CHAPTER1

Power Politics in the Nuclear Age

The history of world politics is filled with accounts of powerful groups using their military might to conquer and dominate their neighbors. The weak lived in fear of the strong. Yet, this pattern appears to have changed abruptly with the invention of nuclear weapons, which appear to make war prohibitively costly and futile. Even otherwise weak defenders, if armed with nuclear weapons, seem able to deter the strongest aggressors—since the benefits of any attack would likely be greatly [1]

outweighed by the costs of nuclear retaliation.

This logic of deterrence suggests not only that countries armed with nuclear weapons can no longer fight each other but also that they can abandon all sorts of other competitive behaviors that have long defined world history. If nuclear weapons make conquest impossible, then nuclear-armed countries can feel fundamentally secure. If they are secure from foreign threats, then these countries no longer need to worry about the economic or military growth of rivals, nor do they need to build powerful alliances, engage in arms races, or compete over strategic territory. Those traditional, balance-of-power strategies aimed at ensuring national survival are no longer necessary when survival is supposedly guaranteed by nuclear weapons. In short, the nuclear era should not merely have fewer major wars, it should be a markedly more peaceful world, free of intense international hostility and competition.

Yet, any observer today can see that nuclear-armed countries have not abandoned security competition. Political tensions and preparations for military conflict continue to exist among all of the nuclear powers: the United States, Russia, Great Britain, France, China, Israel, India, Pakistan, and North Korea. The absence of great power war in the nuclear age is certainly consistent with the logic of nuclear deterrence, but the peaceful transformation of international politics—built on the security provided by nuclear weapons—has failed to materialize.

Given that nuclear weapons are uniquely effective instruments of deterrence, why have they *not* transformed international politics? Why do nuclear-armed countries continue to compete for power, allies, strategic territory, and military superiority in an era in which nuclear weapons provide their core security? Why do power politics endure in the nuclear age?

In this chapter, we analyze the two main explanations for why nuclear weapons deter war so effectively: the immense destructiveness of these weapons and their propensity to create stalemate. Differentiating those two explanations is crucial for understanding the main puzzle of the nuclear age: why geopolitical competition remains so intense. Specifically, a careful analysis of the foundations of nuclear deterrence points to the need to investigate the nature of stalemate: how stalemate is created, how it is maintained, and what behaviors are actually checked by nuclear stalemate.

We then examine the historical record of the nuclear age. We show that the patterns of international relations since 1945 largely contradict the idea that nuclear weapons transform geopolitics. Finally, we outline our explanation for why intense security competition endures despite the shadow of nuclear weapons. The answer stems from the inherent challenge countries face in establishing and maintaining deterrence under nuclear stalemate.

The Logics of Nuclear Deterrence

Throughout history—and to this day—the primary effect of new military technologies has been to make soldiers more effective in battle. But nuclear weapons, it is widely believed, have had a fundamentally different impact on international politics. Rather than offer combatants a better way to fight, nuclear weapons have greatly enhanced deterrence. What is it about nuclear weapons that makes deterrence so robust? Why are nuclear weapons the ultimate instruments of deterrence, rather than just the most potent tools of war?

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The most obvious explanation for the unique deterring power of nuclear weapons lies in their vast destructiveness. But this explanation is insufficient. Although the immense destructiveness of nuclear weapons undoubtedly gives leaders pause in a

way no military innovation ever has, the fundamental difference between nuclear weapons and all other instruments of war is rooted in their propensity to cause stalemate.

The splitting of the atom marked a dramatic increase in the level of destruction that could be inflicted by a single weapon. At the dawn of the nuclear era, a large conventional bomb could destroy a single building, bunker, or bridge. In contrast, even the most basic atomic weapon—like the one used by the United States against the Japanese city of Hiroshima at the end of World War II—could do vastly greater damage. That "Little Boy" fission bomb destroyed 3 square miles of the city. By the [3]

mid-1950s, a typical "thermonuclear" weapon could destroy roughly 75 square miles, an area larger than most cities. Not surprisingly, when analysts seek to understand the unique deterring power of nuclear weapons, they are often drawn to the enormous leap in destructiveness.

The destructiveness logic faces a significant limitation, however, in that war was often staggeringly destructive *before* the nuclear age—yet war was endemic. Kenneth Waltz, in distinguishing the nuclear from the prenuclear era, wrote that "countries [4]

armed with conventional weapons [know] that even in defeat their suffering will be limited." But that claim is simply wrong. For most of human history, defeat on the battlefield was often total because it was a prelude to mass enslavement, torture, and slaughter.

[5]

Massacres have been an integral part of warfare throughout history. For example, accounts of the Peloponnesian War in the fifth century BC are filled with episodes of brutality against defeated populations. Thucydides's description of the Athenian siege of Melos is notable for the matter-of-fact tone used to describe the final outcome: "The Melians surrendered [6]

unconditionally to the Athenians, who put to death all the men of military age … and sold the women and children as slaves." For the people of Melos (and those of Aegina and Scione, who were also massacred by Athens) there was nothing limited about defeat. Even in cases in which the Athenians showed mercy after military victory, they still typically sold the women [7]

and children of defeated cities into slavery.

[8]

The brutality of the Peloponnesian War was unexceptional. Genocide was common in the ancient world. Even when total annihilation did not occur, enslavement often did. Alexander the Great's armies either massacred or enslaved the citizens of defeated cities like Persepolis, Tyre, and Thebes. Rome defeated Carthage, slaughtered its men, burned the city to the ground, and enslaved its women and children. Roman legions routinely massacred the inhabitants of the cities they conquered, a practice that declined only when Rome began to allow its soldiers to keep the proceeds from the sale of seized slaves. The Mongols and other great conquerors broke their enemies' will to resist through relentless brutality, annihilating all the inhabitants of any city that resisted in order to terrorize neighboring peoples into acquiescence.

The crucial point is that although defeat in war was often total, wars continued. Over and over again, risk-acceptant leaders marched their soldiers off to war, knowing that if they failed the consequence could be their total destruction.

