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The Primacy of Land Power

Power in international politics is largely a product of the military forces that a state possesses. Great powers, however, can acquire different kinds of fighting forces, and how much of each kind they buy has important implications for the balance of power. This chapter analyzes the four types of military power among which states choose—independent sea power, strategic airpower, land power, and nuclear weapons—to determine how to weigh them against each other and come up with a useful measure of power.

I make two main points in the discussion below. First, land power is the dominant form of military power in the modern world. A state's power is largely embedded in its army and the air and naval forces that support those ground forces. Simply put, the most powerful states possess the most formidable armies. Therefore, measuring the balance of land power by itself should provide a rough but sound indicator of the relative might of rival great powers.

Second, large bodies of water profoundly limit the power-projection capabilities of land forces. When opposing armies must cross a large expanse of water such as the Atlantic Ocean or the English Channel to attack each other, neither army is likely to have much offensive capability against its rival, regardless of the size and quality of the opposing armies.

The stopping power of water is of great significance not just because it is a central aspect of land power, but also because it has important consequences for the concept of hegemony. Specifically, the presence of oceans on much of the earth's surface makes it impossible for any state to achieve global hegemony. Not even the world's most powerful state can conquer distant regions that can be reached only by ship. Thus, great powers can aspire to dominate only the region in which they are located, and possibly an adjacent region that can be reached over land.

For more than a century strategists have debated which form of military power dominates the outcome of war. U.S. admiral Alfred Thayer Mahan famously proclaimed the supreme importance of independent sea power in *The Influence of Sea Power upon History, 1660–1783* and his other writings.[1] General Giulio Douhet of Italy later made the case for the primacy of strategic airpower in his 1921 classic, *The Command of the Air.*[2] Their works are still widely read at staff colleges around the world. I argue that both are wrong: land power is the decisive military instrument. Wars are won by big battalions, not by armadas in the air or on the sea. The strongest power is the state with the strongest army.

One might argue that nuclear weapons greatly diminish the importance of land power, either by rendering great-power war obsolete or by making the nuclear balance the essential component of military power in a competitive world. There is no question that great-power war is less likely in a nuclear world, but great powers still compete for security even under the nuclear shadow, sometimes intensely, and war between them remains a real possibility. The United States and the Soviet Union, for example, waged an unremitting security competition for forty-five years, despite the presence of nuclear weapons on both sides. Moreover, save for the unlikely scenario in which one great power achieves nuclear superiority, the nuclear balance matters little for determining relative power. Even in a nuclear world, armies and the air and naval forces that support them are the core ingredient of military power.

The alliance patterns that formed during the Cold War are evidence that land power is the principal component of military might. In a world dominated by two great powers, we would expect other key states to join forces with the weaker great power to contain the stronger one. Throughout the

Cold War, not only was the United States much wealthier than the Soviet Union, but it also enjoyed a significant advantage in naval forces, strategic bombers, and nuclear warheads. Nevertheless, France, West Germany, Italy, Japan, the United Kingdom, and eventually China considered the Soviet Union, not the United States, to be the most powerful state in the system. Indeed, those states allied with the United States against the Soviet Union because they feared the Soviet army, not the American army.[3] Moreover, there is little concern about a Russian threat today—even though Russia has thousands of nuclear weapons—because the Russian army is weak and in no position to launch a major ground offensive. Should it recover and become a formidable fighting force again, the United States and its European allies would start worrying about a new Russian threat.

This chapter comprises eight sections. I compare the different kinds of conventional military power in the first four sections, aiming to show that land power dominates independent sea power and strategic airpower. In the first section, I describe these different kinds of military power more fully and explain why land power is the main instrument for winning wars. In the next two sections, I discuss the various missions that navies and air forces perform and then consider the evidence on how independent naval and air forces have affected the outcomes of great-power wars. The role of land power in modern military history is examined in the fourth section.

The fifth section analyzes how large bodies of water sharply curtail the power-projection capabilities of armies and thus shift the balance of land power in important ways. The impact of nuclear weapons on military power is discussed in the sixth section. I then describe how to measure land power in the seventh section, which is followed by a short conclusion that describes some implications for international stability that follow from my analysis of power.

CONQUEST VS. COERCION

Land power is centered around armies, but it also includes the air and naval forces that support them. For example, navies transport armies across large bodies of water, and sometimes they attempt to project ground

forces onto hostile beaches. Air forces also transport armies, but more important, they aid armies by delivering firepower from the skies. These air and naval missions, however, are directly assisting the army, not acting independently of it. Thus, these missions fit under the rubric of land power.

Armies are of paramount importance in warfare because they are the main military instrument for conquering and controlling land, which is the supreme political objective in a world of territorial states. Naval and air forces are simply not suited for conquering territory.[4] The famous British naval strategist Julian Corbett put the point well regarding the relationship between armies and navies: "Since men live upon the land and not upon the sea, great issues between nations at war have always been decided—except in the rarest cases—either by what your army can do against your enemy's territory and national life, or else by the fear of what the fleet makes it possible for your army to do."[5] Corbett's logic applies to airpower as well as sea power.

Navies and air forces, however, need not act simply as force multipliers for the army. Each can also independently project power against rival states, as many navalists and airpower enthusiasts like to emphasize. Navies, for example, can ignore what is happening on the battlefield and blockade an opponent, while air forces can fly over the battlefield and bomb the enemy's homeland. Both blockades and strategic bombing seek to produce victory by coercing the adversary into surrendering before its army is defeated on the battlefield. Specifically, the aim is to cause the opponent to surrender either by wrecking its economy and thus undermining its ability to prosecute the war, or by inflicting massive punishment on its civilian population.

The claims of Douhet and Mahan notwithstanding, neither independent naval power nor strategic airpower has much utility for winning major wars. Neither of those coercive instruments can win a great-power war operating alone. Only land power has the potential to win a major war by itself. The main reason, as discussed below, is that it is difficult to coerce a great power. In particular, it is hard to destroy an enemy's economy solely by blockading or bombing it. Furthermore, the leaders as well as the people in modern states are rarely willing to surrender even after absorbing

tremendous amounts of punishment. Although blockading navies and strategic bombers cannot produce victory by themselves, they sometimes can help armies gain victory by damaging the economy that underpins the adversary's military machine. But even in this more limited capacity, air and naval forces usually do not play more than an auxiliary role.

Land power dominates the other kinds of military power for another reason: only armies can expeditiously defeat an opponent. Blockading navies and strategic bombing, as discussed below, cannot produce quick and decisive victories in wars between great powers. They are useful mainly for fighting lengthy wars of attrition. But states rarely go to war unless they think that rapid success is likely. In fact, the prospect of a protracted conflict is usually an excellent deterrent to war.[6] Consequently, a great power's army is its main instrument for initiating aggression. A state's offensive potential, in other words, is embedded largely in its army.

Let us now look more closely at the different missions that navies and air forces perform in wartime, paying special attention to how blockades and strategic bombing campaigns have affected the outcomes of past great-power conflicts.

THE LIMITS OF INDEPENDENT NAVAL POWER

A navy bent on projecting power against a rival state must first gain *command of the sea,* which is the bedrock mission for naval forces.[7] Command of the sea means controlling the lines of communication that crisscross the ocean's surface, so that a state's commercial and military ships can freely move across them. For a navy to command an ocean, it need not control all of the sea all of the time, but it must be able to control the strategically important parts whenever it wants to use them, and deny the enemy the ability to do likewise.[8] Gaining command of the sea can be achieved by destroying rival navies in battle, by blockading them in their ports, or by denying them access to critical sea lanes.

A navy that commands the oceans may have the freedom to move about those moats, but it still must find a way to project power against its

rival's homeland; command of the sea by itself does not provide that capability. Navies can perform three power-projection missions where they are directly supporting the army, not acting independently.

Amphibious assault takes place when a navy moves an army across a large body of water and lands it on territory controlled by a rival great power.[9] The attacking forces meet armed resistance either when they arrive at their landing zones or shortly thereafter. Their aim is to engage and defeat the defender's main armies, and to conquer some portion, if not all, of its territory. The Allied invasion of Normandy on June 6, 1944, is an example of an amphibious assault.

Amphibious landings, in contrast, occur when the seaborne forces meet hardly any resistance when they land in enemy territory and are able to establish a beachhead and move well inland before engaging enemy forces.[10] The insertion of British troops into French-controlled Portugal during the Napoleonic Wars, discussed below, is an example of an amphibious landing; the landing of German army units in Norway in the spring of 1940 is another.

Troop transport by a navy involves moving ground forces across an ocean and landing them on territory controlled by friendly forces, from where they go into combat against the enemy army. The navy effectively serves as a ferry service. The American navy performed this mission in World War I, when it moved troops from the United States to France, and again in World War II, when it moved troops from the United States to the United Kingdom. These different kinds of amphibious operations are considered below, when I discuss how water limits the striking power of armies. Suffice it to say here that invasion from the sea against territory defended by a rival great power is usually a daunting task. Troop transport is a much easier mission.[11]

There are also two ways that navies can be used independently to project power against another state. In *naval bombardment,* enemy cities or selected military targets, usually along a rival's coast, are hit with sustained firepower from guns or missiles on ships and submarines, or by aircraft flying from carriers. The aim is to coerce the adversary either by punishing its cities or by shifting the military balance against it. This is not

a serious strategy; naval bombardment is pinprick warfare, and it has little effect on the target state.

Although navies often bombarded enemy ports in the age of sail (1500–1850), they could not deliver enough firepower to those targets to be more than a nuisance.[12] Moreover, naval gunfire did not have the range to hit targets located off the coast. Horatio Nelson, the famous British admiral, summed up the futility of naval bombardment with sailing navies when he said, "A ship's a fool to fight a fort."[13] The industrialization of navies after 1850 significantly increased the amount of firepower navies could deliver, as well as their delivery range. But industrialization had an even more profound effect on the ability of land-based forces to find and sink navies, as discussed below. Thus, twentieth-century surface navies tended to stay far away from enemy coastlines in wartime.[14] More important, however, if a great power were to try to coerce an adversary with a conventional bombing campaign, it would surely use its air force for that purpose, not its navy.

The two great naval theorists of modern times, Corbett and Mahan, believed that a *blockade* is the navy's ace strategy for winning great-power wars. Blockade, which Mahan called "the most striking and awful mark of sea power," works by strangling a rival state's economy.[15] The aim is to cut off an opponent's overseas trade—to deny it imports that move across water and to prevent it from exporting its own goods and materials to the outside world.

Once seaborne trade is severed, there are two ways a blockade might coerce a rival great power into surrendering. First, it can inflict severe punishment on the enemy's civilian population, mainly by cutting off food imports and making life miserable, if not deadly, for the average citizen. If enough people are made to suffer and die, popular support for the war will evaporate, a result that will either cause the population to revolt or force the government to stop the war for fear of revolt. Second, a blockade can so weaken an enemy's economy that it can no longer continue the fight. Probably the best way to achieve this end is to cut off a critical import, such as oil. Blockading navies usually do not discriminate between these two approaches but instead try to cut off as much of an

opponent's overseas trade as possible, hoping that one approach succeeds. Regardless, blockades do not produce quick and decisive victories, because it takes a long time for a navy to wreck an adversary's economy.

States usually implement blockades with naval forces that prevent oceangoing commerce from reaching the target state. The United Kingdom, for example, has historically relied on its surface navy to blockade rivals such as Napoleonic France and Wilhelmine Germany. Submarines can also be used to cut an enemy state's overseas trade, as Germany attempted to do against the United Kingdom in both world wars, and the United States did against Japan in World War II. The Americans also used surface ships, land-based aircraft, and mines to blockade Japan. But navies are not always necessary to carry out a blockade. A state that dominates a continent and controls its major ports can stop trade between the states located on that continent and states located elsewhere, thus blockading the outside states. Napoleon's Continental System (1806–13), which was aimed at the United Kingdom, fits this model.

