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Maps

This book will include considerable discussion of geography. In order to help readers understand the discussion, I have provided eight general maps (listed below). Still it is not possible for this book to provide a map for every battle. Fortunately there are some good atlases of the First World War that can be consulted alongside this book. The most accessible is The Routledge Atlas of the First World War by Martin Gilbert, which is available in an inexpensive paperback edition. It is also possible to use the battlefield maps that are provided on the Internet site of the history department at the United States Military Academy at West Point. Go to http://www.dean.usma.edu/history/web03/atlas/ and click on the "Table of Contents" and then the "Campaign Atlas to the First World War." Fifty-two maps are provided, but the first click should be on the "Table of Symbols," which explains how to read a military map.

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who heard me give presentations about the First World War at the annual meetings of the American Historical Association and the American Society for Environmental History. I also gave several presentations about the war at Millsaps College, where colleagues and guests helped me to see my work in an interdisciplinary context. I am also grateful to my dean, Richard Smith, for supporting this project with a development grant and a sabbatical leave, and to Tom Henderson, the college librarian, for providing office space while I was writing. My greatest supporter has been my wife, Joanna Miller Storey, whose love and thoughtfulness stand in contrast to much that is described in this book.

CHAPTER ONE

Introduction

The First World War was a social and political cataclysm. Nine million soldiers died and millions more suffered mental and physical injuries. The war cost billions of dollars, not only in military expenses but also in damage to property. The war emboldened democrats and feminists as well as communists and fascists. During the war, four major empires collapsed. Afterwards, the peace settlements changed boundaries all around the world. All these things were highly significant for world history. But the thing that most fascinates readers about the First World War is that it seems, in hindsight, to have been avoidable. The war originated in a small conflict in Eastern Europe that snowballed into a much larger conflict. This happened because of disagreements between two groups of allied countries that were committed to rigid military plans. At the outset they took steps that were too aggressive, since none of the participants predicted the war’s awfulness.

The main lesson of the war—don’t rub into a war, it might be worse than you think—seemed especially pertinent during the Cold War. In those days, it seemed that the alliance systems led by the United States and the Soviet Union were on the brink of nuclear war and that smaller conflicts in Africa, Asia, and the Middle East might escalate into a global holocaust. Many observers were surprised to see the Cold War standoff end rather suddenly in the late 1980s. Authors proclaimed an end to history. It appeared that liberalism and globalization had triumphed. The rigid communist bloc had disintegrated, but globalization made it possible for local conflicts to escalate into worldwide warfare. The Middle East remained a hot spot where interstate
conflict was exacerbated by groups of stateless terrorists. On September 11, 2001, Al-Qaeda employed the technologies of globalization to launch attacks on New York and Washington, D.C. The United States replied by invading Afghanistan in an effort to destroy Al-Qaeda and the Taliban. One year later, the United States and its allies began to debate whether or not it was necessary to attack Iraq and what the consequences of such an attack might be. As it turned out, the campaigns in Iraq and Afghanistan have ushered in many unintended consequences. The First World War seems relevant again on the eve of its hundredth anniversary.

The First World War has inspired more authors to write books and articles than most other topics. Why is there a need for another one? There are excellent survey histories written recently by John Keegan, John Morrow, Michael Neiberg, David Stevenson, and Hew Strachan, as well as provocative works of reinterpretation by Niall Ferguson, Stéphane Audincou-Rouzeau, and Annette Becker. Two new television documentaries, featuring the historians Hew Strachan and Jay Winter, have added greatly to public understanding of the war. Yet the new histories of the war either downplay or ignore the history of the environment and technology, two of the most vibrant new fields in the historical profession. This is not to mention that environmental and technological concerns are at the forefront of public debate in the early twenty-first century.

It helps that environmental and technological history have come a long way in the past several decades. It used to be that accounts focused on the ways in which engineers, inventors, and governments created, distributed, and regulated new tools and systems, as well as humanity’s impact on the environment. In the 1970s and 1980s, historians began to focus more on cultural and social dimensions of environment and technology: how people imagine and represent the environment and technology, and how their understandings shape approaches to creating new tools and systems. Recently, many studies have moved beyond the initiators of environmental and technological change to examine how ordinary users experience and shape environment and technology.

The people who participated in the First World War had an intense experience of environmental conditions and technological changes. The war’s planners calculated how many soldiers, horses, and cannons could be moved to the front lines and then pushed through enemy territory. In their plans they had to balance manpower, technology, and geography. The war itself was fought in a variety of environments. Today we tend to remember the trenches of the Western Front, but the war was fought in open spaces, too, as well as in forests, deserts, and mountains. The war also had an economic and ecological impact far beyond the battlefields. The soldiers who experienced the war reflected on the horrors of new weapons and on the degradation of life in filthy conditions. Artists, musicians, and writers described these conditions in order to make a variety of points against the war—and for it.

Most historians think that they should write about people first and material conditions, such as environment and technology, second. Traditionally history is about human choices and the consequences of those choices, with the material world consigned to the background. Traditionally historians have dismissed works that attribute influence to environmental and technological factors. Such ideas probably explain why historians of the First World War have shied away from environmental and technological history. This is unfortunate. It is no longer sufficient to write about the impact (or lack of impact) of technologies or environmental conditions on politics or society. Today, the best studies examine the ways in which technology, politics, and society are mutually constituted or "co-produced," a term coined by Bruno Latour and fleshed out by Sheila Jasanoff in a recent book, States of Knowledge. Accounts of co-production recognize that nature, objects, states, and societies are not separate categories that impact each other. Instead, they are linked interdependently.

This book is a short narrative history of the First World War that takes into account human decisions and experiences as well as environmental and technological factors. My list of environmental factors extends beyond the impact of the war on landscapes, to consider food, geography, manpower, and the ways in which people imagined the landscape. My list of technological factors includes the development of new weapons, which are considered in every history of the First World War, while I will also consider older technologies that remained important, too.

I will not argue that environmental and technological factors simply influenced people. Instead, I will show that human decisions and material conditions were inextricably linked and that the boundaries between the two are very blurry indeed. This book will not make a case that the war introduced radical environmental and technological transformations. Most of the key technologies of the war were refinements of technologies that existed already. Much of the wartime environmental damage associated with the rapid expansion of agriculture, forestry, and industrialization continued previous patterns in a more intensive way. Battlefield landscapes and zones that were occupied and pillaged were severely damaged, but within a few decades people rehabilitated them to the point where they could be used again and even enjoyed.
Chapter One

The war changed the ways in which people thought about technology and the environment. Before the war, people who lived in Europe and its colonies generally regarded industrial technology as an instrument of progress, while during and after the war significant doubts crept in about the costs of progress. After the war, people did not abandon thoughts of technological progress but they did have a keener sense of modernity's costs. New technologies pushed minds and bodies to the limits of their capacity, one of the most important intersections of human consciousness and material experiences during the First World War. In the run-up to the war, Europeans saw the landscape with a view to conquering it, dividing it, and ruling it. During and after the war, the costs of conquest became high. Soldiers experienced personal degradation, physical injuries, and mental collapse in the midst of technologically induced environmental conditions, which they remembered when they formed new identities in the postwar world.

Chapter Two

Environment, Technology, and the Origins of War

It used to be that history textbooks about Europe described the period between 1815 and 1914 as an era of tranquility. It is true that during that time period the most powerful countries in Europe tended not to fight with each other. This tranquility contrasted strongly with the era of the French Revolution and Napoleon (1789–1815), when large numbers of Europeans fought and died for the sake of their nations and empires. By comparison, the period from 1815 to 1914 does seem relatively tranquil. The relative absence of warfare between nations allowed for a major burst in industrialization and technological development, which resulted in disruptions, to be sure, even as the overall standard of living rose in most places.

Yet this era cannot honestly be described as an era of complete tranquility. In the middle of the century, major conflicts were associated with the unification of the German and Italian nations. In response to the forces of nationalism, the Austro-Hungarian Empire and the Ottoman Empire fought to stave off disintegration. Meanwhile, Britain and France—and to a lesser degree Germany, Italy, Japan, Portugal, and the United States—expanded their empires overseas. For the most part, their colonies were obtained by shedding the blood of the native inhabitants and, to a lesser extent, the blood of their own soldiers.

The building of nations, empires, and industries was the main feature of European, Japanese, and U.S. history in the period from 1850 to 1914. The times seemed peaceful from the perspective of the industrializing countries, but much of the rest of the world found itself dominated by force. It was hard
to resist the industrial countries, which enjoyed a temporary advantage in weapons, communications, and medicine. They harnessed the economies of their colonies in Africa, Asia, and the Pacific to serve their needs, while also reaping profits from investments in parts of the world that were not formally colonized, such as China and Latin America.

Technologically driven dominance fostered a sense of well-being and superiority in the industrializing countries, even as their dominance brought new hopes and miseries to much of the rest of the world. This seems to be a contradiction but many scholars have concluded that it is not. The prevailing political idea of the nineteenth-century industrial countries was liberalism. Liberals believed in the freedoms guaranteed by such documents as the U.S. Bill of Rights, like freedom of religion and freedom of speech. Liberals also believed in free trade and tended to support laissez-faire economic policies, in other words those policies that gave business owners a free hand to regulate their own affairs. Liberalism was associated with progressive causes, like the abolition of the slave trade and the emancipation of the slaves. Liberalism was also associated with revolutionary change. British liberals reformed their parliament in 1832 to make it more representative. Liberals on the European continent were associated with movements to overthrow monarchies and to form new nation-states like Germany and Italy. In the United States, liberalism was associated with the Republican Party and with the Union side in the Civil War. In Japan, liberals were led by the Emperor Meiji as they remade their country into a unified, industrializing powerhouse with a constitutional government.