In more modern times, war remained staggeringly destructive, yet it continued. In terms of economic costs and lives lost, World War I was the most destructive war in European history, until it was superseded only twenty years later. The horrors of World War II are well known. Nazi Germany carried out mass murder and genocide at home and abroad. Imperial Japan brutalized millions of Chinese, Koreans, and other occupied populations. But then the instigators of war paid for their aggression. The United States and United Kingdom firebombed German cities, and the United States burned down sixty-four of the sixty-six largest cities in Japan—before dropping atomic bombs on Hiroshima and Nagasaki. The Soviet Union unleashed mass vengeance against German civilians in the war's final stages, as the Red Army drove to Berlin and sacked the city. In short, the costs of fighting and losing in the prenuclear era were often horrific. Yet the possibility of suffering such terrible losses did not deter the combatants from going to war.

War in the prenuclear age was total in another sense as well: defeated leaders often personally suffered terrible consequences when their armies were defeated. Melian statesmen were killed alongside ordinary citizens. At the conclusion of the civil wars that ended the Ming dynasty, the emperor had his palace guards murder his own senior advisors, and then hanged himself to avoid a worse fate at the hands of his enemies. Russia's tsar Nicholas paid dearly for his defeat in World War I: he was killed, and to eliminate possible successors, his enemies hunted down and murdered his children and extended family, ending the Romanov dynasty. Not surprisingly, murdering a defeated enemy's children was standard practice among hereditary monarchs. And even when there is no threat of succession, leaders' children are often drawn into war. As Soviet armies closed in on Berlin at the end of World War II, senior Nazi leaders murdered their own families and then committed

suicide to escape the retribution they knew would follow defeat. More recently, Iraqi leader Saddam Hussein, stripped of power and with his sons already killed, was hanged on the gallows, surrounded by jeering enemies. Libya's ruler, Muammar [9]

Qaddafi, was pulled from a culvert, beaten, reportedly sodomized, and then shot to death.

This ghastly account challenges the notion that nuclear weapons are uniquely effective tools of deterrence because they make war so destructive. In contrast to what Waltz claimed, the consequence of defeat was not "limited" in the prenuclear era; wars were barbaric. And yet—despite these horrors—statesmen sent their legions off to fight, time and again. Compared with the old-fashioned punishment—meted out on the battlefield or on the torture rack—what is worse about a bright flash and a quick death? The Japanese victims at Hiroshima and Nagasaki were not worse off than most of those throughout history who [10]

endured slavery, torture, execution, and—worst of all—the knowledge that loved ones faced the same fate.

The claim that nuclear weapons mark a sea change in history—from the era of limited violence to one of mass destruction—is incorrect. For leaders, as well as their children, friends, and fellow citizens, military defeat has often meant complete catastrophe. Yet, despite such terrible consequences, human history reads like a never-ending parade of wars. The "destructiveness" of nuclear weapons, therefore, cannot adequately explain the unique deterrent power of these weapons. There must be another logic at work. That mechanism—the logic of stalemate—is the key to explaining deterrence, and it constitutes the foundation for arguments about a nuclear revolution.

Nuclear weapons are uniquely deterring because they appear to make victory in war impossible. They are the ultimate tools of stalemate. In the past, war was hell—but primarily for the defeated. Melos was razed; Athens was not. Leaders in the prenuclear world could rationally launch wars, even when they knew the consequences of losing would be terrible, because they had a chance to win, and thus might avoid the worst of war's consequences. What is unique about the nuclear age is not that war can now be devastating. Rather, it is that both sides—strong and weak, victor and vanquished—can be destroyed if [11]

war occurs. As often described, the defining feature of nuclear deterrence is not "overkill" but "mutual kill."

In the prenuclear era, leaders could rationally embark upon war, despite the horrors recounted above, because victory was possible and could yield enormous rewards. Popular accounts of warfare often depict aggression as senseless, partly because the longest and most destructive wars are the ones that receive the most attention. But highlighting those famous, long conflicts distorts history; many wars—especially the quick, one-sided affairs between unequal opponents—have led to enormous gains. The Roman empire ruled the region around the Mediterranean because it won a series of lopsided battles over small, weak neighbors. Spain and then Britain ruled much of the world because they, too, easily defeated weaker peoples who inhabited valuable lands. The territory of the United States—stretching from the Atlantic to Pacific Oceans—resulted from one of the most successful campaigns of conquest in history. The U.S. expansion is often portrayed as an uncoordinated act, driven by pioneers chasing land, minerals, and markets. It does not seem like a *military* campaign, even though there were plenty of battles, because the fight against Native Americans was so one-sided. But that is the point: war could pay handsomely in the nonnuclear era when battles were unfair fights. Most campaigns that went extremely well for conquerors are not even remembered as "wars."

Although many successful wars were waged against vastly weaker parties, even conventional wars between great powers sometimes resulted in low-cost victories. The British defeated the Spanish Armada at the cost of a few ships, granting London naval supremacy for decades. Tokyo prevailed decisively in the Russo-Japanese War, opening the door to its conquests in Korea and China. Even World War II, one of the most destructive wars in history, might have resulted in a low-cost victory for Germany if it had halted its campaign in the summer of 1940, just after occupying Poland, Norway, Denmark, France, and the Low Countries. That would have been one of the most one-sided great power wars in European history, putting Germany in [12]

control of the European continent from Poland to the English Channel.

But the creation of nuclear weapons at the end of World War II undermined the logic of conquest. The terrible consequences of war, which in the prenuclear era were principally borne by the defeated, can now be imposed on the victors as well. Specifically, if both adversaries have deliverable nuclear weapons, even stunning battlefield successes would still leave the victor exposed to devastating retaliation. In this sense, major war between two nuclear powers has not become "unthinkable"—that is, too horrible to contemplate—as much as "unwinnable."