The History of Blockades

There are eight cases in the modern era in which a great power attempted to coerce another great power with a wartime blockade: 1) France blockaded the United Kingdom during the Napoleonic Wars, and 2) the United Kingdom did likewise to France; 3) France blockaded Prussia in 1870; 4) Germany blockaded the United Kingdom and 5) the United Kingdom and the United States blockaded Germany and Austria-Hungary in World War I; 6) Germany blockaded the United Kingdom and 7) the United Kingdom and the United States blockaded Germany and Italy in World War II; and 8) the United States blockaded Japan in World War II. The Union's blockade of the Confederacy during the American Civil War (1861–65) is a possible ninth case, although neither side was technically a great power; I will consider it here nonetheless.[16]

In evaluating these cases, two questions should be kept in mind. First, is there evidence that blockades alone can coerce an enemy into surrendering? And second, can blockades contribute importantly to victory by

ground armies? Is the influence of blockades on the final outcome of wars likely to be decisive, roughly equal to that of land power, or marginal?

The British economy was certainly hurt by Napoleon's Continental System, but the United Kingdom stayed in the war and eventually came out on the winning side.[17] The British blockade of Napoleonic France did not come close to wrecking the French economy, which was not particularly vulnerable to blockade.[18] No serious scholar argues that the British blockade played a key role in Napoleon's downfall. France's blockade of Prussia in 1870 had hardly any effect on the Prussian economy, much less on the Prussian army, which won a decisive victory over the French army.[19] Germany's submarine campaign against British shipping in World War I threatened to knock the United Kingdom out of the war in 1917, but that blockade ultimately failed and the British army played the key role in defeating Wilhelmine Germany in 1918.[20] In that same conflict, the British and American navies imposed a blockade of their own on Germany and Austria-Hungary that badly damaged those countries' economies and caused great suffering among their civilian populations.[21] Nevertheless, Germany surrendered only after the kaiser's armies, which were not seriously affected by the blockade, were shattered in combat on the western front in the summer of 1918. Austria-Hungary, too, had to be defeated on the battlefield.

In World War II, Hitler launched another U-boat campaign against the United Kingdom, but again it failed to wreck the British economy and knock the United Kingdom out of the war.[22] The Anglo-American blockade of Nazi Germany in that same conflict had no significant effect on the German economy, which was not particularly vulnerable to blockade.[23] Nor did the Allied blockade cause Italy's economy much harm, and it certainly had little to do with Italy's decision to quit the war in mid-1943. Regarding the American Civil War, the Confederacy's economy was hurt by the Union blockade, but it did not collapse, and General Robert E. Lee surrendered only after the Confederate armies had been soundly defeated in battle. Moreover, Lee's armies were not beaten in battle because they suffered from material shortages stemming from the blockade.[24]

The American blockade of Japan during World War II is the only case in which a blockade wrecked a rival's economy, causing serious damage to its military forces. Moreover, it is the only case among the nine of successful coercion, since Japan surrendered before its Home Army of two million men was defeated in battle.[25] There is no question that the blockade played a central role in bringing Japan to its knees, but it was done in tandem with land power, which played an equally important role in producing victory. Japan's decision to surrender unconditionally in August 1945 merits close scrutiny, because it is a controversial case, and because it has significant implications for analyzing the efficacy of strategic airpower as well as blockades.[26]

A good way to think about what caused Japan to surrender is to distinguish between what transpired before August 1945 and what happened in the first two weeks of that critical month. By late July 1945, Japan was a defeated nation, and its leaders recognized that fact. The only important issue at stake was whether Japan could avoid unconditional surrender, which the United States demanded. Defeat was inevitable because the balance of land power had shifted decisively against Japan over the previous three years. Japan's army, along with its supporting air and naval forces, was on the verge of collapse because of the devastating American blockade, and because it had been worn down in protracted fighting on two fronts. The Asian mainland was Japan's western front, and its armies had been bogged down there in a costly war with China since 1937. Japan's eastern front was its island empire in the western Pacific, where the United States was its principal foe. American ground forces, with extensive air and naval support for sure, had defeated most of the Japanese forces holding those islands and were gearing up to invade Japan itself in the fall of 1945.

By the end of July 1945, the American air force had been firebombing Japan's major cities for almost five months, and it had inflicted massive destruction on Japan's civilian population. Nevertheless, this punishment campaign neither caused the Japanese people to put pressure on their government to end the war nor caused Japan's leaders to think seriously about throwing in the towel. Instead, Japan was on the ropes because its

army had been decimated by blockade and years of debilitating ground combat. Still, Japan refused to surrender unconditionally.

Why did Japan continue to hold out? It was not because its leaders thought that their badly weakened army could thwart an American invasion of Japan. In fact, it was widely recognized that the United States had the military might to conquer the home islands. Japanese policymakers refused to accept unconditional surrender because they thought that it was possible to negotiate an end to the war that left Japan's sovereignty intact. The key to success was to make the United States think that it would have to pay a large blood price to conquer Japan. The threat of costly victory, they reasoned, would cause the United States to be more flexible on the diplomatic front. Furthermore, Japanese leaders hoped that the Soviet Union, which had stayed out of the Pacific war so far, would mediate the peace talks and help produce an agreement short of unconditional surrender.

Two events in early August 1945 finally pushed Japan's leaders over the line and got them to accept unconditional surrender. The atomic bombings of Hiroshima (August 6) and Nagasaki (August 9) and the specter of more nuclear attacks caused some key individuals, including Emperor Hirohito, to push for quitting the war immediately. The final straw was the Soviet decision to join the war against Japan on August 8, 1945, and the Soviet attack on the Kwantung Army in Manchuria the following day. Not only did that development eliminate any possibility of using the Soviet Union to negotiate a peace agreement, but Japan was now at war with both the Soviet Union and the United States. Moreover, the rapid collapse of the Kwantung Army at the hands of the Red Army suggested that the Home Army was likely to fall rather quickly and easily to the American invasion force. In short, Japan's strategy for gaining a conditional surrender was in tatters by August 9, 1945, and this fact was widely recognized by the Japanese military, especially the army, which had been the principal roadblock to quitting the war.

The evidence from these cases of blockade suggests two conclusions about their utility for winning wars. First, blockades alone cannot coerce an enemy into surrendering. The futility of such a strategy is shown by the fact

that no belligerent has ever tried it. Moreover, the record shows that even blockades used together with land power rarely have produced coercive results, revealing the general inability of blockades to coerce. In the nine cases surveyed above, the blockading state won five times and lost four times. In four of the five victories, however, there was no coercion; the victor had to conquer the other state's army. In the single case of successful coercion, the U.S. navy's blockade of Japan was only partially responsible for the outcome. Land power mattered at least as much as the blockade.

Second, blockades rarely do much to weaken enemy armies, hence they rarely contribute in important ways to the success of a ground campaign. The best that can be said for blockade is that it sometimes helps land power win protracted wars by damaging an adversary's economy. Indeed, the blockade of Japan is the only case in which a blockade mattered as much as land power for winning a great-power war.

Why Blockades Fail

Numerous factors account for the limited impact of blockades in great-power wars. They sometimes fail because the blockading navy is checked at sea and cannot cut the victim's sea lines of communication. The British and American navies thwarted Germany's blockades in both world wars by making it difficult for German submarines to get close enough to Allied shipping to launch their torpedoes. Furthermore, blockades sometimes become porous over the course of a long war, because of leakage or because neutral states serve as entrepôts. The Continental System, for example, eroded over time because Napoleon could not completely shut down British trade with the European continent.

Even when a blockade cuts off virtually all of the target state's seaborne commerce, its impact is usually limited for two reasons. First, great powers have ways of beating blockades, for example by recycling, stockpiling, and substitution. The United Kingdom was heavily dependent on imported food before both world wars, and the German blockades in those conflicts aimed to starve the British into submission. The United Kingdom dealt with this threat to its survival, however, by sharply

increasing its production of foodstuffs.[27] When Germany had its rubber supply cut off in World War II, it developed a synthetic substitute.[28] Furthermore, great powers can conquer and exploit neighboring states, especially since the coming of railroads. Nazi Germany, for example, thoroughly exploited the European continent in World War II, greatly reducing the impact of the Allied blockade.

Modern bureaucratic states are especially adept at adjusting and rationalizing their economies to counter wartime blockades. Mancur Olson demonstrates this point in *The Economics of the Wartime Shortage,* which compares the blockades against the United Kingdom in the Napoleonic Wars, World War I, and World War II.[29] He notes that "Britain endured the greatest loss of food supplies in World War II, the next greatest loss in World War I, and the smallest loss in the Napoleonic wars." At the same time, the United Kingdom was more dependent on food imports during the twentieth century than it was during the Napoleonic period. Therefore, one would expect "the amount of suffering for want of food" to be greatest in World War II and least in Napoleon's day.

But Olson finds the opposite to be true: suffering due to lack of food in the Napoleonic period "was probably much greater than in either of the world wars." His explanation for this counterintuitive finding is that the administrative abilities of the British state increased markedly over time, so that its capacity to reorganize its economy in wartime and ameliorate the effects of blockade was "least remarkable in the Napoleonic period, more remarkable in World War I, and most remarkable in World War II."

Second, the populations of modern states can absorb great amounts of pain without rising up against their governments.[30] There is not a single case in the historical record in which either a blockade or a strategic bombing campaign designed to punish an enemy's population caused significant public protests against the target government. If anything, it appears that "punishment generates more public anger against the attacker than against the target government."[31] Consider Japan in World War II. Not only was its economy devastated by the American blockade, but Japan was subjected to a strategic bombing campaign that destroyed vast tracts of urban landscape and killed hundreds of thousands of civil-

ians. Yet the Japanese people stoically withstood the withering punishment the United States dished out, and they put little pressure on their government to surrender.[32]

Finally, governing elites are rarely moved to quit a war because their populations are being brutalized. In fact, one could argue that the more punishment that a population suffers, the more difficult it is for the leaders to quit the war. The basis of this claim, which seems counterintuitive, is that bloody defeat greatly increases the likelihood that after the war is over the people will seek revenge against the leaders who led them down the road to destruction. Thus, those leaders have a powerful incentive to ignore the pain being inflicted on their population and fight to the finish in the hope that they can pull out a victory and save their own skin.[33]

THE LIMITS OF STRATEGIC AIRPOWER

There are important parallels in how states employ their air forces and their navies in war. Whereas navies must gain command of the sea before they can project power against rival states, air forces must gain command of the air, or achieve what is commonly called *air superiority,* before they can bomb enemy forces on the ground or attack an opponent's homeland. If an air force does not control the skies, its strike forces are likely to suffer substantial losses, making it difficult, if not impossible for them to project power against the enemy.

American bombers, for example, conducted large-scale raids against the German cities of Regensburg and Schweinfurt in August and October 1943 without commanding the skies over that part of Germany. The attacking bombers suffered prohibitive losses as a result, forcing the United States to halt the attacks until long-range fighter escorts became available in early 1944.[34] During the first days of the Yom Kippur War in October 1973, the Israeli Air Force (IAF) attempted to provide much-needed support to the beleaguered Israeli ground forces along the Suez Canal and on the Golan Heights. But withering fire from Egyptian and Syrian surface-to-air missiles and air-defense guns forced the IAF to curtail that mission.[35]

Once an air force controls the skies, it can pursue three power-projection missions in support of army units fighting on the ground. In a *close air support* role, an air force flies above the battlefield and provides direct tactical support to friendly ground forces operating below. The air force's principal goal is to destroy enemy troops from the air, in effect serving as "flying artillery." This mission requires close coordination between air and ground forces. *Interdiction* involves air force strikes at the enemy army's rear area, mainly to destroy or delay the movement of enemy supplies and troops to the front line. The target list might include supply depots, reserve units, long-range artillery, and the lines of communication that crisscross the enemy's rear area and run up to its front lines. Air forces also provide *airlift*, moving troops and supplies either to or within a combat theater. These missions, of course, simply augment an army's power.