Nineteenth-century liberalism is often remembered for its positive political accomplishments, yet liberalism had its darker side. Liberal thinkers believed that free markets and unregulated businesses produced the greatest good for the greatest number of people, but many people suffered through wrenching changes in agriculture and industry. Standards of living improved overall but many people were still miserable. Many liberals turned a blind eye to industrial slums and to rural starvation, too. In the face of mass misery in Ireland during the great famines, or in the working-class neighborhoods of industrial cities like Manchester, liberals often adhered to their faith in free-market solutions, even when the free market did not appear to be helping. Liberals were even able to make themselves comfortable with the use of force to dominate less-developed countries. To liberals it appeared to be folly for Africans and Asians to resist empire-building, because the industrial countries had superior knowledge and technology. Liberal belief in free trade and free government might seem to contradict the spread of empires around the world, but the empire builders often thought that they were doing "the

natives'" favor by showing them how to run things. Liberals thought that when Africans and Asians demonstrated that they had assimilated liberal ideas about good government—a process that some liberals likened to children growing up—then they might rule themselves.

With hindsight, it is possible to see that liberal imperialism contained the seeds of its own destruction. In the colonies, Americans, Europeans, and Japanese developed ideas about their own racial superiority that they began to employ in their relations with their neighbors. Many Europeans even began to think of themselves as separate races—a French race, a German race, and an Anglo-Saxon or English race—even though millennia of migrations and interactions between Western European countries made such claims historically and biologically preposterous. Familiarity with warfare against colonial "inferiors" also predisposed Americans, Europeans, and Japanese to think that their armies and navies could conquer other's territories.

Empires at High Tide and Low Tide

It seems extraordinary to us today that, only a century ago, most of the countries that were involved in the First World War were empires, but it must be borne in mind that empire has been the most common form of government throughout world history. Three of the principal countries involved in the First World War were governed by emperors: Austria-Hungary, Germany, and Russia. The Austrian emperor presided over a large territorial empire comprising more than a dozen nationalities, but he was limited in some ways by a constitution. The German emperor had fewer constitutional limitations over his homogeneous empire in central Europe, together with a handful of overseas territories in Africa and Asia. The Russian empire spread from the Baltic Sea to the Pacific Ocean, and from the Arctic Ocean to the Black Sea, and the Russian emperor had the authority to override all of the constitutional limits that had been placed on him.

To the south, the Ottoman Empire had been fragmenting for some decades and its sultan had recently been made a figurehead by a junta of modernizing reformers. Even so, the Ottoman Empire still held on to significant territories that stretched from the Mediterranean to the Persian Gulf, including most of the modern Middle East. Another country, Japan, had a constitutional emperor and a small territorial empire, consisting mainly of Korea and Taiwan. Another small territorial empire was possessed by Italy, which had a constitutional monarch. And another country with a constitutional monarchy, Great Britain, possessed enormous territories overseas, some of which were already making the transition to self-government: Australia, Canada, New Zealand,
and South Africa. France and the United States were both republics but still retained sizeable colonial empires.

At the start of the First World War, possibly the most interesting fact about world geography was that European empires controlled 84 percent of the planet's land surface. How was that possible? A hundred years before the war, the figure was much smaller. A hundred years after the war, colonial empires will probably be almost completely eliminated. But in 1914 Europe was at the height of its power relative to the rest of the world. Europe's acquisition of colonies had accelerated in the 1870s. The First World War would result in defeat for the Austrian, German, Ottoman, and Russian empires. Russia descended into violent revolution, while Austrian, German, and Ottoman territories were partitioned by the Allies. The British and French empires made a net territorial gain during the First World War, even as their economies were stretched practically to the breaking point. It would not be until the Second World War that their overreaching, plus discontent in the colonies, would result in moves toward decolonization.

In each case of an empire expanding its reach, there were particular circumstances that explain colonial domination. Europeans imposed themselves on vast territories in Africa, Asia, and the Pacific for many different reasons. European businesses exploited colonial resources and asked for support in obtaining land and labor. European settlers went out to start new lives for themselves. European missionaries and philanthropists sought to save souls and improve lives.

There were many specific circumstances that fostered European dominance in particular colonies. Some of them have been explained by authors who write about technology and the environment. Jared Diamond argues in his book Guns, Germs, and Steel that European countries were endowed with natural resources that enabled them to excel in the years after 1492, when their economies enabled them to conquer much of the rest of the world. The Western Europeans believed that they were inherently racially superior, but in fact their superiority derived from the way in which they had adapted to natural resource endowments. The peoples of Eurasia simply had more plants and animals to domesticate, while these resources—as well as disease immunities—could be easily exchanged along a natural east-west corridor. Africa, the Americas, and the Pacific, which would come to be colonized by Europeans, did not have such a corridor, nor did they have a similar set of natural resources. Diamond's explanation helps us to understand that the European colonisation of these regions was not somehow the fault of the colonized peoples for being inferior. His work does not shed much light on
European empire-building in Asia, not does he consider the many ways in which modern people have changed environments and natural resources. A second explanation of European dominance was made in a book by Daniel Headrick called The Tools of Empire: Technology and European Imperialism in the Nineteenth Century. Headrick asked why imperialism intensified from 1850 to 1920, when the motivations to conquer other countries remained relatively consistent, generally speaking, from 1492 to the present. Headrick argued that, while motives remained consistent, the means of achieving those motives changed in the late nineteenth century. Before 1850, European technology was not vastly superior to the technologies available in the rest of the world. Key developments in the late nineteenth century, notably in medicine and metallurgy, gave Europeans particular temporary advantages. Research on the causes of malaria, the manufacture of quinine, made it possible for Europeans to survive many parts of the tropics that were previously thought to be "White Men's Graves." Steam engines and steel ships allowed Europeans to dominate the world's coasts and trade routes. The invention of the telegraph and the laying of submarine cables under the oceans made it more efficient to administer colonial governments and businesses, as did the development of better railways.

Headrick, like Diamond, places environment and technology at the center of his explanations of European dominance. From the standpoint of explaining the imperialism before the First World War, perhaps the most important developments were improvements in weapons. New weapons were used in Europe, particularly in the short wars that were associated with the unification of Germany and Italy. The struggle over the unification of the United States—the Civil War—was much bloodier, thanks in part to improvements in weaponry. The colonies conquered in the nineteenth century were also a significant proving ground for the new weapons. Firearms technology changed a great deal. Single-shot muzzle-loading pistols were replaced by six-shot revolvers in the 1840s and 1850s. The first semiautomatic pistols appeared in the 1890s and were in widespread use by the First World War. The revolution in rifles was even more spectacular. Mid-century rifles were muzzle-loaders that could be fired and loaded from paper cartridges two or three times per minute. In the 1850s, most European armies switched to breech loaders, which could fire upwards of a dozen shots per minute, with bullets that were starting to be loaded in metallic cartridges. By the 1890s, breech-loading rifles were equipped with magazines, which increased the rate of fire even more. And the new magazine rifles were firing bullets loaded in metallic cartridges with smokeless powder, which increased the velocity of the bullet while making it easier for the shooters to conceal themselves.

Smokeless powder, metallic shell cartridges, and breech loading were increasingly features of artillery, too. But still the cannons recoiled after every shot and had to be repositioned, reaimed, and reloaded. Starting in the 1890s, new recoilless cannons were equipped with an oiled, pneumatic slide for the barrel, so that a fired barrel slid back and popped forward without rocking the carriage out of position. A cannon that did not recoil and that could be loaded from the breech could be fired a dozen times every minute without resting.

In the late nineteenth century rates of artillery, pistol, and rifle fire increased dramatically, but perhaps the most dramatic innovation in firing speed was the machine gun. The first machine guns were produced during the U.S. Civil War. They were hand-cranked devices with multiple barrels that were capable of firing long, dense bursts of bullets. Unfortunately they were also so heavy that they had to be mounted on artillery gun carriages. In the 1880s, heavy single-barrel machine guns were invented by Hiram Maxim. These could achieve a rate of fire upwards of five or six hundred rounds per minute. Their bulk required a team of several soldiers to serve them, and the fact that their barrels were cooled by water meant that soldiers had to continuously drain and replenish the tanks. Even so, they were used to great effect in the colonial warfare of the 1890s. By the time of the First World War, several countries had adopted lighter versions of the Maxim design, while other designs that were even lighter and more mobile were becoming available.

Several wars around the turn of the century demonstrated that the new weapons were transforming the nature of combat. In 1918, a young British army lieutenant, Winston Churchill, participated in the battle of Omdurman in Sudan. This was an engagement that pitied the British army and its Egyptian allies, on the one side, and the forces of the Mahdi on the other. In one of his first books, The River War, Churchill described the futile charge of the "Dervishes," the followers of the late Islamic leader, the Mahdi, against the British positions. About fifty thousand Dervishes (or Mahdists), armed with outmoded rifles and bearing banners with verses from the Quran, lined up opposite a long line of eight thousand British and seventeen thousand Egyptian soldiers, who had their backs to the Nile River. The Mahdist forces began to change across an open plain. At a range just under three thousand meters, the British and Egyptian forces opened fire. Remembering the charge of the Mahdists, Churchill wrote:

"Did they realize what would come to meet them? They were in a dense mass, 2,800 yards from the 32nd Field Battery and the gunboats. The ranges were
known. It was a matter of machinery. The more distant slaughter passed unnoticed, as the mind was fascinated by the approaching horror. In a few seconds swift destruction would rush on these brave men. They topped the crest and drew out into full view of the whole army. Their white banniers made them conspicuous above all. As they saw the camp of their enemies, they discharged their rifles with a great roar of musketry and quickened their pace. For a moment the white flags advanced in regular order, and the whole division crossed the crest and were exposed. Forthwith the gunboats, the 32nd British Field Battery, and other guns from the emplacements opened fire on them. About twenty shells struck them in the first minute. Some burst high in the air, others exactly in their faces. Others, again, plunged into the sand and exploded, dashed clouds of red dust, splinters, and bullets amid their ranks. The white banniers toppled over in all directions. Yet they rose again immediately, as other men pressed forward to die for the Mahdi's sacred cause.