What is it about nuclear weapons that create this condition of mutual kill and the impossibility of victory? The stalemating qualities of nuclear weapons stem from three characteristics. First, nuclear weapons are small. A modern nuclear bomb or [13]

missile warhead is only a few feet long. Even a warhead on a road mobile missile launcher is only the size of a tractor trailer. Because of their small size, nuclear weapons are difficult to locate and destroy with a disarming strike. Second, nuclear weapons are unique in the amount of explosive power they pack per weapon. As a result, a disarming strike would need to

destroy nearly every target to succeed. An attack that left the victim with “only” a dozen functioning weapons would leave him [14]

with the capability to inflict terrible damage in response. Third, nuclear weapons are relatively easy to deliver. Because nuclear weapons are small and relatively lightweight, they can be delivered by a wide range of methods, including ballistic missiles, cruise missiles, aircraft, and artillery. Furthermore, ballistic missiles are difficult to shoot down. And with the combination of radar-evading stealth technologies and computer-controlled low-altitude flight, cruise missiles (and possibly aircraft) will likely remain reliable delivery systems into the future. In the prenuclear era, a country that was losing a war usually could not punish the victor because the losing side typically would have lost control of the air, the seas, and key terrain. But because modern ballistic missiles can reach their target regardless of whose air force controls the skies (and in many cases this is true for stealthy cruise missiles and aircraft, too), countries in the midst of losing a conventional war can still strike back and destroy the prospective victor.

These three attributes of nuclear weapons—their small size, destructive power per unit, and ease of delivery—are the foundations of stalemate. The difference between nuclear weapons and virtually all other instruments of warfare is that they allow the weak and defeated to inflict unbearable pain on the strong and victorious. They therefore make real victory appear impossible.

Clearly, the two logics of deterrence work together. The stalemate logic tells us that in a nuclear war, both sides will suffer. The destructiveness logic tells us that they will suffer a lot. But by focusing on what makes nuclear weapons uniquely deterring—their strong propensity to create stalemate—we can now explore the puzzles of the nuclear age. Has the stalemating effect of nuclear weapons pacified international politics? If not, why not?

The Puzzle of the Nuclear Age

Leaders have always feared attack and conquest. Hence, they have always been concerned about shifts in the balance of economic and military power between their own countries and those of potential adversaries. Similarly, leaders have always been concerned that adversaries might forge new alliances to amplify their power; in response, leaders sought to marshal their own alliances and maneuver diplomatically to weaken opposing blocs. In the age of conventional warfare, leaders worried that their enemies might quickly build or develop weapons to dominate the battlefield, so they engaged in arms races to keep their own military forces at the pinnacle of capability. And in times of both peace and war, countries competed to control strategically vital territory, such as land near key waterways and invasion routes. The resulting competition for economic supremacy, allies, military primacy, and strategic territory frequently exacerbated political tensions and helped bring about war.

The logic of nuclear deterrence suggests that these fears should no longer be salient in a world of nuclear-armed states. For the reasons explained above, nuclear weapons appear to make countries fundamentally secure from attack and conquest. As a result, countries can stop worrying about the relative balance of power, engaging in arms races, or competing for alliance partners and strategic territory. They can remain calm even as others rise economically. They can reduce their dependence on allies for security. They need not obsess about even large changes in the balance of military capabilities. And they need not value territory for its security implications. Neither greater wealth, better allies, mightier conventional forces, nor superior control of waterways and invasion routes are important determinants of victory and defeat when countries are armed with nuclear weapons. Figure 1.1 depicts the causal logic and empirical predictions underpinning the view that nuclear stalemate has transformed international politics. In theory, nuclear weapons produce stalemate, which not only prevents war but also mutes, reduces, and mitigates other behaviors that drive international competition and conflict.

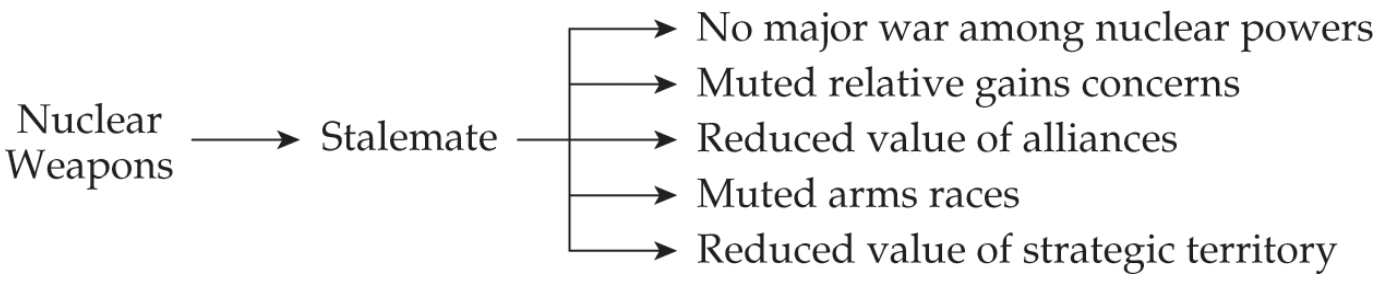

Figure 1.1. The consequences of stalemate?

But despite the apparent logic of these predictions, the realities of the nuclear age paint a different picture. Although nuclear weapons have proven to be excellent tools of deterrence—helping to prevent major war—nothing resembling a revolution in international politics has occurred.

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According to most deterrence experts, nuclear-armed countries are highly unlikely to fight each other. "The probability of major war among states having nuclear weapons approaches zero," according to Waltz.[16] Bernard Brodie argued that nuclear weapons were "a powerful inhibitor to aggression," and that the sole purpose of militaries from that point on would be to avert wars, not fight them.[17] Even limited aggression is thought to be implausible in the shadow of nuclear weapons because the possibility of escalation to nuclear war will deter such provocations.[18] As Waltz writes, "If states can score only small gains, because large ones risk retaliation, they have little incentive to fight."[19] Robert Jervis concurs: "If statesmen are sensible, wars among the great powers should not occur."[20]

The evidence from the nuclear era mostly supports this expectation. No two nuclear-armed states have fought a major war against each other.[21] Most importantly, great power wars—the most destructive types of conflict—disappeared just after nuclear weapons were created. The timing of the disappearance is striking: the world suffered through at least five great power wars (roughly one every twenty years) during the century leading up to the nuclear age, but none in over seven decades since.[22] The abrupt halt to major war is even more telling because the Cold War contained many catalysts for conflict: the superpowers had major ideological differences, held competing universalist visions for the world, demonized each other, and prepared intensely for conflict. Yet peace prevailed—or, to be more precise, major war was prevented. Nuclear deterrence deserves substantial credit for this outcome.[23]

It is worth noting, however, that some evidence raises questions about the reliability of the peace-inducing effects of nuclear weapons. For example, on several occasions nuclear and nonnuclear countries have used limited force against nuclear-weapon states. In 1969, Russian and Chinese ground forces fought over disputed territory, killing hundreds of soldiers. In 1982, Argentina seized the Falkland Islands, a British possession, triggering a significant naval clash in the South Atlantic.[24] During the 1991 Persian Gulf War, Iraq launched forty-two conventionally armed Scud missiles at Israeli cities. In each of those cases, the stakes for the nuclear-armed power were relatively modest, and hence the attacks were unlikely to trigger nuclear escalation. Nevertheless, the cases should not be completely dismissed; even limited attacks on nuclear-armed countries should not occur because they run some risk of catastrophic nuclear escalation. But the attacks did occur.