But an air force can also independently project power against an adversary with *strategic bombing*, in which the air force strikes directly at the enemy's homeland, paying little attention to events on the battlefield.[36] This mission lends itself to the claim that air forces alone can win wars. Not surprisingly, airpower enthusiasts tend to embrace strategic bombing, which works much like its naval equivalent, the blockade.[37] The aim of both strategic bombing and blockading is to coerce the enemy into surrendering either by massively punishing its civilian population or by destroying its economy, which would ultimately cripple its fighting forces. Proponents of economic targeting sometimes favor striking against the enemy's entire industrial base and wrecking it *in toto*. Others advocate strikes limited to one or more "critical components" such as oil, ball bearings, machine tools, steel, or transportation networks—the Achilles' heel of the enemy's economy.[38] Strategic bombing campaigns, like blockades, are not expected to produce quick and easy victories.

Over the past decade, some advocates of airpower have argued that strategic bombing can secure victory by decapitating the enemy's political leadership.[39] Specifically, bombers might be used either to kill a rival state's political leaders or to isolate them from their people by attacking the leadership's means of communication as well as the security forces that allow it to control the population. More benign elements in the

adversary's camp, it is hoped, would then stage a coup and negotiate peace. Advocates of decapitation also claim that it might be feasible to isolate a political leader from his military forces, making it impossible for him to command and control them.

Two further points about independent airpower are in order before looking at the historical record. Strategic bombing, which I take to mean non-nuclear attacks on the enemy's homeland, has not been an important kind of military power since 1945, and that situation is unlikely to change in the foreseeable future. With the development of nuclear weapons at the end of World War II, great powers moved away from threatening each other's homelands with conventionally armed bombers and instead relied on nuclear weapons to accomplish that mission. During the Cold War, for example, neither the United States nor the Soviet Union planned to launch a strategic bombing campaign against the other in the event of a superpower war. Both states, however, had extensive plans for using their nuclear arsenals to strike each other's territory.

But old-fashioned strategic bombing has not disappeared altogether. The great powers continued employing it against minor powers, as the Soviet Union did against Afghanistan in the 1980s and the United States did against Iraq and Yugoslavia in the 1990s.[40] Having the capability to bomb small, weak states, however, should not count for much when assessing the balance of military might among the great powers. What should count the most are the military instruments that the great powers intend to use against *each other,* and that no longer includes strategic bombing. Thus, my analysis of independent airpower is relevant primarily to the period between 1915 and 1945, not to the recent past, the present, or the future.

The historical record includes fourteen cases of strategic bombing: five involve great powers attacking other great powers, and nine are instances of great powers striking minor powers. The campaigns between rival great powers provide the most important evidence for determining how to assess the balance of military might among the great powers. Nevertheless, I also consider the cases involving minor powers, because some might

think that they—especially the U.S. air campaigns against Iraq and Yugoslavia—provide evidence that great powers can use their air forces to coerce another great power. That is not so, however, as will become apparent.

The History of Strategic Bombing

The five cases in which a great power attempted to coerce a rival great power with strategic bombing are in World War I, when 1) Germany bombed British cities; and in World War II, when 2) Germany struck again at British cities, 3) the United Kingdom and the United States bombed Germany, 4) the United Kingdom and the United States attacked Italy, and 5) the United States bombed Japan.

The nine instances in which a great power attempted to coerce a minor power with strategic airpower include 1) Italy against Ethiopia in 1936; 2) Japan versus China from 1937 to 1945; 3) the Soviet Union against Finland in World War II; the United States versus 4) North Korea in the early 1950s, 5) North Vietnam in the mid-1960s, and 6) North Vietnam again in 1972; 7) the Soviet Union against Afghanistan in the 1980s; and the United States and its allies versus 8) Iraq in 1991 and 9) Yugoslavia in 1999.

These fourteen cases should be evaluated in terms of the same two questions that informed the earlier analysis of blockades: First, is there evidence that strategic bombing alone can coerce an enemy into surrendering? Second, can strategic airpower contribute importantly to victory by ground armies? Is the influence of strategic bombing on the final outcome of wars likely to be decisive, roughly equal to that of land power, or marginal?

Bombing Great Powers

The German air offensives against British cities in World Wars I and II not only failed to coerce the United Kingdom to surrender, but Germany also lost both wars.[41] Furthermore, there is no evidence that either of those

bombing campaigns seriously damaged the United Kingdom's military capability. Thus, if there is a case to be made for the decisive influence of strategic bombing, it depends largely on the Allied bombing of the so-called Axis powers—Germany, Italy, and Japan—in World War II.

A good reason to be skeptical about claims that bombing was of central importance to the outcomes of these three conflicts is that, in each case, serious bombing of the target state did not begin until well after it was clear that each was going down to defeat. Germany, for example, went to war with the United Kingdom in September 1939 and with the United States in December 1941. Germany surrendered in May 1945, although it was clear by the end of 1942, if not sooner, that Germany was going to lose the war. The Wehrmacht's last major offensive against the Red Army was at Kursk in the summer of 1943, and it failed badly. After much debate, the Allies finally decided at the Casablanca Conference in January 1943 to launch a serious strategic bombing campaign against Germany. But the air offensive was slow getting started, and the bombers did not begin pounding the Third Reich until the spring of 1944, when the Allies finally gained air superiority over Germany. Even historian Richard Overy, who believes that airpower played a central role in winning the war against Germany, acknowledges that it was only "during the last year of the war [that] the bombing campaign came of age."[42]

Italy went to war with the United Kingdom in June 1940 and the United States in December 1941. But unlike Germany, Italy quit the war in September 1943, before it had been conquered. The Allied bombing campaign against Italy began in earnest in July 1943, roughly two months before Italy surrendered. By that point, however, Italy was on the brink of catastrophic defeat. Its army was decimated and it no longer was capable of defending the Italian homeland from invasion.[43] In fact, the Wehrmacht was providing most of Italy's defense when the Allies invaded Sicily from the sea in July 1943.

Japan's war with the United States started in December 1941 and ended in August 1945. The serious pounding of Japan from the air began in March 1945, about five months before Japan surrendered. At that point, however, Japan had clearly lost the war and was facing the prospect of sur-

rendering unconditionally. The United States had destroyed Japan's empire in the Pacific and effectively eliminated what remained of the Japanese navy at the Battle of Leyte Gulf in October 1944. Moreover, the American naval blockade had wrecked the Japanese economy by March 1945, an act that had profoundly negative consequences for Japan's army, a large portion of which was bogged down in an unwinnable war with China.

The fact is that these strategic bombing campaigns were feasible only late in the war when the Axis powers were badly battered and headed for defeat. Otherwise, the target states would not have been vulnerable to a sustained aerial assault. The United States, for example, was unable to conduct a major bombing campaign against Japan until it had destroyed most of Japan's navy and air force and had fought its way close to the home islands. Only then were American bombers near enough to make unhindered attacks on Japan. Nor could the United States effectively employ its strategic bombers against Germany until it had gained air superiority over the Third Reich. That difficult task took time and was feasible only because Germany was diverting huge resources to fight the Red Army.

The best case that can be made for the three Allied strategic bombing campaigns is that they helped finish off opponents who were already well on their way to defeat—which hardly supports the claim that independent airpower was a decisive weapon in World War II. In particular, one might argue that those strategic air campaigns helped end the war sooner rather than later, and that they also helped the Allies secure better terms than otherwise would have been possible. Except for the Italian case, however, the evidence seems to show that strategic bombing had little effect on how these conflicts ended. Let us consider these cases in more detail.

The Allies attempted to coerce Germany into surrendering by inflicting pain on its civilian population and by destroying its economy. The Allied punishment campaign against German cities, which included the infamous "firebombings" of Hamburg and Dresden, destroyed more than 40 percent of the urban area in Germany's seventy largest cities and killed roughly 305,000 civilians.[44] The German people, however, fatalistically absorbed the punishment, and Hitler felt no compunction to surrender.[45] There is no doubt that Allied air strikes, along with the advancing ground forces,

wrecked Germany's industrial base by early 1945.[46] But the war was almost over at that point, and more important, the destruction of German industry was still not enough to coerce Hitler into stopping the war. In the end, the American, British, and Soviet armies had to conquer Germany.[47]

The strategic bombing campaign against Italy was modest in the extreme compared to the pummeling that was inflicted on Germany and Japan.[48] Some economic targets were struck, but no attempt was made to demolish Italy's industrial base. The Allies also sought to inflict pain on Italy's population, but in the period from October 1942 until August 1943 they killed about 3,700 Italians, a tiny number compared to the 305,000 Germans (between March 1942 and April 1945) and 900,000 Japanese (between March and August 1945) killed from the air. Despite its limited lethality, the bombing campaign began to rattle Italy's ruling elites in the summer of 1943 (when it was intensified) and increased the pressure on them to surrender as soon as possible. Nevertheless, the main reason that Italy was desperate to quit the war at that point—and eventually did so on September 8, 1943—was that the Italian army was in tatters and it stood hardly any chance of stopping an Allied invasion.[49] Italy was doomed to defeat well before the bombing campaign began to have an effect. Thus, the best that can be said for the Allied air offensive against Italy is that it probably forced Italy out of the war a month or two earlier than otherwise would have been the case.

When the American bombing campaign against Japan began in late 1944, the initial goal was to use high-explosive bombs to help destroy Japan's economy, which was being wrecked by the U.S. navy's blockade.[50] It quickly became apparent, however, that this airpower strategy would not seriously damage Japan's industrial base. Therefore, in March 1945, the United States decided to try instead to punish Japan's civilian population by firebombing its cities.[51] This deadly aerial campaign, which lasted until the war ended five months later, destroyed more than 40 percent of Japan's 64 largest cities, killed approximately 785,000 civilians, and forced about 8.5 million people to evacuate their homes.[52] Although Japan surrendered in August 1945 before the United States invaded and conquered the Japanese homeland—making this a case of succesful coercion—the

firebombing campaign played only a minor role in convincing Japan to quit the war. As discussed earlier, blockade and land power were mainly responsible for the outcome, although the atomic bombings and the Soviet declaration of war against Japan (both in early August) helped push Japan over the edge.

Thus coercion failed in three of the five cases in which a great power was the target state: Germany's air offensives against the United Kingdom in World Wars I and II, and the Allied bombing campaign against Nazi Germany. Moreover, strategic bombing did not play a key role in the Allies' victory over the Wehrmacht. Although Italy and Japan were coerced into surrendering in World War II, both successes were largely due to factors other than independent airpower. Let us now consider what happened in the past when the great powers unleashed their bombers against minor powers.

Bombing Small Powers

Despite the significant power asymmetry in the nine instances in which a great power's strategic bombers struck at a minor power, coercion did not happen in five of the cases. Italy bombed Ethiopian towns and villages in 1936, sometimes using poison gas.[53] Nevertheless, Ethiopia refused to surrender, forcing the Italian army to conquer the entire country. Japan bombed Chinese cities between 1937 and 1945, killing large numbers of Chinese civilians.[54] But China did not surrender and ultimately the United States decisively defeated Japan. The United States conducted the famous "Rolling Thunder" bombing campaign against North Vietnam from 1965 to 1968. Its aim was to force the North Vietnamese to stop fueling the war in South Vietnam and accept the existence of an independent South Vietnam.[55] The effort failed and the war went on.

