpose must be to avert them.” Brodie’s injunction summed up the grim lesson of the first five decades of the twentieth century: after two horrific world wars and the development of nuclear weapons, it was clear that the next major conflict would produce no winners—only survivors. As U.S. President John F. Kennedy put it a decade and a half later, in the midst of the Cuban missile crisis, “Even the fruits of victory would be ashes in our mouth.” For decades, U.S. policymakers followed Brodie’s and Kennedy’s lead, putting deterrence—preventing rivals from attacking in the first place—at the center of U.S. defense strategy.

Applied effectively, deterrence discourages an adversary from pursuing an undesirable action. It works by changing the adversary’s calculation of costs, benefits, and risks. A country can, for instance, convince its opponents that an attack is so unlikely to succeed that it is not even worth the attempt: deterrence through denial. Or a country may convince its opponents that defeating it would be so costly as to be a victory in name only: deterrence through punishment. In either case, a rational adversary will decide to stay put.

Through the threat of denial or punishment, deterrence has helped keep the peace among major powers for over seven decades. Even 30 years after the end of the Cold War, it remains at the heart of U.S. defense strategy. The 2018 National Defense Strategy, for instance,

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*The future of war: unveiling a surveillance drone in Tokyo, May 2017*

begins by declaring that “the Department of Defense’s enduring mission is to provide combat-credible military forces needed to deter war and protect the security of our nation.”

By now, that declaration has been made so many times, over so many decades, that it has become an article of faith. Like several of its recent predecessors, the Trump administration has spent little time explaining exactly how the United States intends to deter existing and future rivals. The assumption is that it needs no explaining: modern weapons are so destructive that no sane leader would risk igniting a general war—and so the requirements for deterrence are relatively modest.

But such confidence is profoundly misplaced. In fact, deterring aggression has become increasingly difficult, and it stands to become more difficult still, as a result of developments both technological and geopolitical. The era of unprecedented U.S. military dominance that followed the Cold War has ended, leading to renewed competition between the United States and two great revisionist powers, China and Russia. Military competition is expanding to several new domains, from space and cyberspace to the seabed, and new capabilities are making it harder to accurately gauge the military balance of power. Meanwhile, advances in cognitive science are challenging the theoretical underpinnings of deterrence by upending

our understanding of how humans behave in high-risk situations—such as when facing the possibility of war.

Taken together, these developments lead to an inescapable—and disturbing—conclusion: the greatest strategic challenge of the current era is neither the return of great-power rivalries nor the spread of advanced weaponry. It is the decline of deterrence.

## **MULTIPOLAR WORLD**

During the Cold War, the military power of the United States and the Soviet Union dwarfed that of any other state or group of states. With the Soviet collapse, this duopoly gave way to unrivaled U.S. military dominance, especially in the conventional (that is, nonnuclear) realm. During the Cold War, Washington’s defense strategy was built on deterring a single major rival; in the aftermath of the Cold War, U.S. policymakers didn’t have to worry about major rivals at all.

Today, however, the United States confronts an international system with not one, or two, but multiple centers of gravity. Consider what has happened to the distribution of nuclear forces. For much of the Cold War, the two superpowers stockpiled over 20,000 warheads each, while the British, Chinese, and French arsenals numbered in the low hundreds. But a series of bilateral U.S.-Russian arms control agreements have radically reduced both countries’ strategic nuclear forces to 1,550 deployed strategic weapons each, just as the Chinese, Indian, North Korean, and Pakistani nuclear arsenals are growing in size and sophistication. Among these, China’s nuclear arsenal is the most worrisome. It is estimated at roughly 300 weapons, and the country has enough fissile material to produce several hundred more nuclear weapons a year without affecting its nuclear energy needs. China is also updating its delivery systems, complete with new ballistic missile submarines and land-based missiles. As in every other major area of military competition, Beijing seems unlikely to settle for second best.