The charge continued. As the Mahdist drew closer, British and Egyptian troops began firing at them from Maxim guns and rifles, too. Churchill continued:

Eight hundred yards away a ragged line of men were coming on desperately, struggling forward in the face of the pointless fire—white banners tasseled and collapsing, white figures subsiding in dozens to the ground, little white puffs from their rifles, larger white puffs spreading in a row all along their front from the bursting shells. . . . The tiny figures seen over the side of the backsight seemed a little larger, but also fewer at each successive volley. . . . The empty cartridge cases, tinkling to the ground, formed a small but growing heap beside each man. And all the time out on the plain on the other side bullets were tearing through flesh, smashing and splintering bone; blood spouted from terrible wounds; valiant men were struggling on through a hell of whistling metal, exploding shells, and spattering dust—suffering, despairing, dying.

By the end of the Battle of Omdurman, more than ten thousand Mahdist soldiers lay dead. Thousands more were wounded or taken prisoner. By contrast, on the British and Egyptian side, forty-eight were killed and several hundred wounded.

The new weapons made it very difficult for an army to rush an opponent's position. In order to attack successfully, armies would have to adapt their tactics. Ideally, attacking forces would need to have numerical superiority. They would also need to precede an attack with a heavy artillery bombardment. It appeared that the new weapons gave defenders a significant advantage. This was seen at Omdurman and time and time again in colonial warfare during the late nineteenth century. It was also seen as early as the U.S.

Civil War (1861–1865) and as recently as the war between Russia and Japan (1904–1905). Yet in the years before the First World War, Europe's armies were not taking these lessons fully into account. Western European soldiers discounted these examples, as they took place outside of Europe, where the professionalism of armies was called into question.

The German Question

In the late nineteenth century, Britain was not the only country to harness new ideas and new technologies to expand its territory. France gained huge new territories in Africa that stretched from the Mediterranean to the Congo, as well as the present-day countries of Vietnam, Laos, and Cambodia. Asia's rising powers, Japan, conquered Korea and Taiwan at the expense of the declining Chinese empire. The United States defeated the declining Spanish empire in a short, sharp war in 1898 that resulted in the transfer of Cuba, Puerto Rico, and other islands in the West Indies, plus the Philippines. To many people in the United States and Japan, the old empires of Spain and China seemed ripe for the picking. The United States made promises to nationalists in all their colonies that imperial rule would result in self-governance, but the United States also fought a brutal war against Philippine guerrillas who wanted to achieve independence quickly, on their own terms. Japanese rule in Korea and Taiwan was generally repressive and was deeply resented by Chinese and Korean nationalists.

The American, British, French, and Japanese empires appeared to be on the rise. Several empires, like the Chinese and Spanish, as well as the Austro-Hungarian, Ottoman, and Russian empires, appeared to be in trouble. None had embraced industrialization as quickly or as extensively as the rising powers. The Russians fought the Japanese from 1904 to 1905. The Japanese navy sank a large portion of the Russian navy at the battle of Tsushima while the Japanese army inflicted heavy casualties on the Russians at the battle of Mukden. Russia faced challenges within its borders, too, both from moderate politicians who wanted to put constitutional limits on the tsar and from socialist revolutionaries. National groups within the Russian empire, including Finns, Poles, and Ukrainians, clamored for independence, while the empire's large Jewish population experienced—and resented—terrible periods of persecution known as "pogroms." Many Jews turned to Zionism, the belief in the creation of a separate Jewish state. Independence movements were strong in the Austro-Hungarian Empire, too. Ties of personal loyalty to the Catholic, German-speaking Austrian emperor no longer appeared likely to keep in check the national aspirations of the empire's
Catholic Croats, Czechs, Hungarians, Italians, Poles, Slovaks, and Slovenes, not to mention its Orthodox Serbs, its Bosnian Muslims, and a number of other ethnic groups who were Catholic, Orthodox, and Muslim.

The new empire of Germany sought to find a role for itself in the era of industrialization and empire-building. Germany was industrializing rapidly and was exceeding all other nations in the quality and volume of its productivity. All the while, German agriculture remained highly productive. German universities were generally recognized to be the best in the world, while German literature, music, and philosophy were widely admired, too. Yet this was not enough for many Germans, who wished their country to have a colonial empire as well as a dominant army and navy. The First World War's origins stem largely from the rise of Germany to the status of a great power. For this reason Germany's rise requires careful explanation.

Before the 1840s, the German-speaking people of Central Europe did not have their own national government. Instead, Germany was divided into many different countries with many different sorts of governments. Between the 1840s and the 1870s, Germany was united by the government of Prussia, a state centered around Berlin in the northeastern part of Germany. Prussia was led by kings from the Hohenzollern family with the help of brilliant aristocratic politicians like Otto von Bismarck, who led the negotiations for Germany's new federal constitution.

Prussia united the small, German-speaking states of Central Europe into one federation by means of alliances and warfare. The final war of 1870 resulted in the incorporation of the southwestern state of Bavaria. This move was resisted by the French emperor, Napoleon III. The French were defeated by the Prussians, who seized the French provinces of Alsace and Lorraine, on the west side of the Rhine River. Major upheavals in France resulted in the collapse of Napoleon III's government. Napoleon's imperial government was replaced by a republic, while French nationalists nursed a grudge against Germany for seizing French territory. A French man, Robert Pouštis, recalled that "When I was a boy, in school and with the family, we often spoke about the lost provinces—Alsace-Lorraine, which had been stolen from France after the war of 1870. We wanted to get them back. In the schools the lost provinces were marked in a special color on all the maps, as if we were in mourning for them." This widely shared sense of grievance was palpable and it even found its expression in imaginative geographical representations on maps. These imaginative representations flew in the face of some complex realities. Alsace and Lorraine contained many German-speakers as well as quite a few people who spoke both German and French. Like many parts of Europe, it was an ethnic and linguistic hodgepodge that became subject to nationalistic claims.

After defeating the French and incorporating Bavaria, the German federation was renamed the German Empire. Germany faced two related problems, one internal and one external. The external problem had to do with geography and the frequently expressed aim of French nationalist politicians to regain Alsace and Lorraine. So long as Germany held Alsace and Lorraine, it could count on France to be an enemy. With an enemy on the western border, the Germans had to make sure that they had good relations with their neighbors to the east, in Russia, and their neighbors to the southeast, in Austria-Hungary. The Austrians at least shared a common language with Germany and, in many respects, a common culture. That was not the case with Russia. It became a central preoccupation of German diplomacy in the 1870s and 1880s, as the German government worked to ensure that Russia remained friendly—or at least neutral. Relations with Britain were important, too. Britain possessed the world's largest navy, which could easily choke off Germany's access to the North Sea and the wider world. Britain had a long-standing policy of avoiding alliances with other countries. This made for an alliance between Britain and Germany unlikely. It was also important for Germany to remain on cordial terms with Britain, so that Britain would not be driven to change its policy and ally itself with France.

Germany's external, geographical predicament was tempered by an internal political problem. In 1848, revolutions swept western and central Europe, with socialists playing prominent roles in the upheavals. Socialist threats to abolish private property and to have governments own farms and factories alarmed private property and to have governments own farms and factories alarmed private property owners, who had once prospering as Europe industrialized. Frightened the middle classes, who were prospering as Europe industrialized, in order to fend off socialism, middle-class Germans threw their support behind the unification of Germany under Prussian leadership, even though this meant that they would be governed by autocratic emperors and their supporters in the Prussian military. Government by soldiers and emperors was preferable to government by socialists—at least the empire would not take away middle-class property.

The downside to this bargain for educated, middle-class Germans was that the new government was not fully accountable. The legislature was the right to approve the imperial budget and to regulate the size of the military. It authorized numerous national institutions, including the full range of national bureaucracies. But beyond domestic affairs in
powers were limited. The legislature had no control over the army, navy, or foreign affairs, which were the prerogative of the kaiser. He continued to apportion all offices in the Prussian army, who swore an oath of personal loyalty to him, not to the imperial government. The imperial armed forces were dominated by Prussia, although leaders of the other states appointed their own officers. The Prussian king's chief minister, the minister-president, managed civil and foreign affairs, but even he had little influence over the generals, who answered directly to the king. As Prussia formed the new German Empire by federating itself with more German states, the king of Prussia became the German emperor, or kaiser, and his minister-president became the German chancellor. Each state retained its own government, law, and tax system, although a national tax was also put into place in most states. Most states also participated in national postal and telegraph systems. All state armies were commanded by the kaiser, who took control of collective foreign policy, too.

The Prussian system worked well enough so long as the kaiser was dependable. Dependability was certainly one of the traits of Kaiser Wilhelm I, who ruled from 1858 to 1888. He was an authoritarian who relied on his highly resourceful, conservative minister-president, Bismarck, to achieve German unification. After unification was achieved in 1870, Bismarck crafted a foreign policy that recognized Germany's geographic vulnerabilities. The enmity of France was guaranteed, so Bismarck secured treaties with Germany's other neighbors that aimed to isolate France and to protect Germany's southern and eastern borders. The key to security in the south and east was to prevent conflict between Austria-Hungary and Russia over former Ottoman territories in the Balkans. In 1873, Bismarck orchestrated an agreement between Germany, Austria-Hungary, and Russia called the Three Emperor League. This was not a formal alliance, but an undertaking on the part of Austria-Hungary and Russia to allow Germany to mediate their disputes. The league faded in the late 1870s but was renewed in 1881. In the meantime, in 1879 Bismarck negotiated an alliance with Austria-Hungary, the Dual Alliance, which expanded to include Italy in 1882 and then was known as the Triple Alliance. The Austrians and Russians were not willing to sign an alliance, but, to avoid war with Russia, in 1887 Bismarck negotiated the Reinsurance Treaty, which stated that, if either Germany or Russia were attacked, the other country would remain neutral. Given the limitations of geography, the enmity of France, and the baseness between Austria-Hungary and Russia, this was the best possible diplomatic solution.