The Soviet Union waged a bombing campaign against Afghanistan's population centers between 1979 and 1989 in order to coerce the Afghan rebels to stop their war against the Soviet-backed government in Kabul.[56] The Soviets, not the rebels, eventually quit the war. Finally, in early 1991, the United States launched a strategic air offensive against Iraq to coerce

Saddam Hussein into abandoning Kuwait, which his army had conquered in August 1990.[57] The bombing campaign failed to coerce Saddam, however, and the United States and its allies eventually had to employ ground forces to accomplish their mission. This bombing campaign is noteworthy because the United States employed a decapitation strategy: it tried to kill Saddam from the air, and it also attempted to isolate him from his population and from his military forces in Kuwait. This strategy failed on all counts.[58]

Coercion did succeed in four of the cases involving small powers, but strategic bombing appears to have played a peripheral role in achieving that end in all but one of those cases. When the Soviet Union invaded Finland on November 30, 1939, Soviet leader Josef Stalin launched a modest bombing campaign against Finnish cities, killing roughly 650 civilians.[59] By all accounts, the bombing campaign had little to do with Finland's decision to stop the war in March 1940 before it was defeated and conquered by the Red Army. Finland quit fighting because it recognized that its army was badly outnumbered and stood hardly any chance of winning the war.

During the Korean War, the United States attempted to coerce North Korea into quitting the war by punishing it from the air.[60] This effort actually involved three distinct campaigns. From late July 1950 until late October 1950, American bombers concentrated on bombing North Korea's five major industrial centers. Between May and September 1952, the main targets were a handful of hydroelectric plants in North Korea, as well as Pyongyang, the North Korean capital. American bombers struck North Korean dams between May and June 1953, aiming to destroy North Korea's rice crop and starve it into surrendering.

Since the armistice terminating the war was not signed until July 27, 1953, the first two punishment campaigns clearly did not end the war. Indeed, it is apparent from the available evidence that neither of those campaigns affected North Korean behavior in any meaningful way. Although the campaign to destroy North Korea's rice crop immediately preceded the signing of the armistice, bombing the dams did not devastate North Korea's rice crop and cause mass starvation. North Korea was finally coerced into

signing the armistice by President Dwight Eisenhower's nuclear threats, and by the realization that neither side had the necessary combination of capability and will to alter the stalemate on the ground. In short, conventional aerial punishment did not cause this successful coercion.

In addition to the failed "Rolling Thunder" campaign against North Vietnam (1965–68), the United States launched the "Linebacker" bombing campaigns in 1972.[61] North Vietnam eventually signed a cease-fire agreement in early 1973 that allowed the United States to withdraw from the war and delayed further North Vietnamese ground offensives against South Vietnam. Although technically this was a case of successful coercion, in fact, the agreement merely postponed North Vietnam's final victory over South Vietnam until 1975. Nevertheless, strategic bombing played a small role in causing North Vietnam to accept a cease-fire with the United States.

Contrary to the popular perception at the time, American bombers inflicted relatively little punishment on North Vietnam's civilian population. About thirteen thousand North Vietnamese died from the 1972 air campaign, a level of suffering that was hardly likely to cause a determined foe like North Vietnam to cave in to American demands.[62] The main reason North Vietnam agreed to a cease-fire in January 1973 was that the U.S. air force had thwarted a North Vietnamese ground offensive in the spring of 1972, thereby creating a powerful incentive for North Vietnam to facilitate a rapid withdrawal of all American forces from Vietnam before going on the offensive again. Signing the cease-fire did just that, and two years later North Vietnam won a complete military victory over South Vietnam, which fought its final battles without the help of American airpower.

The 1999 war conducted by the North Atlantic Treaty Organization (NATO) against Yugoslavia appears at first glance to be the one case in which strategic airpower alone coerced an adversary into submission.[63] The United States and its allies began bombing Yugoslavia on March 24, 1999. Their aim was to get Slobodan Milosevic, Yugoslavia's president, to stop repressing the Albanian population in the province of Kosovo and allow NATO troops into that province. The air campaign lasted seventy days. Milosevic caved in to NATO's demands on June 8, 1999. NATO did not

launch a ground attack into Kosovo, although the rebel Kosovo Liberation Army skirmished with Yugoslav ground forces throughout the campaign.

Not much evidence is available about why Milosevic capitulated, but it seems clear that bombing did not come close to bringing Yugoslavia to its knees, and that bombing alone is not responsible for the outcome.[64] The bombing campaign was initially a small-scale effort, because NATO leaders believed that Milosevic would concede defeat after a few days of light punishment from the air. Although NATO intensified the air war when that approach failed, it did not have the political will to inflict significant pain on Yugoslavia. Consequently, NATO's bombers went to great lengths not to kill Yugoslav civilians while striking against a limited number of economic and political targets in Yugoslavia. The bombing campaign killed about five hundred civilians.[65] Not surprisingly, there is hardly any evidence that Milosevic threw in the towel because of pressure from his people to end their suffering.

It appears that a variety of factors account for Milosevic's decision to cave into NATO's demands. The threat of further punishment from the air was probably a key factor, but two other factors appear to have been at least as important. NATO was beginning preparations for a massive ground invasion of Yugoslavia, and in late May the U.S. administration of President Bill Clinton sent a clear message to Milosevic via the Russians that NATO would soon send ground troops into Kosovo if he did not surrender. Furthermore, Russia, which was Yugoslavia's key ally and was bitterly opposed to the war, essentially sided with NATO in early June and put significant pressure on Milosevic to end the conflict immediately. NATO also softened its demands a bit to make a settlement more attractive to the Yugoslav leader. In sum, the punishment campaign alone did not produce victory against Yugoslavia, although it seems to have been an important factor.

The evidence from these fourteen cases supports the following conclusions about the utility of strategic bombing. First, strategic bombing alone cannot coerce an enemy into surrendering. Save for the case of Yugoslavia, no great power (or alliance of great powers) has ever tried to win a war by relying solely on its air force, and even in that case NATO eventually

threatened a ground invasion to coerce Milosevic. Strategic bombing was employed in tandem with land power from the start in the other thirteen cases. This record shows the futility of relying on strategic bombing alone. Furthermore, there is little evidence that past bombing campaigns so markedly affected the war's outcome as to indicate that strategic bombing by itself can compel the surrender of another great power. Even when strategic bombing is used along with land power, the record shows that strategic bombing plausibly played a major role in shaping the outcome only once. Strategic bombing is generally unable to coerce on its own.

Consider that in nine out of the fourteen cases, the great power employing strategic airpower won the war. In three of those nine cases, however, the victor did not coerce its adversary but had to defeat it on the ground: Italy against Ethiopia, the Allies against Nazi Germany, and the United States against Iraq. In the remaining six cases, the great power employing strategic airpower successfully coerced its adversary. Strategic bombing, however, played a subordinate role in determining the outcome of five of those six cases: the United States against Japan, the Soviet Union against Finland, the Allies against Italy, and the United States against Korea and Vietnam (1972). Land power was the key to victory in each case, although blockade was also an essential ingredient of success in the U.S.-Japan case.

The war over Kosovo is the only instance in which strategic bombing appears to have played a key role in causing successful coercion. But that case is not cause for optimism about the utility of independent airpower. Not only was Yugoslavia an especially weak minor power fighting alone against the mighty United States and its European allies, but other factors besides the bombing campaign moved Milosevic to acquiesce to NATO's demands.

The second lesson to be drawn from the historical record is that strategic bombing rarely does much to weaken enemy armies, and hence it rarely contributes importantly to the success of a ground campaign. During World War II, independent airpower did sometimes help great powers win lengthy wars of attrition against rival great powers, but it played only an ancillary role in those victories. In the nuclear era, great

powers have employed that coercive instrument only against minor powers, not against each other. But even against weaker states, strategic bombing has been about as effective as it was against other great powers. In short, it is hard to bomb an adversary into submission.

Why Strategic Bombing Campaigns Fail

Strategic bombing is unlikely to work for the same reasons that blockades usually fail to coerce an opponent: civilian populations can absorb tremendous pain and deprivation without rising up against their government. Political scientist Robert Pape succinctly summarizes the historical evidence regarding aerial punishment and popular revolt: "Over more than seventy-five years, the record of air power is replete with efforts to alter the behavior of states by attacking or threatening to attack large numbers of civilians. The incontrovertible conclusion from these campaigns is that air attack does not cause citizens to turn against their government. . . . In fact, in the more than thirty major strategic air campaigns that have thus far been waged, air power has never driven the masses into the streets to demand anything."[66] Furthermore, modern industrial economies are not fragile structures that can be easily destroyed, even by massive bombing attacks. To paraphrase Adam Smith, there is a lot of room for ruin in a great power's economy. This targeting strategy makes even less sense against minor powers, because they invariably have small industrial bases.

But what about decapitation? As noted, that strategy failed against Iraq in 1991. It was also tried on three other occasions, none of which are included in the previous discussion because they were such small-scale attacks. Nevertheless, the strategy failed all three times to produce the desired results. On April 14, 1986, the United States bombed the tent of Muammar Qaddafi. The Libyan leader's young daughter was killed, but he escaped harm. It is widely believed that the terrorist bombing of Pan Am flight 103 over Scotland two years later was retribution for that failed assassination attempt. On April 21, 1996, the Russians targeted and killed Dzhokhar Dudayev, the leader of rebel forces in the province of Chechnya.

The aim was to coerce the Chechens into settling their secessionist war with Russia on terms that were favorable to the Kremlin. In fact, the rebels vowed to avenge Dudayev's death, and a few months later (August 1996) the Russian troops were forced out of Chechnya. Finally, the United States launched a brief four-day attack against Iraq in December 1998. "Operation Desert Fox," as the effort was code-named, was another attempt to decapitate Saddam; it failed.[67]

Decapitation is a fanciful strategy.[68] The case of Dudayev notwithstanding, it especially difficult in wartime to locate and kill a rival political leader. But even if decapitation happens, it is unlikely that the successor's politics will be substantially different from those of the dead predecessor. This strategy is based on the deep-seated American belief that hostile states are essentially comprised of benign citizens controlled by evil leaders. Remove the evil leader, the thinking goes, and the forces of good will triumph and the war will quickly end. This is not a promising strategy. Killing a particular leader does not guarantee that one of his closest lieutenants will not replace him. For example, had the Allies managed to kill Adolf Hitler, they probably would have gotten Martin Bormann or Hermann Goering as his replacement, neither of whom would have been much, if any, improvement over Hitler. Furthermore, evil leaders like Hitler often enjoy widespread popular support: not only do they sometimes represent the views of their body politic, but nationalism tends to foster close ties between political leaders and their populations, especially in wartime, when all concerned face a powerful external threat.[69]

The variant of the strategy that calls for isolating the political leadership from the broader population is also illusory. Leaders have multiple channels for communicating with their people, and it is virtually impossible for an air force to knock all of them out at once and keep them shut down for a long period of time. For example, bombers might be well-suited for damaging an adversary's telecommunications, but they are ill-suited for knocking out newspapers. They are also ill-suited for destroying the secret police and other instruments of suppression. Finally, causing coups that produce friendly leaders in enemy states during wartime is an extremely difficult task.

Isolating a political leader from his military forces is equally impractical. The key to success in this variant of the strategy is to sever the lines of communication between the battlefield and the political leadership. There are two reasons why this strategy is doomed to fail, however. Leaders have multiple channels for communicating with their military, as well as with their population, and bombers are not likely to shut them all down simultaneously, much less keep them all silent for a long time. Moreover, political leaders worried about this problem can delegate authority in advance to the appropriate military commanders, in the event that the lines of communication are cut. During the Cold War, for example, both superpowers planned for that contingency because of their fear of nuclear decapitation.