In such a multipolar nuclear world, some of the key conditions that once ensured relative stability between Moscow and Washington will no longer obtain. Cold War nuclear deterrence was founded, as the nuclear strategist Albert Wohlstetter famously noted, on a “balance of terror,” or “mutual assured destruction.” As long as the Soviet Union and the United States could each suffer a surprise attack by the other and still retain sufficient nuclear forces for a devastating counterattack,

neither side wanted to risk a strike: deterrence through punishment par excellence. To keep this delicate balance, both sides sought to maintain a rough parity in their nuclear forces, a goal that endures to this day in the New START agreement.

The emergence of China as a major nuclear power threatens to throw this balance of terror off-kilter, as Beijing, Moscow, and Washington each view the other two as rivals. If China continues to expand its nuclear forces, the United States—now forced to prepare for a possible attack on not one but two flanks—might respond with a significant buildup of its own. Any major increase in American nuclear forces would likely prompt Russia to follow suit in an attempt to maintain parity with the United States. Simply put, in a world with three nuclear great powers, none can maintain parity with the combined forces of the other two. In this multipolar environment, the three rivals will be less confident in being safe from a nuclear attack than the Cold War superpowers were.

### **WAR'S NEW FRONTIERS**

Deterrence is ailing not just on account of new powers. New weapons have also done their part. Early on, high-tech weapons worked to the United States' advantage. The 1990–91 Gulf War, for instance, showcased the power of integrating high-end intelligence, surveillance, and reconnaissance systems with precision-strike weapons. Russian military theorists feared that such capabilities represented an alarming glimpse of what was to come. As these capabilities matured, the argument went, the United States would be able to conduct pinpoint strikes to eviscerate Russia's nuclear arsenal without having to go nuclear itself. Following such an attack, Russia could of course retaliate with whatever nuclear forces had survived. But this “broken-back” attack would be further diminished by U.S. air and missile defenses, and it would risk triggering a full-scale U.S. nuclear counterstrike that would be the end of Russia as a functioning society.

To offset this perceived disadvantage, Russia has designed nuclear weapons with very low yields and adopted a military doctrine that calls for such weapons to be used if Moscow fears that its nuclear arsenal is at risk or if it is losing a conventional war. A similar line of thinking may be taking hold in China, where political and military leaders have intimated that certain kinds of nuclear weapons are acceptable for use even in a conventional conflict, such as those

used to generate an electromagnetic pulse that can disable any nearby electronic equipment.

The result is that the firebreak between conventional and nuclear war is slowly disappearing—with worrying implications for deterrence. Both Beijing and Moscow may see conventional aggression as less risky, since they can employ certain types of nuclear weapons if things go

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badly. Many U.S. leaders, by contrast, still believe that the only purpose of maintaining nuclear weapons is to deter others from using them, a view that completely decouples nuclear from conventional war. As a result, U.S. leaders may enter a conventional war thinking

that there's little risk of it escalating into a nuclear conflict. But Chinese and Russian leaders, finding themselves in such a war, may be far less hesitant to cross the nuclear threshold than the United States expects.

Cyberweapons, with their enormous but untested potential to corrupt a state's early warning and command systems, muddy the waters of deterrence even further. Some have speculated, for instance, that Israel's 2007 air strike on a nuclear reactor under construction in Syria was accompanied by a cyberattack that blinded Syrian air defenses. Even though none of the Israeli aircraft was of stealth design, and even though they were attacking a high-value target, Syrian air defenses never fired at them. If other states think they can compromise a rival's early warning and command systems, as Israel seems to have done in Syria, the anticipated costs and risks of striking first in a crisis may fall dramatically.

The geographic location of today's nuclear powers is undermining deterrence, too. During the Cold War, valuable Soviet and U.S. homeland targets were far enough apart to guarantee some warning time ahead of an attack. The spread of nuclear and other strategic weapons to states located relatively close to their rivals means that attack warning times are much shorter today. This is especially true for nuclear-armed states fielding fast, accurate ballistic missiles capable of striking their rivals' nuclear forces. Short flight times may compel senior policymakers to place their strategic forces on heightened alert at all times, as well as to devolve to lower-ranking commanders the authority to release them. In theory, these decisions could enhance deterrence, but they would also increase the risk of an accidental or

unauthorized use of strategic forces, thus undermining deterrence: faced with this risk in a moment of crisis, an adversary might decide that striking first was the safer bet.