German foreign policy was controlled by the kaiser, who delegated authority to the chancellor. Chancellor Bismarck served at the pleasure of Kaiser Wilhelm I. When Wilhelm I died in 1889, he was succeeded by his son, Friedrich, who died after only three months. Friedrich's son, the thirty-year-old Wilhelm II, then succeeded to the imperial throne. Kaiser Wilhelm II was aggressive and unbalanced. An accident at birth left him with a crippled left arm. He compensated for his physical disability by making public appearances in a wide array of fancy naval and military costumes; by making a point of excelling at riding, shooting, and other physical activities that were not easy with one arm; and by gaining a reputation as a domineering yet superficial conversationalist and speedwalker. He was overbearing and insecure—not the sort of dependable leader who could be relied upon to manage Germany's delicate internal and external problems.

Kaiser Wilhelm II clashed immediately with Bismarck over social policy. Wilhelm favored social reforms as a way of persuading working-class voters to turn away from socialism; Bismarck favored repression. In 1890, after socialists made gains in the elections to the legislature, Wilhelm fired Bismarck. Bismarck's successor as chancellor, Leo von Caprivi, persuaded Wilhelm that the Triple Alliance between Germany, Austria-Hungary, and Italy was inconsistent with the Reinsurance Treaty between Germany and Russia. They dropped the Reinsurance Treaty and strengthened the Triple Alliance.

Almost immediately, Russia began to negotiate with France. France and Russia drew closer over the course of the 1890s, and by 1899 the two countries had signed a military alliance. They pledged to attack Germany if either country were attacked by Germany. Even if Germany or its allies mobilized their armies, France and Russia pledged to mobilize theirs. The alliance between France and Russia was Bismarck's geographical nightmare come true. Germany was now surrounded by enemies working together.

This fundamental problem in diplomacy and geography came to dominate the thinking of Germany's military planners. It was related to a fundamental problem in manpower. The German army was recruited mainly from the countryside. The officers tended to be the sons of landowners while the enlisted men tended to be the sons of peasants. Composing the army in this way ensured that it remained conservative; including large numbers of city-dwellers might make it more liberal. When France and Russia threatened to surround Germany, one possible response would have been to draft more recruits from the city as well as from the country. Such a move did not meet with the approval of most German generals. Urban, middle-class officers were likely to be more critical of policy, while urban working-class men might "infect" the army with socialism. Fearing such a result, the kaiser and his generals tried to make do with the army they had. This decision meant
that the German government had to encourage the military reliability of its allies, Austria-Hungary and Italy. And the army would have to plan and train as well as adopt new technologies in order to maximize its efficiency in strategy, operations, and tactics.¹

In the minds of some prominent Germans, efficiency was a necessity for survival. A professor and popular lecturer from the University of Berlin, Heinrich von Treitschke, wrote in the late 1890s that "Without war no State could be. All those we know of arose through war, and the protection of their members by armed force remains their primary and essential task. War, therefore, will endure to the end of history, as long as there is multiplicity of States. The laws of human thought and of human nature forbid any alternative, neither is one to be wished for." For Treitschke, war was a natural and positive state. His thoughts were echoed by the German general Friedrich von Bernhardi, who believed that war was a natural and positive part of human evolution. In his popular book, Germany and the Next War, Bernhardi wrote:

This aspiration [for the abolition of war] is directly antagonistic to the great universal laws which rule all life. War is a biological necessity of the first importance, a regenerative element in the life of mankind which cannot be dispensed with, since without it an unhealthy development will follow, which excludes every advancement of the race, and therefore all real civilization.

"War is the father of all things." The sages of antiquity long before Darwin recognized this.

The struggle for existence is, in the life of Nature, the basis of all healthy development. All existing things show themselves to be the result of contesting forces. So in the life of man the struggle is not merely the destructive, but the life-giving principle. "To supplant or to be supplanted is the essence of life," says Goethe, and the strong life gains the upper hand. The law of the stronger holds good everywhere. Those forms survive which are able to procure themselves the most favorable conditions of life and to assert themselves in the universal economy of Nature. The weaker succumb... The man of strong will and strong intellect rises by every means to assert himself, the ambitious strive to rise, and in this effort the individual is far from being guided merely by the consciousness of right.²

Nor all Germans believed this kind of rhetoric, in which warfare was described as natural and positive. It is significant, though, that Treitschke and Bernhardi were popular and had followers in the military. If enough people came to believe that war was a natural and biologically essential activity, then when a crisis came it would seem natural to take steps toward conflict.
Planning for War

When German generals realized that there was a real possibility of a simultaneous war against France and Russia, they began to develop a plan that maximized the use of available manpower. Manpower—and the capacity of the state to manage it—became the central environmental factor of the war that followed. Another key factor in war planning and war fighting involved soldiers in responding creatively to the challenges of geography and technology. As we have seen, weapons such as quick-firing field artillery, machine guns, and breech-loading rifles were making warfare more lethal. Already, in the U.S. Civil War and in the Russo-Japanese War, soldiers had responded to the new weapons by digging trenches. Keeping armies in trenches for long periods of time was expensive, while waging war without achieving objectives was unpopular. These problems were familiar to generals, politicians, and intellectuals. Karl Marx’s collaborator, Friedrich Engels, predicted in 1887 that there would soon be a devastating war in which eight to ten million people would die. Helmut von Moltke, retiring as Germany’s chief general in 1890, warned German legislators that wars between European states were no longer going to be small. In the future, there would be a devastating “people’s war” lasting for years. The Polish banker, Ivan Bloch, warned specifically about the deadliness of the new weapons. He predicted that a future war would feature trench warfare, high mortality, and economic ruin. Sadly, Bloch concluded that the nations of Europe would appreciate the nature of the problem and do everything possible to prevent war’s outbreak.1

To make matters more challenging, the French had built heavy fortifications along their relatively short border with Germany and also in the vicinity of Paris. By contrast, Russia, which then shared a long border with Germany, was a vast country. In 1812, when Napoleon invaded, the Russians used their geography as a weapon. They burned their own people’s farms and towns, calculating that Napoleon’s army could not march all the way to Moscow carrying their own supplies. The Russians were correct. Napoleon’s army was defeated and only a remnant made it back to Paris alive.

Germany’s leading generals dreaded the prospect of a two-front war against Russia and France, but, in the event that this should happen, the German general staff made contingency plans. Before the 1890s, such plans were almost entirely defensive. The generals believed that it would prove impossible to break through France’s defenses. Instead, they prepared to defend Germany from a French invasion. In the east, they planned to advance into Russian Poland and build fortifications. An advancing Russian army would hopefully be defeated, but pursuit into the Russian heartland was thought to be a bad idea. When the German generals imagined how to fight a two-front war, they concluded that geography forced them to fight defensively.

In 1891, as the French and Russians were drawing closer to each other, the new chief of the German general staff, General Alfred von Schlieffen, began to work on a bold new plan that would allow the German army to go on the offensive. First the German army would throw most of its weight at the French, whose army could mobilize—or get to the battlefield—relatively quickly. Then, after defeating France, the Germans would transport most of their army to the east, where they would defeat the slow Russian army. German troops would have to be moved quickly to the border with France and then quickly to the border with Russia, a plan that depended heavily on railroads and telegraphs. This could be done according to complex timetables created by German officers. The trick lay in defeating France very quickly. Schlieffen dedicated his tenure as chief of staff to imagining and planning for this two-front war. During the mid-1890s, he worked on the details of a plan to use heavy artillery to demolish French forts. Much to his chagrin, testing revealed that this might not work quickly enough. Next Schlieffen sketched plans for the German army to go around French fortifications by invading through Luxembourg and the south of Belgium. This would violate the neutrality of these countries and possibly draw Britain into the conflict—Britain guaranteed the neutrality of Belgium by treaty. Britain was likely to have practical problems with a German occupation of Belgium. Belgian ports were only a stone’s throw across the North Sea from the east coast of England. The possibility of provoking the British caused the German generals some concern, but, as the British army was small, Schlieffen discounted it as a short-term threat.

As Schlieffen developed his plan in 1905, he calculated that he needed to strike France even harder than he had thought previously. Now most of the manpower of the German army would line up against France. The left wing, in the south, would withdraw from Alsace-Lorraine back to defensive positions in Germany while the right wing, to the north, would move through all of Belgium and Luxembourg, plus the southernmost corner of the Netherlands, and drive toward the coast. The near the coast, it would turn north in a giant hooking motion to surround Paris from behind. The French army would be surprised and defeated. Paris would fall to the Germans, who would then send most of their troops back east to face the Russians.

Schlieffen’s plan was a gamble. The gamble was based on elaborate calculations about the movement of army units by rail and road, yet even with all the careful study there were few certainties. With training, the German army could be relied upon to mobilize quickly. With planning, the German
railroads could carry troops to their destinations. But how hard would the French resist? Would the small Belgian army surrender? Or would it fight and thereby stall the Germans? Would Britain intervene more quickly than was thought possible? Britain and Belgium could only put small forces in the field, but all they had to do was to delay the Germans. If the German attack on France slowed down even by a few days, the Russians might be able to capture Berlin.

The most important variable was the speed of Russian mobilization: how quickly could the Russians get an army into the field and across the German border? Schlieffen calculated that the Germans had forty-two days to defeat the French. The Austro-Hungarian army would help to pin down Russian forces, but only in the southeast. By forty-two days, the Russians would be on the eastern border of Germany, within striking range of Berlin. The massive attack on France made it necessary to leave only a small part of the German army in the east, where it would be used only for defensive purposes. With the Russians bearing down on Berlin, there was no room for error in France. A delay of a day or two could cost Germany its own capital city.