It seems clear from the historical record that blockades and strategic bombing occasionally affect the outcome of great-power wars but rarely play a decisive role in shaping the final result. Armies and the air and naval forces that support them are mainly responsible for determining which side wins a great-power war. Land power is the most formidable kind of conventional military power available to states.[70] In fact, it is a rare event when a war between great powers is not settled largely by rival armies fighting it out on the battlefield. Although some of the relevant history has been discussed in the preceding sections and chapters, a brief overview of the great-power wars since 1792 shows that wars are won on the ground.

THE DOMINATING INFLUENCE OF ARMIES

There have been ten wars between great powers over the past two centuries, three of which were central wars involving all of the great powers: the French Revolutionary and Napoleonic Wars (1792–1815), World War I (1914–18), and World War II (1939–45); the latter actually involved distinct conflicts in Asia and Europe.

In the wake of the French Revolution, France fought a series of wars over twenty-three years against different coalitions of European great pow-

ers, including Austria, Prussia, Russia, and the United Kingdom. The outcome of almost every campaign was determined by battles between rival armies, not battles at sea. Consider, for example, the impact of the famous naval Battle of Trafalgar on the course of the war. The British navy decisively defeated the French fleet in that engagement on October 21, 1805, one day after Napoleon had won a major victory against Austria in the Battle of Ulm. Britain's victory at sea, however, had little effect on Napoleon's fortunes. Indeed, over the course of the next two years, Napoleon's armies achieved their greatest triumphs, defeating the Austrians and the Russians at Austerlitz (1805), the Prussians at Jena and Auerstadt (1806), and the Russians at Friedland (1807).[71]

Furthermore, the United Kingdom blockaded the European continent and Napoleon blockaded the United Kingdom. But neither blockade markedly influenced the war's outcome. In fact, the United Kingdom was eventually forced to send an army to the continent to fight against Napoleon's army in Spain. That British army and, even more important, the Russian army that decimated the French army in the depths of Russia in 1812 were largely responsible for putting Napoleon out of business.

The balance of land power was also the principal determinant of victory in World War I. In particular, the outcome was decided by long and costly battles on the eastern front between German and Russian armies, and on the western front between German and Allied (British, French, and American) forces. The Germans scored a stunning victory in the east in October 1917, when the Russian army collapsed and Russia quit the war. The Germans almost duplicated that feat on the western front in the spring of 1918, but the British, French, and American armies held fast; shortly thereafter the German army fell apart, and with that the war ended on November 11, 1918. Strategic bombing played hardly any role in the final outcome. The Anglo-American blockade of Germany surely contributed to the victory, but it was a secondary factor. "The Great War," as it was later called, was settled mainly by the millions of soldiers on both sides who fought and often died in bloody battles at places like Verdun, Tannenberg, Passchendaele, and the Somme.

The outcome of World War II in Europe was determined largely by battles fought between rival armies and their supporting air and naval forces.

Nazi land power was almost exclusively responsible for the tidal wave of early German victories: against Poland in September 1939, France and the United Kingdom between May and June 1940, and the Soviet Union between June and December 1941. The tide turned against the Third Reich in early 1942, and by May 1945, Hitler was dead and his successors had surrendered unconditionally. The Germans were beaten decisively on the battlefield, mainly on the eastern front by the Red Army, which lost a staggering eight million soldiers in the process but managed to cause at least three out of every four German wartime casualties.[72] British and American armies also helped wear down the Wehrmacht, but they played a considerably smaller role than the Soviet army, mainly because they did not land on French soil until June 1944, less than a year before the war ended.

The Allies' strategic bombing campaign failed to cripple the German economy until early 1945, when the war's outcome had already been settled on the ground. Nevertheless, airpower alone did not wreck Germany's industrial base; the Allied armies closing in on the Third Reich also played a major role in that effort. The British and American navies imposed a blockade on the Third Reich, but it, too, had a minor impact on the war's outcome. In short, the only way to defeat a formidable continental power like Nazi Germany is to smash its army in bloody land battles and conquer it. Blockades and strategic bombing might help the cause somewhat, but they are likely to matter primarily on the margins.

Americans tend to think that the Asian half of World War II began when Pearl Harbor was attacked on December 7, 1941. But Japan had been on the warpath in Asia since 1931 and had conquered Manchuria, much of northern China, and parts of Indochina before the United States entered the war. Immediately after Pearl Harbor, the Japanese military conquered most of Southeast Asia, and virtually all of the islands in the western half of the Pacific Ocean. Japan's army was its principal instrument of conquest, although its navy often transported the army into combat. Japan conducted a strategic bombing campaign against China, but it was a clear-cut failure (as discussed earlier in this chapter). Also, starting in 1938, Japan tried to cut off China's access to the outside world with a blockade, which reduced the flow of arms and goods into China to a

trickle by 1942. Nevertheless, China's armies continued to hold their own on the battlefield, refusing to surrender to their Japanese foes.[73] In short, land power was the key to Japan's military successes in World War II.

The tide turned against Japan in June 1942, when the American navy scored a stunning victory over the Japanese navy at the Battle of Midway. Over the next three years, Japan was worn down in a protracted two-front war, finally surrendering unconditionally in August 1945. As noted earlier, land power played a critical role in defeating Japan. The U.S. navy's blockade of the Japanese homeland, however, was also a deciding factor in that conflict. The firebombing of Japan, including Hiroshima and Nagasaki, certainly caused tremendous suffering in the targeted cities, but it played only a minor role in causing Japan's defeat. This is the only great-power war in modern history in which land power alone was not principally responsible for determining the outcome, and in which one of the coercive instruments—airpower or sea power—played more than an auxiliary role.

Seven other great power vs. great power wars have been fought over the past two hundred years: the Crimean War (1853–56), the War of Italian Unification (1859), the Austro-Prussian War (1866), the Franco-Prussian War (1870–71), the Russo-Japanese War (1904–5), the Russian Civil War (1918–21), and the Soviet-Japanese War (1939). None of these cases involved strategic bombing, and only the Russo-Japanese War had a significant naval dimension, although neither side blockaded the other. The rival navies mainly fought for command of the sea, which was important because whichever side dominated the water had an advantage in moving land forces about the theater of operations.[74] All seven conflicts were settled between rival armies on the battlefield.

Finally, the outcome of a major conventional conflict during the Cold War would have been determined in large part by events on the central front, where NATO and Warsaw Pact armies would have clashed head-on. For sure, the tactical air forces supporting those armies would have influenced developments on the ground. Still, the war would have been decided largely by how well the rival armies performed against each other. Neither side would have mounted a strategic bombing campaign against the other,

mainly because the advent of nuclear weapons rendered that mission moot. Furthermore, there was no serious possibility of the NATO allies using independent naval power to their advantage, mainly because the Soviet Union was not vulnerable to blockade as Japan was in World War II.[75] Soviet submarines probably would have tried to cut the sea lines of communication between the United States and Europe, but they surely would have failed, just as the Germans had in both world wars. As was the case with Napoleonic France, Wilhelmine Germany, and Nazi Germany, a hegemonic war with the Soviet Union would have been settled on the ground by clashing armies.

THE STOPPING POWER OF WATER

There is one especially important aspect of land power that merits further elaboration: how large bodies of water sharply limit an army's power-projection capability. Water is usually not a serious obstacle for a navy that is transporting ground forces across an ocean and landing them in a friendly state. But water is a forbidding barrier when a navy attempts to deliver an army onto territory controlled and well-defended by a rival great power. Navies are therefore at a significant disadvantage when attempting amphibious operations against powerful land-based forces, which are likely to throw the seaborne invaders back into the sea. Generally speaking, land assaults across a common border are a much easier undertaking. Armies that have to traverse a large body of water to attack a well-armed opponent invariably have little offensive capability.

Why Water Stymies Armies

The basic problem that navies face when conducting seaborne invasions is that there are significant limits on the number of troops and the amount of firepower that a navy can bring to bear in an amphibious operation.[76] Thus, it is difficult for navies to insert onto enemy shores assault forces

that are powerful enough to overwhelm the defending troops. The specific nature of this problem varies from the age of sail to the industrial age.[77]

Before the 1850s, when ships were powered by sail, navies were considerably more mobile than armies. Not only did armies have to negotiate obstacles such as mountains, forests, swamps, and deserts, they also did not have access to good roads, much less railroads or motorized vehicles. Land-based armies therefore moved slowly, which meant that they had considerable difficulty defending a coastline against a seaborne invasion. Navies that commanded the sea, on the other hand, could move swiftly about the ocean's surface and land troops on a rival's coast well before a land-based army could get to the beachhead to challenge the landing. Since amphibious landings were relatively easy to pull off in the age of sail, great powers hardly ever launched amphibious assaults against each other's territory; instead they landed where the opponent had no large forces. In fact, no amphibious assaults were carried out in Europe from the founding of the state system in 1648 until steam ships began replacing sailing ships in the mid-nineteenth century.

Despite the relative ease of landing troops in enemy territory, navies were not capable of putting large forces ashore and supporting them for long periods. Sailing navies had limited carrying capacity, and thus they were rarely capable of providing the logistical support that the invading forces needed to survive in hostile territory.[78] Nor could navies quickly bring in reinforcements with the necessary supplies. Furthermore, the enemy army, which was fighting on its own territory, would eventually reach the amphibious force and was likely to defeat it in battle. Consequently, great powers in the age of sail launched remarkably few amphibious landings in Europe against either the homeland of rival great powers or territory controlled by them. In fact, there were none during the two centuries prior to the start of the Napoleonic Wars in 1792, despite the fact that Europe's great powers were constantly at war with each other during that long period.[79] The only two amphibious landings in Europe during the age of sail were the Anglo-Russian operation in Holland (1799) and the British invasion of Portugal (1808). The seaborne forces were defeated in both cases, as discussed below.

The industrialization of war in the nineteenth century made large-scale amphibious invasions more feasible, but they remained an especially formidable task against a well-armed opponent.[80] From the invader's perspective, the most favorable development was that new, steam-driven navies had greater carrying capacity than sailing navies, and they were not beholden to the prevailing wind patterns. Consequently, steam-driven navies could land greater numbers of troops on enemy beaches and sustain them there for longer periods of time than could their predecessors. "Steam navigation," Lord Palmerston warned in 1845, had "rendered that which was before unpassable by a military force [the English Channel] nothing more than a river passable by a steam bridge."[81]

But Palmerston greatly exaggerated the threat of invasion to the United Kingdom, as there were other technological developments that worked against the seaborne forces. In particular, the development of airplanes, submarines, and naval mines increased the difficulty of reaching enemy shores, while the development of airplanes and railroads (and later, paved roads, trucks, and tanks) made it especially difficult for amphibious forces to prevail after they put ashore.

Railroads, which began spreading across Europe and the United States in the mid-nineteenth century, played an important role in the German wars of unification against Austria (1866) and France (1870–71), and in the American Civil War (1861–65).[82] Amphibious forces hardly benefit from railroads as they move across large bodies of water. Also, seaborne forces cannot bring railroads with them, and it is difficult to capture and make use of enemy railroads—at least in the short term. Railroads, however, markedly increase a land-based army's ability to defeat an amphibious operation, because they allow the defender to rapidly concentrate large forces at or near the landing sites. Armies on rails also arrive on the battlefield in excellent physical shape, because they avoid the wear and tear that comes with marching on foot. Furthermore, railroads are an excellent tool for sustaining an army locked in combat with an amphibious force. For these same reasons, the development in the early 1900s of paved roads and motorized as well as mechanized vehicles further advantaged the land-based army against the seaborne invader.