The problems for deterrence do not end there. The emergence of new domains of warfare is also eroding its foundations. Today's major powers built their economic and military might on a vast but vulnerable network of satellites, as well as undersea pipelines and cables. The U.S. military, in particular, depends on government and commercial satellites for its operations. Other major militaries have followed suit, and national economies have come to rely on satellites for a wide range of services. Pipelines on the ocean floor carry over a quarter of the world's oil and natural gas supply. Economies and militaries rely on the Internet, and almost all transoceanic data flow through undersea cables.

Unfortunately, all this infrastructure is susceptible to disruption, and deterring aggression against it is not easy. Disabling a satellite, corrupting a computer network, or cutting an undersea data cable is often easier than fending off an attack, favoring the offense and undermining deterrence through denial. Deterrence through punishment is just as tricky in such cases. Quickly identifying and retaliating against an aggressor is far more difficult than in the case of conventional attacks via land, air, or sea. And because so many states are capable of operating effectively in these relatively new domains, attribution will be even more complicated.

### **LOSE SOME, WIN SOME?**

In a sense, deterrence has become a victim of its own success. War serves as the ultimate test of military systems, force structures, and the doctrines governing their employment. The lack of a war between major powers since 1945 means that the true balance of conventional, nuclear, and cyber-military capabilities is uncertain. And if this is true for well-established technologies, it is doubly so for new capabilities that incorporate artificial intelligence, novel biological agents, laser weaponry, hypersonic speed, and robotics. Because few of these capabilities are thoroughly battle tested, future belligerents may have diverging beliefs about their benefits and dangers, increasing the likelihood that one side might opt for aggression. This is true particularly for risk-tolerant leaders who assume such uncertainties will work in their favor—undermining deterrence where it is most fragile.

But the challenges to deterrence today go even deeper. Recent insights into the nature of human decision-making raise questions about the very logic of deterrence. As a theoretical concept, deterrence rests on the assumption that where risk is involved, humans act rationally, in the sense that they base their decisions on a cost-benefit calculus and act only when the expected gains outweigh the anticipated costs. Over the past 40 years, however, research in behavioral economics has cast great doubt on this assumption. Humans, it turns out, cannot be counted on to always maximize their prospective gains. And even when they do, they are remarkably inept at understanding how the other side—the opponent in a conflict—calculates its own costs, benefits, and risks. Human nature hasn't changed, but our understanding of it has—in ways that bode ill for defense strategies built on deterrence.

The first problem has to do with our understanding of how leaders conceive of losses. According to prospect theory, people will risk more to avoid losing what they already have than to gain something of equal value. Thus, for example, policymakers will run higher risks to retain their own territory than to seize foreign territory of equal value. In theory, this phenomenon would seem to strengthen deterrence, since it predicts that leaders generally prefer to stick with whatever land and resources they already own, rather than attempt to seize what belongs to another. But the matter does not end there.

This is because of how decision-makers set their so-called reference point, which determines whether they consider their current situation to be one of loss or gain. One might expect that people always base their reference point on the status quo—the state of things at the time they make a decision. After a series of gains, for instance, individuals normally adjust their reference point to the new status quo. Any subsequent setback looks to them like a loss rather than a gain forgone. We should therefore expect them to be relatively risk tolerant in their efforts to defend their latest gains, which they now see as a potential loss.

But this dynamic does not cut both ways. After individuals suffer losses, they tend not to adjust their reference point to the new, less favorable situation. Instead, they cling to the status quo ante. They therefore see their own attempts to retake what has been lost not as the pursuit of gains but as the avoidance of losses. As a result, they are often ready to take great risks and accept high costs to achieve this end.

For a historical example, consider the U.S. economic embargo against Japan in the summer of 1941 and Japan's decision to attack Pearl Harbor a few months later. In imposing the embargo, U.S. leaders were attempting to punish Japan for a series of invasions across East Asia, which the United States viewed as losses compared with the previous situation. Japan's leaders, however, had updated their reference point to include their most recent territorial gains and so saw the embargo as an American attempt to take from the Japanese what was now rightfully theirs. Both sides, in other words, were operating under a paradigm of loss, which made them more willing to risk war.