Two other wars raise bigger puzzles. In 1950, China intervened in the Korean War, launching a major ground offensive that killed thousands of American soldiers in the initial battles. The subsequent fighting over the next two years resulted in more than thirty thousand U.S. fatalities. By inflicting such serious losses on U.S. forces, and lacking a nuclear deterrent of its own, China took a major risk—outside the bounds of caution that the logic of nuclear deterrence suggests.[25] The other notable case occurred in 1973, when Syria and Egypt launched a coordinated surprise attack on nuclear-armed Israel. The Egyptian forces crossed the Suez Canal and advanced into the Sinai Peninsula, while Syrian tanks poured into the Golan Heights on Israel's northern frontier. The Syrian army nearly swept the surprised Israeli defenders from the Heights, and Israel had almost no additional ground forces between the Syrian army and Tel Aviv. The two-pronged attack left Israel exposed to a complete military defeat. The seeming recklessness of the Egyptian-Syrian attack on nuclear-armed Israel belies expectations of caution and restraint when facing nuclear enemies.[26]

To be clear, the idea that nuclear deterrence prevents major wars between nuclear-armed countries is largely supported by the evidence. Given the frequency of great power wars before the nuclear age, this is significant. However, the anomalies raise important questions: Why were China's leaders confident they could inflict tens of thousands of U.S. fatalities without triggering a U.S. nuclear response? And why did Egypt and Syria think it was safe to launch a major, two-pronged surprise attack on Israel without risking escalation? Most importantly, if countries are willing to take such large risks when confronting

nuclear-armed enemies, should nuclear-armed countries feel fundamentally safe? If not, why should one expect countries to abandon other competitive behaviors that they have historically adopted to protect themselves?

REDUCED CONCERN ABOUT RELATIVE GAINS

One of the most pernicious consequences of international anarchy is the concern it generates among countries about the relative balance of power. Leaders worry about the growth of military capabilities of other states because that power might someday be turned against them. Even increases in other countries' economic power is a major concern, since wealth is the building block of military might. As a result, shifts in the distribution of power—especially the rise of a new major power—tend to trigger fear, suspicion, and rivalry.[27]

One would expect the invention of nuclear weapons to greatly mitigate relative-gains concerns. If nuclear weapons make war unlikely and conquest nearly impossible, nuclear-armed adversaries no longer need to worry about shifts in the military or economic balance of power, because one side's "gain" cannot undermine the fundamental security of the other. In fact, prominent scholars of deterrence made this point. As Waltz argues, "Nuclear weapons eliminate the thorny problems of estimating the present and future strengths of competing states and of trying to anticipate their strategies."[28] McGeorge Bundy emphasized that what matters most in the nuclear age is not military superiority or the exact state of the nuclear balance, but simply the nuclear danger.[29] According to Jervis, in the nuclear age "there should be only tenuous links between the details of the military balance and political outcomes."[30] And if relative power balances do not matter, then neither should any miscalculations about them.[31] In short, the security afforded by nuclear weapons should significantly diminish the importance of relative power.

In reality, countries have remained keenly concerned about relative gains throughout the nuclear age. During the Cold War, U.S. leaders tracked trends in the Soviet economy and worried greatly when there were signs that Soviet power was growing. In the early 1950s, fears about the growth in Soviet power led the United States to seriously consider preventive war against the Soviet Union.[32] Later in the decade, Soviet achievements in space exploration caused panic in the United States, rooted in the feeling that the United States was "falling behind" in science and technology. By the late 1960s U.S. intelligence and Western economic experts began to realize that the Soviet economy was running out of steam, and that there was little that Soviet leaders could do to prevent such stagnation and decline.[33] Yet, rather than be content with such a shift in the balance of power, the American response was to extend its gains. Leaders in Moscow recognized their inability to keep up with the West.[34]

Soviet worries about the balance of relative power eventually played a major role in triggering *perestroika* and *glasnost*, the end of the Cold War, and the collapse of the Soviet Union.[35]

Relative-gains concerns were not limited to the Cold War competition between the superpowers. In the 1980s, the United States grew alarmed about the economic growth of its ally Japan and began to wonder if it might pose a strategic threat to U.S. interests in the Pacific.[36] Nuclear weapons have not prevented India from fearing China's economic rise, or Pakistan from worrying about India's growth. Israel is far ahead of its neighbors in terms of economic and military might, but its strategic planners worry about long-term demographic trends in the Middle East. Russia is concerned about the relative economic growth of potential adversaries to the west (NATO) and east (China); and, of course, the United States is very concerned about the rise of China.

The persistence of relative-gains concerns in the nuclear age is a puzzle. The possession of nuclear weapons is supposed to ensure countries' security in the present and the future. But those states continue to behave as if their core security concerns depend on a favorable balance of power.