Schlieffen became obsessed with his plan's details. The key element involved sufficient manpower traversing geography, a basic environmental and technological problem. In a short period of time, was it possible to funnel enough German troops and supplies through Belgium in order to ensure a forty-two-day victory in France? The Belgians and French would destroy their railroads, making it necessary for German soldiers to advance on foot. Could the roads hold all of them? On the right or northern wing, Schlieffen planned to deploy thirty army corps, approximately one million men plus their equipment and horses. This was the figure thought to be necessary to defeat France, yet there were geographical limitations to their deployment. Each army corps consisted of two divisions, each with 17,500 men. In ideal circumstances, an army corps did not advance in one long column but in multiple columns running in parallel. If a corps had plenty of parallel roads, it could advance between twenty-nine and thirty-two kilometers in a day. If the corps started at dawn, by dusk the tail end of the column would have enough time to catch up with the head. In Belgium and northern France, parallel roads could be found within one or two kilometers of each other but the front only extended three hundred kilometers. This left only ten kilometers of front for each army corps. Given that there might only be between five and ten parallel roads, a corps could not advance the full twenty-nine to thirty-two kilometers in a day and still have the tails of the columns catching up to the heads. Based on this evidence, the historian John Keegan concludes that Schlieffen's plan was a geographical impossibility. Schlieffen
himself recognized that too few troops were assigned to the northern, right wing. He urged the addition of eight army corps, even though he knew that the roads could not carry them quickly enough.

After Schlieffen's retirement in 1906, the German general staff was led by Helmuth von Moltke the Younger, so-called because he was the nephew of the elder Helmuth von Moltke, who had died in 1891. Moltke the Younger diminished some of the military and political risks of Schlieffen's plan. In the original plan, the German army withdrew from Alsace-Lorraine in order to ensure the strength of the northern flank. Now Moltke hesitated to make Germany vulnerable to a French thrust across the Rhine and made plans to hold Alsace-Lorraine, reinforcing it with several divisions taken from the north. The original plan had the German army crossing through the southernmost corner of the Netherlands, an act that would have created another small but significant enemy for Germany. Moltke's revision to Schlieffen's plan eliminated this move. The north wing would not move through the Netherlands, only through Belgium and Luxembourg. With the north wing reduced in mobility and size, it was expected not to range as far into French territory, but it was hoped that its size was still sufficient to defeat the French. Even the revised plan was still offensive and inflexible.

From the 1890s to 1914, French and Russian planners also shifted from defensive to offensive operations. And like the Germans, they adopted inflexible plans that played down the realities of geography and technology. The French made plans between 1898 and 1909 that all involved deploying troops defensively along the French border, with the later plans placing larger numbers of troops near Belgium. The later plans also relied more heavily on the use of army reserves. In 1911, the leading French general, Victor Michel, proposed further modifications along these lines, completely incorporating the reserves with active-duty forces and planning for a preemptive strike into Belgium. Still, even under Michel, the French plans remained basically defensive in nature. But later in 1911, France's new right-wing government sacked the left-leaning Michel and replaced him with General Joseph Joffre. Joffre developed a plan, known as Plan XVII, that committed the French army to an offensive in order to recapture Alsace and Lorraine.

Having restored French prestige, they would then punch into the center of Germany. From there it would be a long, deadly march to Berlin. The French army chose offense over defense for political reasons—right-wing politicians hoped to restore the glory of France. They hoped that they could make such a rapid advance that they could overcome the German army and the defensive firepower of the new weapons.

The Russians resisted French pressure on them to mobilize quickly. Russian generals recognized that the size of Russia and its relatively technological backwardness would delay sending the country's active-duty troops into the field. Its reserve forces could take months. Between 1910 and 1914, the Russian army pledged to help France by mobilizing its most efficient units to attack Germany within sixteen days.9

As the French persuaded the Russians to make specific commitments to deploy troops, they also met with the British, even though the British were not formally allied with them. In 1911, France's chief general, Joseph Joffre, met with his British counterpart, Sir Henry Wilson, to discuss how Britain's army of six divisions might be included in Plan XVII in case war broke out on the continent. Wilson began to plan for a British deployment to Belgium. Wilson did not make any definite commitments to Joffre yet it increasingly appeared that Britain would join France against Germany. Many people in Britain saw France as a historic enemy. And the British people, with their ancient rights and liberties guaranteed by their government, were loath to ally themselves with Russia's autocratic state. The British drift toward Russia and France can be explained, in part, by the kaiser's diplomacy. His desire to challenge British naval supremacy put a real strain on Anglo-German relations.

The Naval Arms Race

Manpower, geography, and technology were the prime considerations as Germany, France, and Russia planned for war. One of the most sensible ways for Germany to overcome the challenges of geography and technology would have been to foster an alliance with Britain. The British government even approached the German government on several occasions. In 1895, Britain floated the idea of an Anglo-German partition of the Ottoman Empire; in 1898, as the French and Russians were moving close toward formalizing a military alliance, Britain and Germany had preliminary discussions about forming one of their own. Such an alliance would have made sense for a number of reasons. Britain's power at sea and its colonial empire would have complemented Germany's power on land and its dominance of central Europe. The countries had dynamic ties, too. The British royal family was of German descent. Kaiser Wilhelm II's mother was the daughter of Queen Victoria, who was married to a German, Prince Albert.

Yet family ties could only help so much. The kings and queens of Britain had influence in British politics but little real power. By contrast, Kaiser Wil- helm II controlled Germany's army and foreign policy, although, practically
speaking, his superficiality enabled his generals and diplomats to run things on a day-to-day basis. If anything, Wilhelm's personality was an object lesson in the need to saddle monarchs with constitutional limits. One of Wilhelm's personal quirks was that he simultaneously envied and hated Britain. His animosity was personal. His left arm was deformed because of an accident at birth; he blamed his mother's physician, who was British. His mother was a pro-British liberal. Wilhelm rejected his mother by becoming an anti-British conservative. Wilhelm embraced German national romanticism, whose adherents typically believed that, while Germans improved themselves by cultivating the arts and philosophy, the British were a class and materialistic nation of industrialists and merchants.

Wilhelm's antiliberal, anti-British sentiments, coupled with his impulsiveness, kept Britain and Germany apart. During the late 1890s, without properly consulting German diplomats, Wilhelm publicly supported South Africa's Boers, many of whom were resisting Britain's efforts to incorporate their independent republics into a British-dominated South African Confederation. As much as Wilhelm criticized British imperialism, he was like many prominent Germans in that he himself was an imperialist. But by the time that Wilhelm II took power in 1888, there was not much left to acquire. Bismarck had initially been skeptical about controlling overseas territories, but in the early 1880s he persuaded Wilhelm I to acquire several colonies in Africa, including the countries known today as Cameroon, Namibia, Tanzania, and Togo. In the Pacific, Wilhelm I also acquired the northeast part of Papua New Guinea as well as several island groups to the north. Under Wilhelm II, Germany acquired several more islands in the Pacific. In 1898, he acquired a more significant possession: the port of Jilin on the north coast of China, which Germany developed as a naval base. In 1899, Germany averted a naval clash with Britain and the United States over the islands of Samoa, when Wilhelm agreed to a partition.

Disputes over small islands in the Pacific were indicative of a larger problem: a naval arms race between Britain and Germany. Between 1890 and 1914, German naval policies challenged Britain's leadership at sea, thanks in large part to Wilhelm II. He had spent childhood summers with his English relatives at Osborne House, a royal residence on the Isle of Wight, near the Royal Yacht Club at Cowes. Wilhelm became an avid sailor, a hobby that he pursued for the rest of his life. For several years after he became Kaiser, he raced yachts at Cowes, where his membership was sponsored by his uncle, the future King Edward VII. The Royal Yacht Club lay only a few miles away from the Royal Navy's base at Portsmouth. Wilhelm's visits to the ships inspired him to build a great navy for Germany. In 1904, on the occasion of King Edward's visit to the German naval base at Kiel, Wilhelm reminisced with his dinner guests: "When, as a little boy, I was allowed to visit Portsmouth and Plymouth in hand with kind aunts and friendly admirals, I admired the proud English ships in those two superb harbors. Then thermometric was in me the wish to build ships of my own like these someday, and when I was grown up to possess as fine a navy as the English." The German chancellor, Bernhard von Bülow, altered the transcript of the speech for the press. He removed the kaiser's anecdotes, lest the kaiser's juvenile remarks jeopardize the budget for naval construction.

Naval ships had become very costly, thanks to a revolution in construction. In the early part of the nineteenth century, navies relied on wooden sailing ships. Large, triple-decker ships of the line, bristling with ninety cannons, fought the main battles. Faster, lightly armed frigates patrolled the seas and protected merchant vessels. At midcentury, sails were replaced by steam engines; wooden hulls were replaced by steel; and cannons peering through portholes were replaced by gun turrets rotating on the main deck. The battleships of the 1880s and 1890s typically mounted four large guns with a diameter of eleven or twelve inches, two per turret, plus varying numbers of medium and small guns. At the end of the nineteenth century, the British navy dwarfed all other navies, while for the most part its ships were technically superior. Battleships were costly to build, maintain, and operate, yet Wilhelm and his chief admiral, Alfred von Tirpitz, were determined to build a navy that would rival Britain's. In 1898 they persuaded Germany's parliament, the Reichstag, to fund the construction of twelve battleships. In 1900, they obtained a long-term commitment to build nineteen. The German construction program, coupled with the kaiser's support for the Boers, assured that the British would respond in kind. A naval arms race began, shaped by a technological revolution in naval architecture.

As a rule, larger guns fire farther and more accurately than smaller guns. For this reason, around 1900 naval architects began to contemplate eliminating most of the smaller guns from battleships. In a battle, the most decisive shooting would be done by big guns at long distances. In 1902, Britain began work on a new, revolutionary battleship, the Dreadnought. The ship was bigger than most previous battleships, with a new hull design, heavy armor plating, and new engines with turbines that were faster and more reliable than the older battleships' piston engines. Most impressively, the Dreadnought mounted ten twelve-inch cannons on five turrets.