To understand how a similar dynamic could play out today, look to the South China Sea, where Beijing is occupying and fortifying disputed territory, apparently intent on creating new facts on the ground. The United States and its allies, however, continue to view China's actions as illegitimate and retain the original situation as their reference point. If the dispute comes to a head, both China and its opponents will be operating from a reference point of loss. So deterring either side from pressing the issue may prove difficult.

### **IRRATIONAL MINDS**

The logic of deterrence also depends a great deal on the people in charge. Research in cognitive science suggests that political leaders are unusually optimistic and overly confident in their ability to control events—the very traits that helped them come to power. Given their built-in optimism, they are also prone to doubling down in the face of failure instead of cutting their losses. Needless to say, any one of these characteristics can undermine deterrence. Assuming that uncertainty will resolve itself in one's favor inflates the anticipated gains while reducing projected losses, making a risky path of action far more enticing.

This bias for optimism may be especially pronounced when the leader in question is a personalist dictator. To rise to the top in a cutthroat political environment, such leaders must be extremely risk tolerant and believe they can beat the odds. Once in power, they are often surrounded by sycophants who feed their egos and self-images as skillful strategists. Excessive optimism may partly explain Adolf Hitler's risky decision to remilitarize the Rhineland and annex Austria and Czechoslovakia while Germany was still weaker than France, Russia, and the United Kingdom. It may also provide some explanation for Joseph Stalin's attempt to cut off U.S. access to West

Berlin at a time when his own country was in ruins and the United States enjoyed a nuclear monopoly. Saddam Hussein's willingness to take on the United States, not once but twice, suggests a propensity for high-stakes gambles, as does Mao Zedong's decision to plunge China into the Korean War barely a year after he seized power.

Indeed, the very notion that all humans share the same cognitive machinery, the same rational hard-wiring, is turning out to be just that: a notion, not a fact. Research in the behavioral sciences has found that one's cultural environment can lead to dramatic differences in one's cognitive processes, including in the ways people understand equity, costs, benefits, and risks.

Economics experiments show these differences in action. In the so-called ultimatum game, for instance, Player A is given an amount of money—say, \$100—and is told to offer some of the cash, anywhere from \$1 to \$100, to Player B, who can accept the payout or reject it, in which case both players leave empty-handed. American subjects typically agreed on something close to a 50-50 split. When they were in the role of Player B, they were more likely to reject offers that were significantly less than a rough split of the money, even though accepting any offer above zero would have improved their financial situation. In some less developed societies, however, such as found in parts of Central Asia and Latin America, those in the Player A position were often far less charitable, yet their Player B counterparts rarely refused even much lower amounts. And in other tests involving societies in Central Asia, East Africa, and New Guinea, those on the receiving end at times refused the money even when offered more than half the cash.

Individuals, in other words, are not necessarily utility-maximizing machines that rationally pursue material gain and expect others to do the same. They are prepared to reject what they perceive as unfairness or slights to their personal honor, even at a substantial cost to themselves. This is why leaders sometimes reject win-win deals in favor of seemingly irrational outcomes in which both sides lose.

The implications for deterrence are sobering. The 1962 Cuban missile crisis is a case in point. What motivated Soviet Premier Nikita Khrushchev was partly his sense that the balance of U.S. and Soviet

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overseas missile deployments was unfair. The United States had positioned nuclear-armed missiles on the Soviet Union's southern flank, in Turkey, so Khrushchev expected U.S. leaders to tolerate the deployment of Soviet missiles in Cuba. When Kennedy demanded that Khrushchev remove the missiles from Cuba, both leaders found themselves playing a high-stakes version of the ultimatum game: Kennedy offered a guarantee that the United States would not invade Cuba in exchange for the Soviet Union's withdrawal of the missiles—a mutually beneficial outcome, albeit with a modest payout to the Soviets. Should Khrushchev refuse, the ultimate lose-lose outcome—war—appeared likely.