Although airplanes were first used in combat in the 1910s, it was not until the 1920s and 1930s that navies began developing aircraft carriers that could be used to support amphibious operations.[83] Nevertheless, the territorial state under assault benefits far more from airpower than do the amphibious forces, because many more aircraft can be based on land than on a handful of aircraft carriers.[84] A territorial state is essentially a huge aircraft carrier that can accommodate endless numbers of airplanes, whereas an actual carrier can accommodate only a small number of airplanes. Therefore, other things being equal, the territorial state should be able to control the air and use that advantage to pound the amphibious forces on the beaches, or even before they reach the beaches. Of course, the seaborne force can ameliorate this problem if it can rely on land-based aircraft of its own. For example, the assault forces at Normandy in June 1944 relied heavily on aircraft stationed in England.

Land-based air forces also have the capability to sink a rival navy. It is actually dangerous to place naval forces near the coast of a great power that has a formidable air force. Between March and December 1942, for example, Allied convoys sailing between British and Icelandic ports and the Soviet port of Murmansk passed close to Norway, where substantial German air forces were located. Those land-based aircraft wreaked havoc on the convoys until late 1942, when German airpower in the region was substantially reduced.[85] Thus, even if a navy commands the sea, it cannot go near a territorial state unless it also commands the air, which is difficult to achieve with aircraft carriers alone, because land-based air forces usually outnumber sea-based air forces by a large margin.

Submarines were also employed for the first time in World War I, mainly by Germany against Allied shipping in the waters around the United Kingdom and in the Atlantic.[86] Although the German submarine campaign ultimately failed, it demonstrated that a large submarine force could destroy unescorted merchant ships with relative ease. German submarines also seriously threatened the United Kingdom's formidable surface navy, which spent the war playing a cat-and-mouse game in the North Sea with the German navy. In fact, the commanders of the British fleet lived in constant fear of German submarines, even when they were

in home port. But they were especially fearful of venturing into the North Sea and being drawn near the German coast, where submarines might be lying in wait. "The submarine danger," as naval historian Paul Halpern notes, "had indeed contributed the most toward making the North Sea for capital ships somewhat similiar to the no-man's-land between the opposing trench systems on land. They would be risked there, but only for specific purposes."[87] The submarine threat to surface ships has important implications for navies bent on launching amphibious assaults against a rival's coast. In particular, an opponent with a formidable submarine force could sink the assaulting forces before they reached the beaches or sink much of the striking navy after the assaulting forces had landed, thereby stranding the seaborne troops on the beaches.

Finally, naval mines, fixed explosives that sit under the water and explode when struck by passing ships, increase the difficulty of invading a territorial state from the sea.[88] Navies used mines effectively for the first time in the American Civil War, but they were first employed on a massive scale during World War I. The combatants laid down roughly 240,000 mines between 1914 and 1918, and they shaped the course of the war in important ways.[89] Surface ships simply cannot pass unharmed through heavily mined waters; the minefields must be cleared first, and this is a difficult, sometimes impossible, task in wartime. A territorial state can therefore use mines effectively to defend its coast against invasion. Iraq, for example, mined the waters off the Kuwaiti coast before the United States and its allies began to amass forces to invade in the Persian Gulf War. When the ground war started on February 24, 1991, the U.S. Marines did not storm the Kuwaiti beaches but remained on their ships in the gulf.[90]

Although amphibious operations against a land mass controlled by a great power are especially difficult to pull off, they are feasible under special circumstances. In particular, they are likely to work against a great power that is on the verge of catastrophic defeat, mainly because the victim is not going to possess the wherewithal to defend itself. Furthermore, they are likely to succeed against great powers that are defending huge expanses of territory. In such cases, the defender's troops are likely to be widely dispersed, leaving their territory vulnerable to attack somewhere on the

periphery. In fact, uncontested amphibious landings are possible if a defending great power's forces are stretched thinly enough. It is especially helpful if the defender is fighting a two-front war, because then some sizable portion of its force will be pinned down on a front far away from the seaborne assault.[91] In all cases, the invading force should have clear-cut air superiority over the landing sites, so that its air force can provide close air support and prevent enemy reinforcements from reaching the beachheads.[92]

But if none of these circumstances applies and the defending great power can employ a substantial portion of its military might against the amphibious forces, the land-based forces are almost certain to inflict a devastating defeat on the seaborne invaders. Therefore, when surveying the historical record, we should expect to find cases of amphibious operations directed against a great power only when the special circumstances described above apply. Assaults from the sea against powerful land forces should be rare indeed.

The History of Amphibious Operations

A brief survey of the history of seaborne invasions provides ample evidence of the stopping power of water. There is no case in which a great power launched an amphibious assault against territory that was well-defended by another great power. Before World War I, some British naval planners argued for invading Germany from the sea at the outset of a general European war.[93] That idea, however, was considered suicidal by military planners and civilian policymakers alike. Corbett surely reflected mainstream thinking on the matter when he wrote in 1911, "Defeat the enemy's fleet as we may, he will be but little the worse. We shall have opened the way for invasion, but any of the great continental powers can laugh at our attempts to invade single-handed."[94] German chancellor Otto von Bismarck apparently did just that when asked how he would respond if the British army landed on the German coastline. He reportedly replied that he would "call out the local police and have it arrested!"[95] The United Kingdom did not seriously contemplate invading Germany either before or after World War I broke out but instead convoyed its army to France,

where it took its place on the western front alongside the French army. The United Kingdom followed a similiar strategy after Germany invaded Poland on September 1, 1939.

During the Cold War, the United States and its allies never seriously considered launching an amphibious attack against the Soviet Union.[96] Moreover, American policymakers recognized during the Cold War that if the Soviet army had overrun Western Europe, it would have been almost impossible for the U.S. and British armies to launch a second Normandy invasion to get back on the European continent.[97] In all likelihood, the Soviet Union would not have faced a two-front war, and thus it would have been able to concentrate almost all of its best divisions in France. Moreover, the Soviets would have had a formidable air force to use against the invading forces.

Virtually all of the cases in modern history of amphibious assaults launched against territory controlled by a great power occurred under the special circumstances specified above. During the French Revolutionary and Napoleonic Wars (1792–1815), for example, the British navy conducted two amphibious landings and one amphibious assault into territory controlled by France. Both landings ultimately failed, although the assault was a success.

Great Britain and Russia landed amphibious troops in French-dominated Holland on August 27, 1799.[98] Their aim was to force France, which was already locked in combat with Austrian and Russian armies in the center of Europe, to fight a two-front war. However, shortly after the Anglo-Russian forces landed in Holland to open up the second front, France won key victories on the other front. Austria then quit the war, leaving France free to concentrate its military might against the invasion forces, which were poorly equipped and supplied from the start (this was the age of sail). To avoid disaster, the British and Russian armies did an about-face and tried to exit Holland by sea. But they failed to get off the continent and were forced to surrender to the French army on October 18, 1799, less than two months after the initial landing.

The second amphibious landing took place along the Portuguese coast in August 1808, at a time when Napoleon's military machine was deeply

involved in neighboring Spain.[99] Portugal was then under the control of a small and weak French army, which made it possible for the United Kingdom to land troops on a strip of coastline controlled by friendly Portuguese fighters. The British invasion force pushed the French army out of Portugal and then moved into Spain to engage the main French armies on the Iberian Peninsula. Badly mauled by Napoleon's forces, the British army had to evacuate Spain by sea in January 1809, six months after landing in Portugal.[100] In both cases, the initial landings were possible because the main body of French troops was engaged elsewhere and the British navy was able to find safe landing sites in otherwise hostile territory. Once the amphibious forces were confronted with powerful French forces, however, they quickly headed for the beaches.

The British military launched a successful amphibious assault against French forces at Aboukir, Egypt, on March 8, 1801. The defenders were actually the remnants of the army that Napoleon had brought to Egypt in the summer of 1798.[101] The British navy had soon thereafter severed that army's lines of communication with Europe, dooming it to eventual destruction. Recognizing the bleak strategic situation facing him, Napoleon snuck back to France in August 1798. Thus, by the time Britain invaded Egypt in 1801, the French forces there had been withering on the vine for almost three years and were in poor shape to fight a war. Moreover, they were led by an especially incompetent commander. Thus, Britain's assault forces faced a less-than-formidable adversary in Egypt. In fact, the French army made little effort to defend the beaches at Aboukir and performed poorly in subsequent battles with British troops. French forces in Egypt surrendered on September 2, 1801.

The Crimean War (1853–56) is one of two cases in modern history in which a great power invaded the homeland of another great power from the sea (the Allied invasion of Sicily in July 1943 is the other case). In September 1854, roughly 53,000 British and French troops landed on the Crimean Peninsula, a remote piece of Russian territory that jutted into the Black Sea.[102] Their aim was to challenge Russian control of the Black Sea by capturing the Russian naval base at Sevastopol, which was defended by about 45,000 Russian troops.[103] The operation was an amphibious landing,

not an amphibious assault. The Anglo-French forces put ashore approximately fifty miles north of Sevastopol, where they met no Russian resistance until after they had established a beachhead and moved well inland. Despite considerable British and French ineptitude, Sevastopol fell in September 1855. Russia lost the war soon thereafter; a peace treaty was signed in Paris in early 1856.

A number of exceptional circumstances account for the Crimean case. First, the United Kingdom and France threatened Russia in two widely separated theaters: the Baltic Sea and the Black Sea. But because the Baltic Sea was close to Russia's most important cities, and the Black Sea was far away from them, Russia kept most of its army near the Baltic Sea. Even after British and French troops landed in the Crimea, Russian forces in the Baltic region remained put. Second, the possibility of an Austrian attack against Poland pinned down additional Russian troops that might have otherwise been sent to the Crimea. Third, the communications and transportation network in mid-nineteenth-century Russia was primitive, and therefore it was difficult for Russia to supply its forces around Sevastopol. Field Marshal Helmuth von Moltke, the architect of Prussia's victories against Austria (1866) and France (1870–71), opined, "If Russia had had a railway to Sevastopol in 1856, the war would certainly have had a different outcome."[104] Finally, the United Kingdom and France had limited aims in the Crimea: they did not seriously threaten to enlarge their foothold there, and they certainly did not threaten to move north and inflict a decisive defeat on Russia. Only a British and French seaborne assault across the Baltic Sea might have led to a major Russian defeat. However, Russia kept sufficient forces in the Baltic region to deter such an attack.

During World War I, no seaborne invasions were carried out against territory controlled by Germany or any other great power. The disastrous Gallipoli campaign was the only major amphibious operation of the war.[105] British and French forces attempted to capture the Gallipoli Peninsula, which was part of Turkey and was of critical importance for gaining access to the Black Sea. Turkey was not a great power, but it was allied with Germany, although German troops did not fight with the Turks. Nevertheless, the Turks contained the attacking Allied forces in

their beachheads and eventually forced them to withdraw by sea from Gallipoli.

Numerous amphibious operations took place in World War II against territory controlled by a great power. In the European theater, British and American forces launched five major seaborne assaults.[106] Allied forces invaded Sicily in July 1943, when Italy was still in the war (although barely), and the Italian mainland in September 1943, just after Italy quit the war.[107] Both invasions were successful. After conquering southern Italy, the Allies mounted a large-scale invasion at Anzio in January 1944.[108] The aim was to turn the German army's flank by landing a large seaborne force about fifty-five miles behind German lines. Although the landings went smoothly, the Anzio operation was a failure. The Wehrmacht pinned down the assaulting forces in their landing zones, where they remained until the German army began retreating northward toward Rome. The final two invasions were against German forces occupying France: Normandy in June 1944 and southern France in August 1944. Both were successful and contributed to the downfall of Nazi Germany.[109]

Leaving Anzio aside for the moment, the other four seaborne assaults were successful in part because the Allies enjoyed overwhelming air superiority in each case, which meant that the landing forces but not the defending forces were directly supported by flying artillery. Allied airpower was also used to thwart the movement of German reinforcements to the landing areas, which provided time for the Allies to build up their forces before they had to engage the Wehrmacht's main units. Furthermore, Germany, which was occupying and defending Italy and France when these invasions occurred, was fighting a two-front war and the majority of its forces were pinned down on the eastern front.[110] The German armies in Italy and France also had to cover vast stretches of coastline, so they had to spread their forces out, leaving them vulnerable to Allied amphibious assaults, which were concentrated at particular points along those coasts. Imagine the Normandy invasion against a Wehrmacht that controlled the skies above France and was not at war with the Soviet Union: the Allies would not have dared invade.