The same logic that links nuclear weapons to reduced concerns about relative gains also suggests that arms races should be muted in the nuclear era. If nuclear weapons make those who possess them secure, then there is little reason for countries to engage in costly competitions for greater military capability. "Nuclear weapons make it possible for states to escape the [37]

dynamics of arms racing," according to Waltz. Nuclear-armed states do not need to match each improvement in an adversary's arsenal, or ensure their stockpiles are equal in size. "Numbers are not very important," according to Waltz. "To [38]

have second-strike forces, states do not need large numbers of weapons. Small numbers do quite nicely." Jervis is more cautious than Waltz about the requirements for a secure second-strike arsenal, but he shares the same skepticism about the need for countries to arms race once they have built such a retaliatory force. Jervis writes, "When security comes from the absolute capability to annihilate one's enemy, then each side can gain it simultaneously. Neither side need acquire more than a [39]

second-strike capability and, if either does, the other need not respond since its security is not threatened." Nuclear weapons should diminish the need for conventional arms races as well. If a nuclear deterrent provides the ultimate protection against defeat in war, then that arsenal should deter, whether the threat comes in the form of nuclear or conventional attack. A world of nuclear-armed countries, in short, should be one with highly muted arms racing.

The history of the nuclear age does not support these predictions. In fact, the nuclear arms race during the Cold War was one of the most intense military competitions in history, as the superpowers spent trillions of dollars expanding their arsenals and improving their weapons in reaction to the moves of their adversary. Many prominent scholars of deterrence were puzzled by this anomaly at the time, and criticized the arms race as unnecessary and illogical. As Charles Glaser argues, "The nuclear

arms race should have ground to a halt and the full spectrum of the most threatening nuclear forces should have been limited." [40] [41]

But the struggle for nuclear supremacy continued through the last days of the Cold War. Similarly, in *The Illogic of American Nuclear Strategy*, Jervis argued that U.S. leaders' willingness to build excessive amounts of conventional and nuclear power, including robust counterforce capabilities, must have reflected ignorance of the nuclear revolution's implication for arms racing.

No other nuclear dyad has produced the relentless competition of the Cold War, but arms-race dynamics are unfolding in other nuclear standoffs as well. Pakistan and India have been much more restrained than the Cold War antagonists. And, despite its fraught relationship with the United States, China still fields a relatively modest nuclear arsenal—what it calls a [42]

"lean and effective" deterrent. Nevertheless, arms racing is brewing in those relationships too. China is modernizing its nuclear arsenal in ways specifically designed to bolster its survivability in the face of growing U.S. offensive capabilities. As U.S. capabilities continue to grow—in nuclear-delivery systems, conventional strike capabilities, and advanced sensors—China will be forced to continue to react. For their part, India and Pakistan are expanding their nuclear arsenals with more warheads, delivery systems, and fissile material production capability. While some analysts are hopeful that the South Asian arms race might level off after the current round of weapons systems are deployed, India is increasingly putting emphasis on its strategic competition with China, which could result in significantly new nuclear capabilities being deployed [43]

over the next decade. This, in turn, would likely provoke an even faster nuclear buildup by Pakistan.

The history of conventional arms racing during the nuclear era also contradicts the expectations that nuclear weapons would ensure their owners' security. To be sure, scholars have long debated how to define and measure the intensity of "arms racing," but by any account the Cold War entailed the greatest conventional arms race in history. NATO spent approximately $20 trillion on conventional forces, while the Soviets and their Warsaw Pact allies raced to field a massive military force to oppose NATO. But the Cold War race is hardly unique. China is currently engaged in a major military competition with the United States for superiority in the Western Pacific. The ongoing conventional arms race pits Beijing's anti-access capabilities against U.S. power-projection forces. For its part, China is developing better ways to locate U.S. air and naval forces in East Asia and strike them with long-range weapons. The United States is countering with better ways to blind China's sensors, disrupt its [44]

command and control, and destroy its long-range strike platforms. The United States–China relationship does not appear to be the sort of calm, mutually secure one that nuclear weapons are supposed to produce.

In sum, nuclear weapons have not eliminated arms races, and it is not even clear that they have dampened them. For many

years the phrases “nuclear weapons” and “arms race” were nearly synonymous. Other nuclear dyads have not reached the same intensity as the Cold War competition, but even those relationships reveal serious concerns among the antagonists about the survivability of their nuclear forces. And competitions in conventional military power continue among nuclear armed states. With respect to arms racing, international politics appears to be business as usual.

REDUCED VALUE OF ALLIANCES

The same logic that posits the end of relative-gains concerns and decline in arms racing predicts the withering of alliances in the nuclear age. Before nuclear weapons, international alliances were crucial, as they allowed states that faced common threats to pool their resources. Although relying on allies entailed other risks (for example, the risks of entrapment or abandonment),[45] confronting threats without allies was often far costlier and dangerous. With nuclear weapons, countries can seemingly ensure their own security without taking on commitments to others or depending on pledges of assistance from abroad. “Since nuclear states easily generate second-strike forces,” Waltz explains, “they do not need one another’s help at the strategic level. Strategically, nuclear weapons make alliances obsolete.”[46] Jervis seems to agree, noting that alliances are less important in the nuclear age: “Defections by allies are therefore less damaging,” and nuclear states “should not permit their allies to drag them into excessively dangerous situations.”[47]

In reality, alliances appear to be just as relevant in the nuclear era as before. Throughout the Cold War, both the United States and Soviet Union relied heavily on their allies. U.S. and Soviet allies provided a large number of conventional forces, supplying manpower and, in the case of NATO, substantial financial contributions. Washington’s key allies in Europe, East Asia, and the Persian Gulf also provided valuable geography, including the forward bases, airfields, and ports that the United States needed to project power around the world. The logic behind those alliances was clear. Conventional war was still possible, so alliances were still necessary for all the reasons they always were—to share costs, pool resources, and provide access to strategically crucial territory.

This pattern continues today. In fact, U.S. alliances have grown since the Cold War, creeping eastward in Europe toward Russia; expanding throughout the Persian Gulf region; and spreading into new locations in East Asia. The United States is not alone in seeing strategic advantage in alliances; indeed, Russia clearly sees the expansion of NATO eastward as a threat to its security.[48] China has warned neighboring states like Vietnam about the perils of aligning with the United States, and appears to be trying to weaken or end the United States–Japan military alliance. In fact, Russia and China have taken steps to increase their cooperation in response to perceived U.S. and Western encroachment on their spheres of interest, evidence that alignment (and perhaps in the future, alliance) is still valuable in the nuclear era.[49] The United States uses its close military ties throughout the Persian Gulf to station military forces, military headquarters, and intelligence assets throughout the region. There is no indication that alliances are becoming less relevant in the nuclear era.