The Dreadnought's trials at sea demonstrated its superiority to the old design. Between 1906 and 1913, the British produced thirty Dreadnought-style
battleships, with increasingly powerful armaments: by 1913, the new battleships were mounting fifteen-inch guns. Britain also produced ten Dreadnought-style battle cruisers, ships that had weapons and engines that were similar to the battleships but which had less armor. Less armor resulted in greater speed at the cost of greater vulnerability.

Germany responded by building its own Dreadnought-style battleships and battle cruisers. This posed a problem: the ships would be too large to pass through the Kiel Canal, which connected the North Sea to the Baltic Sea. The Reichstag funded the widening of the canal as well as the enlargement of previously authorized battleships. In 1908, the Reichstag passed another “Naval Law” that allowed for the construction of three Dreadnought-style battleships each year. All told, from 1906 to 1913 Germany built nineteen Dreadnought-style battleships and seven battle cruisers. Germany was not able to match Britain battleship for battleship, but now the German navy did pose a significant threat to British dominance at sea. Other countries got into the act, too. Austria-Hungary built four; France built seven; Italy built six; Japan built six; Spain built three; Russia built seven; the United States built fourteen. Argentina bought two from the United States; Brazil bought three from Britain.

Britain met the challenge from Germany but the numbers of Dreadnought-style battleships do not tell the whole story. Many navies relied on smaller ships, too, including medium-sized cruisers and smaller destroyers. These could move more quickly than battleships and were better suited to protecting coastlines and trade routes. Smaller destroyers and a new type of ship, the submarine, could lay mines and fire torpedoes. These were weapons that posed a significant threat to all ships, including battleships.

All battleships were not created equal, either. Germany had fewer battleships, but they were better-designed and better-built than their British counterparts. German guns were lighter and made from better-quality steel. They fired shells propelled by better-quality powder that was contained in safer casings. German gun turrets were safer, too. German ships also had better armor than the British ships, as did the ships of Japan and the United States. Recognizing that heavy shells fired from long distances could hit the sides and also plunge onto the decks of ships, German, Japanese, and American designers armored the top decks, while the top decks of British ships remained relatively thin. German machinery and optics were superior, too. Even though many Germans thought that they had lost an expensive arms race against Britain, in fact their fleet was quite formidable. Used in the right ways, it could pose a significant threat to Britain.

The construction of the German navy damaged relations with Britain, a country that would have made a useful ally, given that Kaiser Wilhelm II’s belligerent diplomacy had resulted in an alliance between France and Russia. To the east and west and now out on the North Sea, Germany faced determined enemies. Germany’s main allies, Austria and Italy, were not completely reliable. Germany’s geographic predicament fostered insecurity. Its industrial, military, and naval achievements made it formidable. And its leaders made it dangerous.

The Crisis of 1914

The diplomatic crisis during the summer of 1914 has been the subject of detailed investigations by many scholars. Most agree that the war resulted from unfortunate decision-making on the part of civilian and military leaders who were rushed by the nature of war plans. The war plans, as we have already seen, were created as a way to harness manpower and modern technologies and apply them to the problems of geography and politics. At no point did these plans somehow determine that war would happen in 1914. Even so, awareness of these plans tended to nudge decision-making in an era when there was not an international organisation, such as the United Nations Security Council, where potential conflicts might be delayed and even defused by discussion.

The First World War began in Bosnia, an obscure province in the southeastern corner of Austria-Hungary. The province, home to Bosnian Muslims, Catholic Croats, and Orthodox Serbs, was acquired by Austria from the Ottoman Empire in 1878 and formally annexed in 1908. Nationalist Serbs resented the annexation, hoping to unite Bosnia with the neighboring, independent country called Serbia. On June 28, 1914, the heir to the throne of Austria-Hungary, Franz Ferdinand, and his wife, Sophie, visited the capital of Bosnia, Sarajevo. As Franz Ferdinand and Sophie were riding in their car, a nationalist Serb, Gavrilo Princip, shot them to death. Princip had connections to the Serbian intelligence agency, as the Austrian investigators learned soon after.

Austrians perceived that their empire’s honor was at stake. On July 23, the Austrian government sent an ultimatum to Serbia, demanding that the Serbian government cease anti-Austrian activities. Austria also demanded that Serbia try the Serbs implicated in the plot against Franz Ferdinand, with Austrian officials supervising the proceedings. The Austrians expected a decision in forty-eight hours. These sorts of demands were thought likely to
cause a war, but just a war between Austria and Serbia. The Serbs had some public support in Russia but the Russian government did not have a reason to fear for its security if Austria attacked Serbia. The Austrian leadership might have confined the war to Serbia, had they not been concerned that the European alliance system might lead to war with Russia. Austria asked Germany for support, which it got: the Kaiser promised Austria that it would have "Germany's full support." However, he did not believe that Russia and France would be drawn into the conflict; otherwise he probably would not have taken a vacation on the royal yacht immediately after giving Austria the "blank check."

Facing these demands from the confident Austrians, the Serbs might have capitulated or they might have given in to most of the demands and negotiated Austrian supervision of their courts. Instead, the Serbian ambassador to Russia sensed that the war and his advisers were becoming supportive. He wrote to his home government in the Serb capital, Belgrade: "The Russian Minister of Foreign Affairs [Sergei Dmitrievich Sazonov] sharply criticized the ultimatum of Austria-Hungary. Sazonov told me that the ultimatum contains demands that no state could accept. He said we could count on Russian help, but he did not explain what shape or form that help would take. Only the war could decide, and they have to cooperate with France as well." On July 25, just before Austria's forty-eight hour deadline was about to expire, the Russian government announced that it was taking preliminary steps to mobilize its armed forces,initiating what it called the "Period Preparatory to War." Russian soldiers were put on alert, while the reservists in some western districts were told to report for duty. This was not a full mobilization, but it emboldened the Serbs, who rejected the Austrian demands.

It appeared that Serbia and Austria-Hungary would go to war and that Russia might go to war against Austria-Hungary on the side of Serbia. In the next several days, Russia took steps to make ready about half of its army. This half-readiness had to be improvised—plans only existed for full mobilization against both Austria-Hungary and Germany at the same time. Troops were not made ready near the border with Germany, only near the border with Austria-Hungary.

Partial mobilization did not satisfy the generals in Austria-Hungary, Russia, or Germany, all of whom wanted the strongest possible defense against external aggressors. Behind the scenes, generals pressed politicians for full mobilization, even as diplomats from many countries scrambled to initiate peace talks. Some of the strongest initiatives for peace came from Germany. Kaiser Wilhelm exchanged telegrams with Tsar Nicholas, while the German chancellor, Theobald von Bethmann-Hollweg, pressed his Austrian counterpart, Count Leopold Berchtold, to negotiate with Russia. Russia's mobilization was only partial but it did stir the most anxiety on the European blocs: Austrian-Hungary, Austrian generals sought to respond to fully mobilizing their own smaller army.

The problems of diplomacy and war-planning were inextricably linked in Germany, too. The lead general, Moltke, worried that if Russia had some troops ready on the Austrian border they might throw off the complicated timing of Schlieffen's plan. As it was, the German generals feared that they might not be able to defeat France quickly enough to send troops back east and fight the Russians who would be advancing on Berlin. If the Russians got a head start of even one or two days, Germany could lose the war. On July 30, Moltke went over the head of the Kaiser and communicated directly with Austria's chief general, Baron Conrad von Hotzenhof, telling him that if Austria would order full mobilization, Germany would surely follow. This had not yet been decided by the Kaiser, actually, but it persuaded the Austrian leaders to order a full mobilization on July 31. Simultaneously, Russia's chief ministers and generals, together with the French ambassador, Maurice Paleologue, met with the reluctant Tsar Nicholas to persuade him to order general mobilization. They made the argument that partial mobilization was proving impracticable from a military standpoint. They hoped for a general mobilization, even though they realized that Germany would interpret such an act as a provocation. Without an immediate general mobilization, the generals feared they might suffer greater losses in a war with Germany, especially if Germany sided actively with Austria-Hungary in a war against Serbia.

By this point, both sides had reached an impasse. On July 29, Nicholas decided to issue the order, but hesitated because of an exchange of telegrams with Kaiser Wilhelm. Wilhelm pressed Nicholas to refrain from intervening in Austrian actions against Serbia. On July 30, Nicholas's advisers persuaded him that any further hesitations would be dangerous to Russian forces. The next day, July 31, Nicholas ordered all Russian reservists to report for duty. At this point Nicholas sensed that, for diplomatic and technical reasons, mobilization could not be stopped. He sent a telegram to Kaiser Wilhelm stating that "it is technically impossible to stop our military preparations which were obligatory owing to Austria's mobilization," even though he also believed that "we are far from wishing war."