The successful landing at Anzio was due to these same factors: decisive air superiority and limited German resistance at the landing sites. The Allies, however, did not move quickly to exploit this initial advantage and score a stunning success. Not only were they slow to move inland from their beacheads, but Allied airpower failed to prevent the Wehrmacht from moving powerful forces to the landing areas, where they were able to contain the invasion force. Moreover, no effort was made to bring in reinforcements to strengthen the initial landing force, mainly because the Anzio operation did not matter much for the outcome of the Italian campaign.

Amphibious operations in the Pacific theater during World War II fall into two categories. In the six months immediately after Pearl Harbor, Japan conducted roughly fifty amphibious landings and assaults in the western Pacific against territory defended mainly by British but also by American troops.[111] The targets included Malaysia, British Borneo, Hong Kong, the Philippines, Timor, Java, Sumatra, and New Guinea, to name just a few. Almost all of these amphibious operations were successful, leaving Japan with a vast island empire by mid-1942. Japan's amphibious successes were due to the special circumstances described above: air superiority over the landing sites, and weak and isolated Allied forces that were incapable of defending the lengthy coastlines assigned to them.[112]

The U.S. military conducted fifty-two amphibious invasions against Japanese-held islands in the Pacific during World War II.[113] Those campaigns were essential for destroying the island empire Japan had built earlier in the war with its own amphibious operations. Some of the American invasions were small in scale, and many were unopposed landings. Others, such as that at Okinawa, turned deadly when the invading forces moved inland and encountered strong Japanese resistance. Some, such as Tarawa, Saipan, and Iwo Jima, involved major seaborne assaults against heavily defended beaches. Virtually all of these seaborne invasions were successful, although the price of victory was sometimes high.

This impressive record was due in part to American air superiority. As the U.S. Strategic Bombing Survey notes, "Our series of landing operations were always successful because air domination was always established in the objective area before a landing was attempted."[114] Control of

the air not only meant that the invading American forces had close air support, while the Japanese had none, but it also allowed the United States to concentrate its forces against particular islands on the perimeter of Japan's Pacific empire and cut the flow of supplies and reinforcements to those outposts.[115] "Thus, the perimeter defense points became isolated, nonreinforceable garrisons—each subject to individual destruction in detail."[116] Furthermore, Japan was fighting a two-front war and only a small portion of its army was located on those Pacific islands; most of its army was located on the Asian mainland and in Japan itself.

Finally, it is worth noting that the United States was making plans to invade Japan when World War II ended in August 1945. There is little doubt that American seaborne forces would have assaulted Japan's main islands if it had not surrendered, and that the invasion would have been successful.

Amphibious operations against Japan were feasible in late 1945 because Japan was a fatally crippled great power, and the assault forces essentially would have delivered the coup de grâce. From the Battle of Midway in June 1942 through the capture of Okinawa in June 1945, the U.S. military had devastated Japanese forces in the Pacific.[117] By the summer of 1945, Japan's Pacific empire was in ruins and the remnants of its once-formidable navy were largely useless against the American military machine. The Japanese economy, which had been only about one-eighth the size of the American economy at the start of World War II, was in shambles by the spring of 1945.[118] Furthermore, by the summer of 1945, Japan's air force, like its navy, was wrecked, which meant that American planes dominated the skies over Japan. All Japan had left to defend its homeland was its army. But even here fortune smiled on the United States, because more than half of Japan's ground units were stuck on the Asian mainland, where they would not be able to affect the American invasion.[119] In short, Japan was a great power in name only by the summer of 1945, and thus it was feasible for American policymakers to countenance an invasion. Even so, they were deeply committed to avoiding an amphibious assault against Japan itself, because they feared high numbers of casualties.[120]

Continental vs. Insular Great Powers

The historical record illustrates in another way the difficulty of assaulting a great power's territory from the sea compared to invading it over land. Specifically, one can distinguish between *insular* and *continental* states. An insular state is the only great power on a large body of land that is surrounded on all sides by water. There can be other great powers on the planet, but they must be separated from the insular state by major bodies of water. The United Kingdom and Japan are obvious examples of insular states, since each occupies a large island by itself. The United States is also an insular power, because it is the only great power in the Western Hemisphere. A continental state, on the other hand, is a great power located on a large body of land that is also occupied by one or more other great powers. France, Germany, and Russia are obvious examples of continental states.

Insular great powers can be attacked only over water, whereas continental powers can be attacked over land and over water, provided they are not landlocked.[121] Given the stopping power of water, one would expect insular states to be much less vulnerable to invasion than continental states, and continental states to have been invaded across land far more often than across water. To test this argument, let us briefly consider the history of two insular great powers, the United Kingdom and the United States, and two continental great powers, France and Russia, focusing on how many times each has been invaded by another state, and whether those invasions were by land or sea.

Until 1945, the United Kingdom had been a great power for more than four centuries, during which time it was involved in countless wars. Over that long period, however, it was never invaded by another great power, much less a minor power.[122] For sure, adversaries sometimes threatened to send invasion forces across the English Channel, yet none ever launched the assault boats. Spain, for example, planned to invade England in 1588. But the defeat of the the Spanish Armada that same year in waters off England's coast eliminated the naval forces that were supposed to have escorted the Spanish army across the English Channel.[123] Although both

Napoleon and Hitler considered invading the United Kingdom, neither made an attempt.[124]

Like the United Kingdom, the United States has not been invaded since it became a great power in 1898.[125] Britain launched a handful of large-scale raids against American territory during the War of 1812, and Mexico raided Texas in the War of 1846–48. Those conflicts, however, took place long before the United States achieved great-power status, and even then, neither the United Kingdom nor Mexico seriously threatened to conquer the United States.[126] More important, there has been no serious threat to invade the United States since it became a great power at the end of the nineteenth century. In fact, the United States is probably the most secure great power in history, mainly because it has always been separated from the world's other great powers by two giant moats—the Atlantic and Pacific Oceans.

The story looks substantially different when the focus shifts to France and Russia. France has been invaded seven times by rival armies since 1792, and it was conquered three of those times. During the French Revolutionary and Napoleonic Wars (1792–1815), rival armies attacked France on four separate occasions (1792, 1793, 1813, and 1815), finally inflicting a decisive defeat on Napoleon with the last invasion. France was invaded and defeated by Prussia in 1870–71 and was paid another visit by the German army in 1914, although France narrowly escaped defeat in World War I. Germany struck once again in 1940, and this time it conquered France. All seven of these invasions came across land; France has never been invaded from the sea.[127]

Russia, the other continental state, has been invaded five times over the past two centuries. Napoleon drove to Moscow in 1812, and France and the United Kingdom assaulted the Crimean Peninsula in 1854. Russia was invaded and decisively defeated by the German army in World War I. Shortly thereafter, in 1921, Poland, which was not a great power, invaded the newly established Soviet Union. The Germans invaded again in the summer of 1941, beginning one of the most murderous military campaigns in recorded history. All of these invasions came across land, save for the Anglo-French attack in the Crimea.[128]

In sum, neither of our insular great powers (the United Kingdom and the United States) has ever been invaded, whereas our continental great powers (France and Russia) have been invaded a total of twelve times since 1792. These continental states were assaulted across land eleven times, but only once from the sea. The apparent lesson is that large bodies of water make it extremely difficult for armies to invade territory defended by a well-armed great power.

The discussion so far has focused on conventional military forces, emphasizing that land power is more important than either independent naval power or strategic airpower for winning great-power wars. Little has been said, however, about how nuclear weapons affect military power.

NUCLEAR WEAPONS AND THE BALANCE OF POWER

Nuclear weapons are revolutionary in a purely military sense, simply because they can cause unprecedented levels of destruction in short periods of time.[129] During much of the Cold War, for example, the United States and the Soviet Union had the capability to destroy each other as functioning societies in a matter of days, if not hours. Nevertheless, there is little agreement about how nuclear weapons affect great-power politics and, in particular, the balance of power. Some argue that nuclear weapons effectively eliminate great-power security competition, because nuclear-armed states would not dare attack each other for fear of annihilation. The preceding discussion of conventional military power, according to this perspective, is largely irrelevant in the nuclear age. But others make the opposite argument: because nuclear weapons are horribly destructive, no rational leader would ever use them, even in self-defense. Thus, nuclear weapons do not dampen security competition in any significant way, and the balance of conventional military power still matters greatly.

I argue that in the unlikely event that a single great power achieves nuclear superiority, it becomes a hegemon, which effectively means that it has no great-power rivals with which to compete for security. Conventional forces matter little for the balance of power in such a world. But in the more likely situation in which there are two or more great powers with sur-

vivable nuclear retaliatory forces, security competition between them will continue and land power will remain the key component of military power. There is no question, however, that the presence of nuclear weapons makes states more cautious about using military force of any kind against each other.

Nuclear Superiority

In its boldest and most well-known form, nuclear superiority exists when a great power has the capability to destroy an adversary's society without fear of major retaliation against its own society. In other words, nuclear superiority means that a state can turn a rival great power into "a smoking, radiating ruin" and yet remain largely unscathed itself.[130] That state could also use its nuclear arsenal to destroy its adversary's conventional forces, again without fear of nuclear retaliation. The best way for a state to achieve nuclear superiority is by arming itself with nuclear weapons while making sure no other state has them. A state with a nuclear monopoly, by definition, does not have to worry about retaliation in kind if it unleashes its nuclear weapons.

In a world of two or more nuclear-armed states, one state might gain superiority if it develops the capability to neutralize its rivals' nuclear weapons. To achieve this superiority, a state could either acquire a "splendid first strike" capability against its opponents' nuclear arsenals or develop the capability to defend itself from attack by their nuclear weapons.[131] Nuclear superiority does not obtain, however, simply because one state has significantly more nuclear weapons than another state. Such an asymmetry is largely meaningless as long as enough of the smaller nuclear arsenal can survive a first strike to inflict massive punishment on the state with the bigger arsenal.

Any state that achieves nuclear superiority over its rivals effectively becomes the only great power in the system, because the power advantage bestowed on that state would be tremendous. The nuclear hegemon could threaten to use its potent arsenal to inflict vast destruction on rival states, effectively eliminating them as functioning political entities. The potential victims would not be able to retaliate in kind—which is what

makes this threat credible. The nuclear hegemon could also use its deadly weapons for military purposes, like striking large concentrations of enemy ground forces, air bases, naval ships, or key targets in the adversary's command-and-control system. Again, the target state would not have a commensurate capability, thereby giving the nuclear hegemon a decisive advantage, regardless of the balance of conventional forces.

Every great power would like to achieve nuclear superiority, but it is not likely to happen often, and when it does occur, it probably is not going to last for a long time.[132] Non-nuclear rivals are sure to go to great lengths to acquire nuclear arsenals of their own, and once they do, it would be difficult, although not impossible, for a great power to reestablish superiority by insulating itself from nuclear attack.[133] The United States, for example, had a monopoly on nuclear weapons from 1945 until 1949, but it did not have nuclear superiority in any meaningful sense during that brief period.[134] Not only was America's nuclear arsenal small during those years, but the Pentagon had not yet developed effective means for delivering it to the appropriate targets in the Soviet Union.