Had nuclear weapons actually ended the practice of countries aligning with strategic partners, the change would be “revolutionary” given just how big a role alliances have played in international relations throughout history. But that change has not occurred. The practice of seeking security and power through alliances is still going strong in the nuclear era.

REDUCED COMPETITION FOR STRATEGIC TERRITORY

Nuclear weapons should reduce the fierce competition over strategic territory that was so common in the prenuclear era. Groups have always competed for territory, to control it for their own advantage and deny it to their adversaries. Some lands were valued for what lay within: fertile soil or valuable minerals. Other territory was deemed “strategic” because it sat astride key transport routes, or because of its proximity to enemies or suitability for hosting military forces. Seizing those lands—to create buffer room or military bases—and denying them to one’s adversaries has been a core strategy in international politics.

By creating stalemate, nuclear weapons seem to greatly reduce the value of strategic territory, because the gain or loss of such territory (or resources tied to geography) has little effect on the balance of power. In an era in which nuclear weapons make countries fundamentally secure, countries no longer need to control the natural resources that permit them to sustain large military forces.[50] Whatever natural resources are necessary for economic purposes can be acquired on the global market, and need not be fought over on the battlefield. Controlling key transport routes should also be less important than in the past. Blockades once made sense, but starving a nuclear-armed state to induce its capitulation would be almost as foolhardy as invading it. Strategic buffer zones and territory that can host military forces near key enemies are also significantly devalued in

a nuclear world, because one simply does not need to project conventional force against distant rivals or fear they will do the same.[51] "Nuclear weapons can easily be hurled across great distances," Van Evera writes. "This makes geographic assets less significant. Wide buffer room cannot impede nuclear delivery, and the possession of distant bases does little to make it easier."[52]

Competition over territory beyond the homeland or the homeland of close allies is especially nonsensical. Since self-defense is much easier and conquest much harder in a nuclear world, nuclear-armed adversaries should "take a more relaxed attitude toward events in third areas, including the third world.… Whatever had been the strategic importance of the third world in a nonnuclear world, nuclear weapons have vastly reduced it."[53] In sum, according to this logic, nuclear states appear to have neither the offensive motivation to seize key bases, territory, or economic resources, nor the defensive motivation to stop others from doing so.[54]

The nuclear era does not resemble this predicted world. Much of the actual tension and conflict in the Cold War was about competition for control of territory. Western Europe was valued by the United States partly because of its economic potential, but also because of its location as a bulwark against Soviet expansion and its ability to host U.S. power-projection forces. Italy was crucial for projecting air and naval power into the Mediterranean. Turkey controlled the Dardanelles and bottled up the Soviet fleet in the Black Sea. Great Britain was a crucial ally because of its location as an offshore base from which the United States could fly bombers and build up forces in the event of a major war in Europe. Greenland and Iceland were also crucial for bottling up the Soviet navy in the Baltic Sea and keeping the North Atlantic sea lanes safe. Similarly, the Soviet Union valued its Eastern European allies partly as physical buffers between itself and the West.

Throughout the Cold War, the superpowers struggled for strategic terrain around the world. Both countries battled for influence in Egypt (Suez Canal) and Ethiopia (which sits astride the sea route to Suez and down East Africa). The United States built close ties with the Republic of South Africa and Liberia because those key locations for protecting shipping routes around Africa could have been essential for getting Middle East oil to the NATO allies if war closed the Suez Canal. The United States sought ties in the Persian Gulf region, first with Iran, and when that fizzled, by strengthening ties with Iran's enemies on the other side of the Gulf. The Soviets were playing the same game in Latin America, Southeast Asia, and the Middle East.[55]

The competition for strategic territory—and the resources it contains—continues to this day. It is not a coincidence that the Persian Gulf region has been the focal point of U.S. national security policy since the end of the Cold War. To be sure, terrorism drew the United States deeper into the Gulf region, as did proliferation concerns. But the U.S. focus on the Persian Gulf—in the wake of Iraq's seizure of Kuwaiti oil, or in response to Iran's threats to the Strait of Hormuz—was well established prior to both 9/11 and the focus on Iran's nuclear efforts. U.S. military plans in East Asia revolve around critical terrain. The U.S.-Japanese naval position in the Western Pacific is anchored by control over key islands (for example, in the Ryukyu Islands chain), which can be used to monitor Chinese naval movements in peace and war. The United States maintains naval dominance in the straits that control oil routes from the Middle East to East Asia (e.g., Malacca, Lombok, Makassar), much to China's consternation. Increasingly, the United States seeks to draw new allies into its orbit (Vietnam) and reinvigorate old military relationships (Philippines) to provide additional sites to locate U.S. military forces and sensors. China strongly objects, and has intimated that its neighbors would be unwise to ally with far-away powers. Russia, despite having a formidable nuclear arsenal, has behaved as if it cares deeply about strategic terrain: it vociferously opposed NATO expansion up to its border, and it launched two wars—against Georgia in 2008, in the strategically important Transcaucasia region, and against Ukraine in 2014, which resulted in the seizure and annexation of Crimea. Russia, the United States, and China are ramping up their competition for strategically valuable resources and transit routes in the Arctic. Nuclear weapons have not ended the competition for strategic terrain.

A WORLD TRANSFORMED? TALLYING THE EVIDENCE

Just as deterrence theory predicts, nuclear weapons seem to be excellent tools for preventing war. Based on the evidence since 1945, these weapons appear to strongly inhibit one of the most destructive human activities: war among the world's great powers. However, even on this score—the prevention of war—there are some reasons to be concerned. The instances of countries attacking nuclear-armed states over limited objectives suggest there is danger of escalation from conventional to nuclear conflict. The compelling logic of stalemate—that neither side can win—does not help states identify precisely how much they can harm a nuclear-armed adversary before triggering a nuclear attack, or which side will step back first from the

brink during a limited, conventional conflict. To be clear, the case for the unique deterrent power of nuclear weapons is strong, but not as absolute as its advocates sometimes claim.