Learning of Russian mobilization, the German government issued an ultimatum to Russia that proved to be the final straw: in twelve hours, Germany would begin to mobilize unless Russia stopped. A further note was sent from Berlin to Paris. Since France and Russia were bound to fight together against
Germany in the event of German mobilisation, then war between Germany and France was bound to happen if Russia did not stop its mobilisation. Germany gave France eighteen hours to renounce its obligations to Russia and declare its neutrality. France and Russia ignored Germany's demands. On August 1, Germany declared war on Russia. On August 2, Germany gave Belgium a day to grant permission for German troops to cross its territory. The Belgians did not agree and German troops began to enter Belgium. That day, August 3, Germany declared war on France. France did not have a formal alliance with Britain, just a cooperative relationship. For several years, the British and French military authorities had been involved in joint planning. In spite of these tentative plans, during the crisis of July 1914 the British cabinet had members who hesitated to enter the war on the side of France. The prospect of a French defeat, coupled with the prospect of German domination of Western Europe, did not sit well with British economic and political interests. Even so, some politicians still doubted whether a German victory over France would provide Britain a pretext for war. The German invasion of Belgium provided that pretext: Britain had signed a treaty guaranteeing Belgium's territory, and, more importantly, German occupation of Belgian ports threatened the east coast of England. On August 4, the British government gave Germany a day to cease operations against Belgium, or else Britain would declare war. Germany ignored the demands and Britain carried out its threat. The wealthiest and most powerful European countries were now at war. Out of all the great European powers, only Italy held back—for a time. Europe's military and political leaders all worried that, if they delayed mobilisation, other nations might get the jump on them. As Kaiser Wilhelm said in a telegram to Tsar Nicholas on July 31, "I now receive authentic news of serious preparations for war on my eastern frontier. Responsibility for the safety of my Empire forces preventive measures of defense upon me." All major European countries had complex plans for rapid mobilisation, while Germany and France were particularly committed to complex offensive plans. The timing of the plans pushed them toward quick mobilisation. As John Keegan and other historians have shown, throughout late July and early August of 1914, leaders could have chosen to negotiate rather than to mobilise. And even after mobilisation, the war plans could have been thrown away. For all his bluster, the kaiser considered doing just this. On August 1, he calculated that, if Germany did not attack France through Belgium, Britain would not enter the war, and that Germany could order most of its troops east to engage the Russians. The kaiser was probably right, but Moltke persuaded him that Schlieffen's plan was Germany's best hope for victory and that reversing the plan would be too complicated. Hesitation to implement war plans would result in negative consequences. As the French General Joffre explained to Adolphe Meusy, his minister of war:

'It is absolutely necessary for the government to understand this, starting with this evening, any delay of twenty-four hours in calling up our reserves and issuing orders prescribing covering operations, will have as its result the withdrawal of our concentration points by from fifteen to twenty-five kilometers for each day of delay; in other words, the abandonment of just that much of our territory. The Commander-in-Chief must decline to accept this responsibility.'

Political and military leaders gambled that they could win in spite of what they knew about the realities of geography and technology. Previous wars had demonstrated the effectiveness of muzzle-loading rifles, while giving a foretaste of newer weapons that were still in early stages of development, such as incendiary warships, single-shot breech-loading rifles, recoilless artillery, and hand-cranked machine guns. These wars in the mid- and late-nineteenth century also illustrated the costs of warfare in the industrial age. It was common knowledge among Europeans that the new weapons gave advantages to defenders. Defenders had such an advantage that it was thought necessary for attackers to have as many as three to five times as many soldiers as defenders for an attack to have a chance at success. At no point did the Entente or the Central Powers have an advantage of three to one. The new weapons should have caused Europeans to hesitate before attacking each other. Such are the judgments made possible by hindsight.

Starting a war was made risky by the realities of defensive technologies. War was made more likely by geographical fantasies. The Schlieffen Plan assumed that the way to get around numerical parity between French and German forces was to attack through Belgium. Yet German planners downplayed a major problem: it was unlikely that sufficient forces could be pushed through the narrow Belgian and French frontier in time to outmaneuver enemy armies. Enough territory would be gained to ensure a conflict. Defensive technologies ensured that it would be difficult for the Belgians, French, and their allies to get it back.

The German leaders were not the only ones to engage in geographical fantasies. The leadership of every country in the Entente or the Central Powers aimed to gain territories, either in Europe or overseas. Overseas, military and naval technologies helped to make these fantasies possible. They remained fantasies, however, because territories were obtained at a time when anticolonial nationalism was building in many places. At the end of the war, newly obtained colonies would be placed under international supervision—under
the League of Nations—and almost all of them would become independent
nations within fifty years. It would prove difficult for nations weakened by
the world wars to hang on to colonial territories.

All of this lay in the future, and, of course, it was impossible to predict the
future. This was true except in the case of Grigori Rasputin, the disreputable
faith-healer who had become close to Russia’s royal family. On the eve of
war, and suffering from stab wounds received in an attempted assassination,
Rasputin wrote to Tsar Nicholas: “Dear friend, I will say a menacing cloud
is over Russia lots of sorrow and grief it is dark and there is no lightening to
be seen. A sea of tears immeasurable and as to blood? What can I say? There
are no words the horror of it is indescribable.” Rasputin used natural meta-
phors: a menacing cloud, a sea of tears, to describe the indescribable. Europe
was starting a war in which natural metaphors would be used extensively
to convey suffering and misery. In 1914, Europe’s leaders were aware of the
perils of launching a massive war. They all gambled against the odds. They
all lost.

CHAPTER THREE

Optimism, 1914–1916

In the first week of August, millions of regular soldiers and reservists marched
to train stations. Enthusiasm for the war appeared to be widespread, at least
in public. The soldiers boarded trains and headed for the front lines. Many
soldiers were optimistic, too. In hindsight, it is hard to credit their enthusi-
asm. Robert Peattie, who as a French schoolboy imagined reclaiming Alsace
and Lorraine, was now a soldier headed for the front in early August. He
remembered that, when his train left the station, “Everybody was shouting
and wanted to go to the Front. The cars, the railway wagons loaded with
soldiers were full of tricolor flags and inscriptions: ‘À toi, Berlin, à Berlin.’
We wanted to go to Berlin immediately, with bayonets, swords, and lances,
running after the Germans.”

Such fantasies of geographic mobility were indeed from an earlier technol-
ogy era. In 1914, the bayonets, swords, and lances would be met by
machine guns, breech-loading rifles, and quick-firing artillery. When move-
ment occurred on the battlefields of the First World War, it often came with
a high price.

For the most part the soldiers were cheered by crowds of people, but many
intellectuals expressed their reservations. The Russian poet Anna Akhma-
tova conveyed her dread by using vivid environmental imagery in a poem,
“July 1914”:

All month a smell of burning, of dry peat
smouldering in the bogs.
Even the birds have stopped singing, the aspen does not tremble. The god of wrath glares in the sky, the fields have been parched since Easter. A one-legged pilgrim stood in the yard with his mouth full of prophecies: "Beware of terrible times... the earth opening for a crowd of corpses. Expect famine, earthquakes, plagues, and heavens darkened by eclipses."

Akhmatova's dread was not shared by Pousis and his comrades. Inexperienced soldiers may have deluded themselves into thinking that their prowess would bring about a quick victory. By contrast, the British, French, and German soldiers who had fought in the colonies; the Austrian soldiers who had fought in the Balkans; and the Russian soldiers who had fought against Japan must have known about the damage that people could inflict upon each other with the new weapons. The generals were surely aware of the effects of the new weaponry, yet persisted in advocating offensive warfare.

The battlefields of the First World War may therefore be understood by deploying a concept from environmental history, sacrifice zones. A sacrifice zone is an area where people have been willing to sacrifice local natural resources in favor of some greater good, such as industrial production. For example, throughout much of the twentieth century the waterway ecologies near Houston, Texas, were thought worth sacrificing to the cause of petroleum refining and shipping. The same is true of the battlefields of the First World War. They became zones in which leaders deliberately sacrificed men, animals, trees, and land for the greater good. The side that could sacrifice the most and still remain intact would win the war. The poet Akhmatova anticipated the scope and the symbolism of the sacrifice. She concluded her poem, "July 1914," with the following lines:

Low, low hangs the empty sky, tender is the voice of the supplicant.
"They wound Thy most holy body, They are casting lots for Thy garments."

The War in Western Europe, 1914–1915
On August 4, 1914, German soldiers poured across the borders of Belgium and Luxembourg, headed for France. The northernmost soldiers, in the First Army under General Alexander von Kluck, faced a two hundred-mile march in hard, hobnail boots all the way to Paris, weighed down with sixty-pound packs. The German plan began to unravel almost immediately, thanks to the early resistance of Belgium's small army. Between 1888 and 1892, the Belgians had invested in fort-building along their rivers, in order to impede invading armies. In 1914, the Belgians had the sturdies and most heavily armed forts in Europe. For the Germans, the shortest path through Belgium and into France was blocked by the twelve forts surrounding the city of Liège, located at the site of a steep gorge on the Meuse River. On August 5, a German corps attacked Liège, only to be repulsed. Small German units were able to advance in between the forts to capture the city, but the forts still interfered with the German army's need to move all its forces forward to France quickly. The Germans tried new weapons against the forts. The first was an unfortunately new technology, the zepplin, a long, cigar-shaped blimp that dropped bombs. When serial bombs failed to breach the forts, the Germans moved forward enormous new siege cannons, the Krupp 420mm howitzer and the Skoda 305mm howitzer, whose heavy shells damaged the forts and persuaded the terrified defenders to surrender.

By the time that Liège's last three forts were destroyed on August 16, the Belgian government was withdrawing from Brussels, in central Belgium, to Antwerp on the North Sea. King Albert was leading his poorly equipped army in a series of rearguard actions, retreating across the country but standing to fight when good opportunities presented themselves. Belgian resistance slowed the German army and infuriated German soldiers. They not only blamed Belgian soldiers for fighting back and for destroying bridges and railroads; they also blamed Belgian civilians, accusing many of sniping when in fact few Belgian civilians were ever armed. German soldiers took Belgian civilians hostage and shot hundreds of them. Several Belgian towns were looted and burned to the ground. In the worst incident, German soldiers destroyed the small university city of Louvain, famed for its architecture and its library. The fallout was terrible, not only for the Belgians. Word of the destruction spread throughout Europe. In Germany, where many were justifiably proud of their country's contributions to the humanities and the sciences, it was hard to condone acts of barbarism. The Allied countries were quick to publicize the atrocities in posters and stories. Such propaganda became highly significant as the war turned into a long test of wills between the Allies and the Entente.

The British and French responded to the German attack by moving aggressively themselves. The British shipped four infantry divisions and one cavalry division to France beginning on August 9, and laid them in place on the far western flank of the French army, at Mons, just across the Belgian
border, by August 20. To the south, the French set in motion their own war plan, Plan XVII, an attack across France's border with Germany. On August 7, three French divisions crossed into Alsace, taken by the Germans from the French in 1870. Three French divisions captured the city of Mulhouse, but by August 9 a larger German force pushed them back.