After the Soviet Union exploded a nuclear device in 1949, the United States tried, but failed, to gain nuclear superiority over its rival. Nor were the Soviets able to gain a decisive nuclear advantage over the Americans at any time during the Cold War. Thus, each side was forced to live with the fact that no matter how it employed its own nuclear forces, the other side was still likely to have a survivable nuclear retaliatory force that could inflict unacceptable damage on an attacker. This "Texas standoff" came to be called "mutual assured destruction" (MAD), because both sides probably would have been destroyed if either initiated a nuclear war. However desirable it might be for any state to transcend MAD and establish nuclear superiority, it is unlikely to happen in the foreseeable future.[135]

Military Power in a MAD World

A MAD world is highly stable at the nuclear level, because there is no incentive for any great power to start a nuclear war that it could not win; indeed, such a war would probably lead to its destruction as a functioning society. Still, the question remains: what effect does this balance of terror have on

the prospects for a conventional war between nuclear-armed great powers? One school of thought maintains that it is so unlikely that nuclear weapons would be used in a MAD world that great powers are free to fight conventional wars almost as if nuclear weapons did not exist. Former secretary of defense Robert McNamara, for example, argues that "nuclear weapons serve no useful military purpose whatsoever. They are totally useless—except only to deter one's opponent from using them."[136] Nuclear weapons, according to this logic, have little effect on state behavior at the conventional level, and thus great powers are free to engage in security competition, much the way they did before nuclear weapons were invented.[137]

The problem with this perspective is that it is based on the assumption that great powers can be highly confident that a large-scale conventional war will not turn into a nuclear war. In fact, we do not know a great deal about the dynamics of escalation from the conventional to the nuclear level, because (thankfully) there is not much history to draw on. Nevertheless, an excellent body of scholarship holds that there is some reasonable chance that a conventional war among nuclear powers might escalate to the nuclear level.[138] Therefore, great powers operating in a MAD world are likely to be considerably more cautious when contemplating a conventional war with one another than they would be in the absence of nuclear weapons.

A second school of thought argues that great powers in a MAD world have little reason to worry about the conventional balance because nuclear-armed great powers are simply not going to attack each other with conventional forces because of fear of nuclear escalation.[139] Great powers are remarkably secure in a MAD world, so the argument goes, and thus there is no good reason for them to compete for security. Nuclear weapons have made great-power war virtually unthinkable and have thus rendered obsolete Carl von Clausewitz's dictum that war is an extension of politics by other means. In effect, the balance of terror has trivialized the balance of land power.

The problem with this perspective is that it goes to the other extreme on the escalation issue. In particular, it is based on the assumption that it is likely, if not automatic, that a conventional war would escalate to the nuclear level. Furthermore, it assumes that all the great powers think that conventional and nuclear war are part of a seamless web, and thus there is

no meaningful distinction between the two kinds of conflict. But as the first school of thought emphasizes, the indisputable horror associated with nuclear weapons gives policymakers powerful incentives to ensure that conventional wars do not escalate to the nuclear level. Consequently, it is possible that a nuclear-armed great power might conclude that it could fight a conventional war against a nuclear-armed rival without the war turning nuclear, especially if the attacking power kept its goals limited and did not threaten to decisively defeat its opponent.[140] Once this possibility is recognized, great powers have no choice but to compete for security at the conventional level, much the way they did before the advent of nuclear weapons.

It is clear from the Cold War that great powers operating in a MAD world still engage in intense security competition, and that they care greatly about conventional forces, especially the balance of land power. The United States and the Soviet Union competed with each other for allies and bases all over the globe from the start of their rivalry after World War II until its finish some forty-five years later. It was a long and harsh struggle. Apparently, neither nine American presidents nor six Soviet leaderships bought the argument that they were so secure in a MAD world that they did not have to pay much attention to what happened outside their borders. Furthermore, despite their massive nuclear arsenals, both sides invested tremendous resources in their conventional forces, and both sides were deeply concerned about the balance of ground and air forces in Europe, as well as in other places around the globe.[141]

There is other evidence that casts doubt on the claim that states with an assured destruction capability are remarkably secure and do not have to worry much about fighting conventional wars. Most important, Egypt and Syria knew that Israel had nuclear weapons in 1973, but nevertheless they launched massive land offensives against Israel.[142] Actually, the Syrian offensive on the Golan Heights, located on Israel's doorstep, briefly opened the door for the Syrian army to drive into the heart of Israel. Fighting also broke out between China and the Soviet Union along the Ussuri River in the spring of 1969 and threatened to escalate into a full-blown war.[143] Both China and the Soviet Union had nuclear arsenals at the time. China

attacked American forces in Korea in the fall of 1950, despite the fact that China had no nuclear weapons of its own and the United States had a nuclear arsenal, albeit a small one.

Relations between India and Pakistan over the past decade cast further doubt on the claim that nuclear weapons largely eliminate security competition between states and make them feel as though they have abundant security. Although both India and Pakistan have had nuclear weapons since the late 1980s, security competition between them has not disappeared. Indeed, they were embroiled in a serious crisis in 1990, and they fought a major border skirmish (involving more than a thousand battle deaths) in 1999.[144]

Finally, consider how Russia and the United States, who still maintain huge nuclear arsenals, think about conventional forces today. Russia's deep-seated opposition to NATO expansion shows that it fears the idea of NATO's conventional forces moving closer to its border. Russia obviously does not accept the argument that its powerful nuclear retaliatory force provides it with absolute security. The United States also seems to think that it has to worry about the conventional balance in Europe. After all, NATO expansion was predicated on the belief that Russia might someday try to conquer territory in central Europe. Moreover, the United States continues to insist that Russia observe the limits outlined in the Treaty on Conventional Armed Forces in Europe, signed on November 19, 1990, before the Soviet Union collapsed.

Thus, the balance of land power remains the central ingredient of military power in the nuclear age, although nuclear weapons undoubtedly make great-power war less likely. Now that the case for land power's primacy has been detailed, it is time to describe how to measure it.

MEASURING MILITARY POWER

Assessing the balance of land power involves a three-step process. First, the relative size and quality of the opposing armies must be estimated. It is important to consider the strength of those forces in peacetime as well as after mobilization, because states often maintain small

standing armies that expand quickly in size when the ready reserves are called to active duty.

There is no simple way to measure the power of rival armies, mainly because their strength depends on a variety of factors, all of which tend to vary across armies: 1) the number of soldiers, 2) the quality of the soldiers, 3) the number of weapons, 4) the quality of the weaponry, and 5) how those soldiers and weapons are organized for war. Any good indicator of land power should account for all these inputs. Comparing the number of basic fighting units in opposing armies, be they brigades or divisions, is sometimes a sensible way of measuring ground balances, although it is essential to take into account significant quantitative and qualitative differences between those units.

During the Cold War, for example, it was difficult to assess the NATO–Warsaw Pact conventional balance, because there were substantial differences in the size and composition of the various armies on the central front.[145] To deal with this problem, the U.S. Defense Department devised the "armored division equivalent," or ADE, score as a basic measure of ground force capability. This ADE score was based mainly on an assessment of the quantity and quality of weaponry in each army.[146] Political scientist Barry Posen subsequently made an important refinement to this measure, which was a useful indicator of relative army strength in Europe.[147]

Although a number of studies have attempted to measure force balances in particular historical cases, no study available has systematically and carefully compared force levels in different armies over long periods of time. Consequently, there is no good database that can be tapped to measure military power over the past two centuries. Developing such a database would require an enormous effort and lies beyond the scope of this book. Therefore, when I assess the power of opposing armies in subsequent chapters, I cobble together the available data on the size and quality of the relevant armies and come up with rather rough indicators of military might. I start by counting the number of soldiers in each army, which is reasonably easy to do, and then attempt to account for the other four factors that affect army strength, which is a more difficult task.

The second step in assessing the balance of land power is to factor any air forces that support armies into the analysis.[148] We must assess the inventory of aircraft on each side, focusing on available numbers and quality. Pilot efficiency must also be taken into account as well as the strength of each side's 1) ground-based air defense systems, 2) reconnaissance capabilities, and 3) battle-management systems.

Third, we must consider the power-projection capability inherent in armies, paying special attention to whether large bodies of water limit an army's offensive capability. If there is such a body of water, and if an ally lies across it, one must assess the ability of navies to protect the movement of troops and supplies to and from that ally. But if a great power can cross the water only by directly assaulting territory on the other side of the water that is well-defended by a rival great power, the assessment of naval power is probably unnecessary, because such amphibious assaults are rarely possible. Thus the naval forces that might support that army are rarely useful, and hence judgments about their capabilities are rarely relevant to strategy. In those special circumstances where amphibious operations are feasible against a rival great power's territory, however, it is essential to assess the ability of the relevant navy to project seaborne forces ashore.

CONCLUSION

Armies, along with their supporting air and naval forces, are the paramount form of military power in the modern world. Large bodies of water, however, severely limit the power-projection capabilities of armies, and nuclear weapons markedly reduce the likelihood that great-power armies will clash. Nevertheless, even in a nuclear world, land power remains king.

This conclusion has two implications for stability among the great powers. The most dangerous states in the international system are continental powers with large armies. In fact, such states have initiated most of the past wars of conquest between great powers, and they have almost always

attacked other continental powers, not insular powers, which are protected by the water surrounding them. This pattern is clearly reflected in European history over the past two centuries. During the years of almost constant warfare between 1792 and 1815, France was the main aggressor as it conquered or tried to conquer other continental powers such as Austria, Prussia, and Russia. Prussia attacked Austria in 1866, and although France declared war on Prussia in 1870, that decision was provoked by Prussia, which invaded and conquered France. Germany began World War I with the Schlieffen Plan, which aimed to knock France out of the war so that the Germans could then turn eastward and defeat Russia. Germany began World War II with separate land offensives against Poland (1939), France (1940), and the Soviet Union (1941). None of these aggressors attempted to invade either the United Kingdom or the United States. During the Cold War, the principal scenario that concerned NATO planners was a Soviet invasion of Western Europe.

In contrast, insular powers are unlikely to initiate wars of conquest against other great powers, because they would have to traverse a large body of water to reach their target. The same moats that protect insular powers also impede their ability to project power. Neither the United Kingdom nor the United States, for example, has ever seriously threatenened to conquer another great power. British policymakers did not contemplate starting a war against either Wilhelmine or Nazi Germany, and during the Cold War, American policymakers never seriously countenanced a war of conquest against the Soviet Union. Although the United Kingdom (and France) declared war against Russia in March 1854 and then invaded the Crimean Peninsula, the United Kingdom had no intention of conquering Russia. Instead, it entered an ongoing war between Turkey and Russia for the purpose of checking Russian expansion in the region around the Black Sea.

The Japanese attack against the United States at Pearl Harbor in December 1941 might appear to be another exception to this rule, since Japan is an insular state, and it struck first against another great power. However, Japan did not invade any part of the United States, and Japanese leaders certainly gave no thought to conquering it. Japan merely

sought to establish an empire in the western Pacific by capturing the various islands located between it and Hawaii. Japan also initiated wars against Russia in 1904 and 1939, but in neither case did Japan invade Russia or even think about conquering it. Instead, those fights were essentially for control of Korea, Manchuria, and Outer Mongolia.

Finally, given that oceans limit the ability of armies to project power, and that nuclear weapons decrease the likelihood of great-power army clashes, the most peaceful world would probably be one where all the great powers were insular states with survivable nuclear arsenals.[149]

This concludes the discussion of power. Understanding what power is, however, should provide important insights into how states behave, especially how they go about maximizing their share of world power, which is the subject of the next chapter.