But the success of nuclear deterrence makes it all the more surprising that the nuclear age has been characterized by so much geopolitical competition. Relative-gains concerns, conventional and nuclear arms races, competition for allies, and rivalry for strategic terrain were defining features of the Cold War, and they continue to characterize international relations today. The basic contours of international politics in the nuclear era would be entirely familiar to nineteenth-century diplomats.

Leading scholars of nuclear deterrence recognized the empirical anomalies we highlight here. Waltz, Jervis, Brodie, Glaser, Van Evera, and other experts in nuclear deterrence were puzzled that the nuclear-armed superpowers appeared to be employing geopolitical strategies from the prenuclear age throughout the Cold War; those analysts criticized what they saw as excessively hawkish or competitive policies by the United States. But the behaviors they felt were unnecessary in the nuclear age defined the Cold War struggle and continue to define international politics today.

Herein lies the core puzzle: Why haven't nuclear weapons done more to mitigate international competition? Why haven't they done more to pacify relations among the major powers? Is it that despite over seventy years of experience, leaders still fail to comprehend the logic of the nuclear era? Or is there something wrong with our understanding of nuclear deterrence itself? We argue that the answers to these broader questions lies in the nature of nuclear stalemate. We explore the concept of stalemate, and its implication for geopolitics, in the sections below—and then in greater depth in subsequent chapters.

Solving the Puzzle: The Nature of Stalemate

At first glance, it seems straightforward to assume that a weapon that tends to create stalemate—the condition in which [56]

countries are unable to defeat each other—would greatly mitigate international competition. But on closer examination, the ameliorating effect of nuclear weapons on international security competition depends on three assumptions about the nature of nuclear stalemate: (1) stalemate is easy to produce; (2) stalemate is nearly irreversible; and (3) stalemate effectively deters not just nuclear conflict but conventional war as well. If each is true, then acquiring nuclear weapons should solve a country's most fundamental security concerns and greatly reduce the incentives to compete. If any of those claims are wrong, the door to competition cracks open. And if all three of those claims about the nature of stalemate are wrong, then international politics in the nuclear era should resemble the world before these weapons were invented. We explain in the sections below why each of those assumptions is crucial to one's predictions about international politics in the nuclear age.

GETTING TO STALEMATE: HOW MUCH IS ENOUGH?

How much retaliatory capability must countries build to reliably deter nuclear attacks? Is it easy to establish nuclear stalemate? Will virtually any nuclear arsenal suffice? Or is the goal of creating a robust deterrent—one that will reliably deter nuclear attack in peacetime, during crises, and in the midst of conventional war—more demanding than simply building and deploying a few weapons? If so, how much more demanding?

According to one widely held view, stalemate is born as soon as countries acquire their first nuclear weapons. Small arsenals deter nearly as effectively as large ones because launching a nuclear strike against a country with *any* nuclear weapons would be foolhardy. In fact, according to this view, even vulnerable nuclear forces will create "enough" deterrence, because even the small probability of nuclear retaliation will dissuade any rational aggressor. Prominent deterrence theorists who extol the [57]

deterring power of "first-strike uncertainty" subscribe to this argument. According to a competing view, a robust deterrent requires much greater capability—enough to confront potential attackers with near-certain retaliation. The logic here is that nuclear deterrence must never fail, even in the most trying circumstances. It must deter in dark times—during crises and war, when fear, fatigue, and desperation tend to cloud leaders' judgments—and in the face of extraordinarily ruthless enemies. [58]

After all, only risk-acceptant leaders start major wars, so nuclear arsenals must be postured to deter *them.*

The implications of this debate for international competition are significant. If even small, possibly survivable arsenals are enough to deter, then nuclear weapons should dampen a wide range of competitive behaviors. In a world governed by the logic of minimum deterrence, after all, once a country acquires a few nuclear weapons it can relax. If even highly aggressive enemies will recoil from the mere possibility that an attack would trigger retaliation, then any nuclear-armed state will be fundamentally secure. No matter how much enemies improve their offensive capabilities, the possibility of retaliation will endure. In such a world, there is no need for arms racing, because the race is over once a country and its adversary possess small nuclear arsenals; it ends in a tie. There should be little concern about relative gains, because even if a country amasses greater economic capabilities, such capabilities cannot be turned into meaningful military advantage.

If, on the other hand, nuclear deterrence requires assured retaliation, then the nuclear age should see more enduring competition. The process of building a secure retaliatory force will often be drawn-out and fraught, as new nuclear states

progress through the many steps that distinguish an initial nuclear capability from a truly survivable force and as their adversaries eye such steps warily. Creating a survivable deterrent force may also unleash arms-race dynamics as new nuclear powers build retaliatory capabilities (probably based on worst-case estimates of an enemy's disarming capabilities), while their adversaries enhance counterforce options (to delay or prevent the onset of stalemate). And a world in which deterrence requires that arsenals be truly secure is one in which preventive wars are a recurring danger, each time a new nuclear-armed [59]

state begins to climb the ladder to survivability.

To be clear, even if robust deterrence requires assured-retaliation capabilities, nuclear-armed states can create a condition of stable nuclear stalemate. But if stalemate requires robust, survivable forces, nuclear-armed states should be expected to engage in arms races, pay attention to relative gains, and maintain interest in allies (to share costs or provide cover during their period [60]

of nuclear vulnerability).

ESCAPING STALEMATE: CAN IT BE DONE?

A second critical question relates to the persistence of stalemate: Can countries escape from the condition of mutual assured destruction (MAD) once it has been established? One view is that the balance of power among nuclear-armed states moves in only one direction—toward stalemate. Once countries have deployed enough capability to reliably deter their adversaries, there [61]

are no reasonable steps that those adversaries can take to break out of stalemate. But there is another possibility; survivability may be a two-way street. Perhaps investments in counterforce capabilities can pay off, and efforts to locate and destroy enemy nuclear forces can succeed. If so, arsenals that are safe from attack today may become vulnerable in the future.