Khrushchev's choice should have been easy. Given the United States' enormous nuclear advantage over the Soviet Union, the U.S. missiles in Turkey were a nonissue. But because Khrushchev felt pressure to demonstrate to his colleagues in the Soviet Presidium (and, one suspects, to himself) that he had been treated fairly, the missiles in Turkey became a sticking point in negotiations to resolve the crisis. In the end, Kennedy committed to quietly withdrawing the missiles from Turkey, the Soviets removed their missiles from Cuba, and war was averted. The lessons of the episode are clear: even in matters of life and death, perceptions of fairness matter, and failing to account for them can push countries to the brink of nuclear war, overwhelming the rational calculus that underpins deterrence.

## MIND THE GAP

Given all these theoretical and practical limitations, it may appear as if deterrence should be discarded altogether, at least as far as defense policy and strategy go. But to paraphrase Winston Churchill, deterrence may be the worst form of defense, except for all the others.

Yet policymakers must rethink their countries' deterrence strategies to account for changing conditions: the challenge of multipolarity, the introduction of advanced weaponry, and new knowledge about the psychology of decision-making. Any attempt to buttress deterrence must address these factors rather than wish them away.

For the United States, this means undertaking a comprehensive assessment of the military balance of power. This requires a better understanding of how the primary targets of U.S. deterrence strategy, China and Russia, calculate the military balance themselves and, by extension, the costs and risks associated with taking aggressive

action. U.S. analysts, for example, tend to assess the strategic balance of power by focusing primarily on nuclear weapons. Their Russian counterparts, on the other hand, also incorporate ballistic missile defenses, early warning systems, cyberweapons, and precision-guided conventional weapons on strategic delivery systems into their assessments. Chinese strategists usually take a similarly comprehensive view of the strategic balance.

At a more theoretical level, policymakers must change how they think about escalation. Today's strategists still use the metaphor, developed during the Cold War, of an escalation ladder, whose rungs represent the gradual and linear stepping up of a war from the lower level of conventional conflict up until nuclear exchanges. In the age of precision munitions and cyberattacks, this linear metaphor is badly in need of revision. What will emerge may look less like a ladder than like a web of crosscutting paths. At each intersection, escalation in one domain, be it cyberspace, the seabed, or space, could trigger an escalatory response in another. This intersectional model would allow the United States to identify areas where it enjoys an advantage over its rivals and areas where it needs to take steps to strengthen deterrence.

The United States will also have to find ways to buy back warning time for incoming attacks and improve its ability to trace their origins. Eventually, advances in artificial intelligence and "big data" may prove useful for promptly detecting an attacker's fingerprints. By causing prospective aggressors to lose confidence in their ability to act with anonymity, such tools would enhance the threat of punishment and thus strengthen deterrence.

To reduce the uncertainty surrounding new, untested capabilities, the U.S. military must also train its forces for a wider range of conflict scenarios. Since 9/11, U.S. forces have devoted most of their attention to counterterrorism and counterinsurgency training, rather than the challenges posed by great-power rivals. Conducting realistic exercises at the operational level of war—the level at which military campaigns against advanced military forces are conducted—can reveal much about the effectiveness of various military doctrines, force structures, and capabilities.

As for human nature, there is of course little that can be done to change that. But policymakers should at least be aware of how humans make decisions under conditions of risk. This does not mean they must

immerse themselves in the behavioral and cognitive sciences any more than their predecessors at the dawn of the nuclear age had to develop a deep understanding of quantum physics. It does, however, mean they must have a clear awareness of what these fields' findings imply for a deterrence strategy's prospects for success. In particular, it is worth knowing what individual opponents, especially dictators, most value and fear losing. Such knowledge allows leaders to fine-tune their deterrence strategies based on punishment.

Since World War II, U.S. defense strategy has relied on communicating to rivals that any aggression would either fail or provoke a devastating counterattack—deterrence in a nutshell. The strategy's success until now has convinced many leaders in Washington that a major war is unlikely. In their eyes, deterrence is assured and needs little strengthening. But as revisionist great powers emerge and military competition expands to include new weaponry and unfamiliar domains, effective deterrence is becoming more and more challenging. The fears that once spurred strategists and politicians to embrace deterrence are still relevant. A new major-power war could still exact a horrific human and material toll, and U.S. policymakers are right to look for strategies to deter such a conflict. But doing so will require, above all, that they not take deterrence for granted. ●

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