This issue—whether stalemate is reversible—was the focus of intense debate during the Cold War, but never adequately settled. The conventional wisdom by the 1980s and 1990s was that there was no way to escape from the condition of MAD. Neither superpower was thought capable of launching a successful disarming strike. A minority of Cold War analysts disagreed, seeing promise in a range of emerging counterforce capabilities. They favored investing in advanced sensors that could locate Soviet nuclear targets during a war; accurate missiles and stealthy bombers to strike those targets; and missile defenses to protect the United States and its allies from any remnants of the Soviet arsenal. Yet, rigorous analyses of whether nuclear-armed adversaries could escape stalemate were rare, partly because of the polarized nature of Cold War foreign policy debates; partly because the superpower arsenals were so enormous that escaping stalemate was an extremely high bar; and partly because deterrence analysts did not know about many of the highly classified surveillance programs the United States was using to search for concealed Soviet nuclear forces.

The permanence or variability of stalemate is still a crucial question because the answer goes a long way toward understanding the effect of nuclear weapons on international politics. If stalemate is irreversible, then deploying a survivable nuclear arsenal should substantially mitigate a country's need to compete for security. After all, according to this view, such a country's arsenal will provide security today and into the future. Whether an adversary is gaining economic strength, gathering allies, or improving its weapons is therefore inconsequential. The fundamental security provided by nuclear weapons is enduring. Thus, countries that possess them can be calm in the face of growing adversary power, or eroding alliances, or the loss of strategically important territory.

If, on the other hand, the nuclear balance can meaningfully shift, then competition in the nuclear age will resemble prenuclear geopolitics. In such a world, there will be strong incentives for countries to arms race—to prevent adversaries from escaping stalemate and to pursue superiority for themselves. If stalemate is a two-way street, relative gains will still matter, because the rich and powerful will be most able to neutralize their adversaries' nuclear weapons. Alliances will still matter, as a means for pooling resources and projecting conventional and nuclear military power. And strategic territory will still matter, as a means to economic wealth and military dominance. If the nuclear balance of power between two states can shift in either direction—that is, toward stalemate or away from it—then most of the power-seeking behavior that has dominated international politics throughout history (such as containing rising powers, pooling resources with allies, impeding adversary alliances, and competing for strategic terrain) will continue to make sense.

DETERRENCE UNDER STALEMATE: HOW TO PREVENT CONVENTIONAL ATTACKS

For nuclear weapons to make countries feel safe enough to abandon the old geopolitical strategies, they must not merely deter nuclear war but also prevent major conventional attacks. But using nuclear threats to deter conventional war poses a conundrum: How can a victim of conventional attack credibly threaten to employ nuclear weapons if the attacker can respond

in kind? That is, if escalating a conventional war will merely trigger a nuclear response, then rational nuclear-armed states [62]

would never do so. Hence the question: once countries are locked in nuclear stalemate, how can they issue credible nuclear threats to deter conventional attacks? What nuclear capabilities would help them do so?

The subject of nuclear requirements for conventional deterrence was intensely debated during the Cold War, since the problem of "extended deterrence" was the central one facing the United States and its European allies. Once the Soviet Union developed a secure retaliatory arsenal, American leaders had to figure out how to use nuclear threats to deter a major Warsaw Pact invasion of NATO—a major challenge given that an all-out nuclear war would have destroyed the United States and its allies. If nuclear weapons made all-out nuclear war unthinkable, how could Europe be protected?

Some deterrence experts argued that this apparent conundrum was actually not difficult to solve. Whether or not the victim of a conventional attack would intentionally employ nuclear weapons to thwart an invasion is irrelevant for deterrence; the fact [63]

that escalation *might* occur—for example, through accident, misperception, or irrationality—is enough to deter. Other experts disagreed, arguing that only credible threats reliably deter. In their view, countries that seek to use nuclear threats to deter conventional attacks must develop nuclear forces that provide options that would actually be usable in the event of a conflict. This view calls for creating sophisticated nuclear capabilities that provide flexibility for limited employment. Most important, an arsenal optimized for deterring conventional attacks must be highly survivable—not survivable only in peacetime, but still survivable after extended periods of conventional conflict have degraded nuclear forces, communications, and command and control.

The debate over the requirements of conventional deterrence is fundamental to understanding international politics in the nuclear age. If deterring conventional attacks with nuclear threats is fairly simple—that is, if virtually any nuclear arsenal will create enough fear to deter—then the nuclear age should be characterized by reduced arms racing, diminished alliances, and muted relative-gains concerns. After all, even small, simple arsenals would shield countries from conventional attack. But if deterring conventional war using nuclear threats requires usable nuclear options, then many of the competitive behaviors of the prenuclear age will remain rampant in the nuclear era as well. Nuclear-armed states that face major conventional threats (to themselves or key allies) will try to build large, diverse, and resilient nuclear forces—and their enemies will strive to develop counterforce capabilities to neutralize their opponent's wartime escalation strategy. The collective result will be the familiar dynamics of international politics: arms racing, relative-gains concerns, and the competition for allies and other sources of power and security.

The central puzzle of the nuclear age—the intensity of competition in an era in which victory seemed impossible—can be explained with a better understanding of the nature of nuclear stalemate. If it is easy for countries to create nuclear stalemate, if stalemate is essentially irreversible, and if it is simple for countries to deter major conventional attacks under nuclear stalemate, then one should expect nuclear weapons to truly revolutionize international politics. In such a world, there would be little point to security competition among nuclear-armed countries. On the other hand, if stalemate can be delayed or prevented altogether, if stalemate can be reversed, or if conventional deterrence among even nuclear-armed countries is difficult, then the empirical puzzle of the nuclear age is solved. In that case, adversaries should still be worried about relative gains because the balance of power matters; they should still value allies in order to pool resources; and they may need to arms race to achieve military superiority or prevent rivals from attaining it.

The next three chapters explain why power politics has endured in the nuclear age. Chapter 2 shows that the deployment of nuclear weapons does not automatically produce stalemate—in fact, it can trigger an intensely competitive process in which one state seeks to create stalemate and the other works hard to prevent it. Chapter 3 demonstrates that nuclear stalemate is reversible—that countries have worked hard to undermine the survivability of their adversaries' nuclear forces, have made great progress in doing so, and that technology is now making those efforts easier. Chapter 4 explains why even some countries in nuclear stalemate continue to face enormous deterrence challenges, and why the task of deterring conventional war unleashes its own competitive processes. In short, the rest of the book explains why security competition in international politics persists in the shadow of nuclear weapons.