The next week, two French armies advanced into Lorraine. At first, the French encountered little German resistance. German troops fought a rearguard action, luring the French to move forward toward an equivalent German force. On August 20, a massive German counterattack drove the French out of Lorraine again. Sensing that German forces were strong in Lorraine—and that they were also strong in Belgium—France's lead general, Joffre, ordered an attack up the middle, through the Ardennes Forest, which he presumed must have been defended lightly. It wasn't. France's eight corps marched through the hilly, wooded Ardennes only to encounter eight German corps moving directly toward them. The armies clashed on August 22, with both sides experiencing thousands of casualties. One attack was particularly telling. Some of France's most experienced troops, the Third Colonial Division, attacked a fortified German position repeatedly by charging it with bayonets. Out of the fifteen thousand troops who lowered their bayonets against the German cannons, rifles, and machine guns, eleven thousand were killed or seriously wounded. The old way of fighting was proving obsolete in the face of the new technologies.

The French attack along the border with Germany was then completely stalled. To the north, in Belgium and the north of France, there was still plenty of movement. It still seemed possible that the German army could accomplish the goals set forth in the Schlieffen Plan: to capture Paris in forty-two days. On August 21—Day Seventeen of the invasion—the German Second Army crossed the Sambre River near Charleroi, close to the Belgian border with France. They were met by the French Fifth Army, whose units counterattacked across open fields, where they suffered terrible casualties at the hands of German machine-guns. Battles raged until August 23, at which point French forces began to withdraw to the south.

On August 23, the fourteenth divisions of the German First Army—the great right wheel of the Schlieffen Plan—attacked the five divisions of the British Expeditionary Force at Mons, just north of the Sambre River. The British demonstrated that, even at a numerical disadvantage of 1:3, a defending force could inflict terrible casualties on attackers. Many of the British soldiers had experience in the Boer War, where they learned lessons (often the hard way) in how to attack and defend fortified positions. During the Boer War, British marksmanship had proved deficient; now improvements in training and in the design of rifles proved lethal. Against the massive German assault at Mons, every British unit held its positions. British casualties were heavy, at 1,600, but the Germans lost five thousand. Even so, the French Fifth Army, defeated along the Sambre River, had begun to retreat southward. The retreat forced the British to do the same. The two armies fought as they retreated. On August 26, three British divisions turned to fight at Le Cateau, digging shallow trenches and inflicting heavy casualties on the Germans before being forced to retreat again. On August 29, the French Fifth Army turned to fight at Quiévrain. Despite some successes the French retreated again. Technically the French and British were losing—they were, after all, retreating. But this retreat was not a disorderly flight. For the most part it was an ordered, fighting retreat that delayed the advance of German forces.

Every delay of the Germans on the road to Paris gave the Russians more time on the road to Berlin. Schlieffen's hopes for German forces in the east had only been modest. He wanted the German army to delay the Russian army, buying enough time for Germany to conquer France and then ship enough soldiers back east to defeat the Russians. As it turned out, in August 1914 two Russian armies advanced toward Berlin more quickly than expected but were more than delayed by the German army—they were soundly defeated in several huge battles that took place in East Prussia. (These battles are described below.) German forces succeeded in stopping the advance of the Russian army.

At the end of August, the German army abandoned Schlieffen's plan. In the east, the plan had overestimated the Russian army, which no longer posed such an immediate threat to Berlin. In the west, the plan had underestimated Belgian and French resistance and had failed to take into account the degree to which the intervention of the British would influence the outcome. The British Expeditionary Force (BEF) retreated to the area just east of Paris; the French Fifth Army retreated south, too, just to the east of the British; the French Ninth Army held positions to the east of the Fifth Army; while the French Sixth Army guarded Paris itself. By September 6, the French Sixth, the BEF, the French Fifth, and the French Ninth attacked in a line from Paris to the east, between the Marne River to the north and the Seine River to the south.

As German forces moved south in pursuit, the German military leadership under Moltke decided that, instead of following the Schlieffen Plan and wheeling around Paris from the west, it was best to strike east against the retreating French and British. The British were thought to have been practically annihilated during the retreat, which turned out not to be true. Nonetheless, the German generals decided that now was the time to destroy
the French Fifth Army. Kluck's First Army moved toward the BEF and the nearby units of the French Fifth Army; Karl von Bölow's Second Army moved to the east, toward the main body of the French Fifth Army. As the two German armies moved south, the French Sixth Army risked leaving Paris and attacked the eastern side of the German First Army. From September 6 to 9, the Battle of the Marne raged, with French units sustaining upwards of eighty thousand casualties. To make up the shortfall in troops, French generals rushed more soldiers to the battlefield in taxis. As the battle continued, it became clear to British and French commanders that a gap was opening between the two German armies. The BEF and the French Fifth Army pressed into the gap and began to cut off the two German armies, raising the prospect that they both might be encircled. Feuding that the British and French might destroy his forces, Moltke ordered the two German armies to retreat back north. British and French forces followed in pursuit.

In Belgium and France the German army had failed to meet its objectives. Germany was now embroiled in a two-front war against France in the west and Russia in the east. This was the type of war that decades of German diplomatic efforts had tried to avoid. The hostility of the British tightened the vise. The British would not only support the French in the west but they would also be able to shut down Germany's access to the North Sea. In hindsight, it seems that in September 1914 Germany faced an impossible situation. A swift victory by conquest now appeared to have been out of the question. The best outcome for Germany would be a negotiated settlement, in which case continuing to fight hard would be rewarded.

To ensure a continued, hard fight, the kaiser changed commanders. Moltke appeared to be suffering a nervous breakdown and was replaced by a court favorite, General Erich von Falkenhayn, who took steps to continue the German army's aggressive campaign. As the First and Second Armies retreated north, they stopped along the River Aisne, where they fortified high ground and repulsed British and French attacks on September 12 and 13. While German fortifications along the Aisne grew stronger, Falkenhayn ordered another German army, the Fourth, to move through Belgium toward the North Sea ports of Antwerp, still controlled by the Belgians, and the French ports of Dunkirk, Calais, and Boulogne. Leaving the French Fifth and Sixth Armies to hold the line along the Aisne, the Second and Tenth Armies, along with the BEF, raced north to cut off the German advance on the ports, clashing with units of the German Fourth Army on the way. In the meantime, Britain sent an extra division, plus marines and naval units, to support the Belgians at Antwerp. German forces threatened to capture Antwerp just as they had captured every other Belgian city, so British and Belgian forces retreated south, to the town of Nieuport, where they linked up with British and French units that were moving northward.

The British, French, and Belgians now faced the Germans in the northern, coastal region of Belgium known as Flanders. The Germans had moved their troops to the region in a final effort to outflank the Allies. The German decision proved fateful for reasons that are associated with the waterlogged Flanders environment. The region is low-lying, with much of it only a few meters above the level of the North Sea. The water table lies only one or two meters below the surface and frequently the area is drenched by rain- storms. The three rivers that drain the area—the Yser, Lys, and Scarpe—are all prone to flooding. And to make the region even soggier, the soil consists mainly of a layer of sand over a layer of clay. For centuries, local residents dig canals and ditches and constructed dykes and polders in order to reclaim the land from the water. In wartime, these constructions were liable to be damaged, making it difficult for soldiers to move and to dig.

Flanders presented soldiers with many environmental challenges, but, in one instance, it presented an environmental opportunity. In order to protect Nieuport, the only remaining port of independent Belgium, King Albert ordered the locks of the heavily channeled Yser River opened, thereby flooding the nearby countryside. This act of environmental warfare ensured that he preserved what was left of his country by submerging much of it. At the moment, though, this gesture prevented German forces from moving southwest toward Dunkirk and Calais.

During October 1914, battles raged around the historic textile-manufacturing town of Ypres, as the armies continued their efforts to move around each other. The Germans, who had moved into the lowlands first, occupied much of the higher ground, which was not only better to defend, but which did not lay so close to the water table. From the high ground around Ypres, the Germans launched a series of offensives against the British. Once again, the generals ordered their troops to attack in massed formations across open fields, where they were cut down by rifles, machine guns, and artillery. It is thought that fifty thousand German troops died near Ypres in October and November of 1914, compared to twenty-five thousand British troops. No army succeeded in overpowering or outflanking its opponents in Flanders but the British and French did manage to push a bulge, or "salient," into the German lines east of Ypres.

The armies now faced each other in a line 475 miles long that extended from the North Sea coast of Flanders to the French border with Switzerland. The terrain varied, from flat, waterlogged Flanders to the hills and woodlands of eastern France. All along that line the armies dug trenches because
it was proving less costly to defend than it was to attack. The remnant of the Belgian army—six divisions reduced to forty thousand soldiers—held the northernmost corner. The British army held the next thirty-five miles of front lines, with the remnant of the BEF being supplemented by the Royal Naval Division, an improvised unit of sailors and marines who had survived the siege of Antwerp. From that point south, the line was held by French troops.

By the time that the winter weather was setting in, the Allies began to draw on colonial manpower, a key way in which the war was becoming global. British forces were supplemented by two divisions of infantry and two divisions of cavalry from India. The Indian army's infantry, the Meerut and Lahore Divisions, were each composed of three battalions of Indian soldiers and one battalion of British soldiers. British and Indian troops were led by British officers. The officers and men were veterans of fighting in Burma and along India's Northwest Frontier but they were unprepared for the battlefields of Belgium and France, where they saw extensive service in 1914 and 1915. The Indian army had fewer machine guns than regular British units and its troops completely lacked howitzers, mortars, and grenades, which were essential weapons in trench warfare. As a result they suffered high rates of casualties at the front, while coping with unaccustomed cold weather and low morale. The morale picture was complicated by religion. Some Muslim soldiers questioned their loyalty to a government that was now at war with the Ottoman Empire. Other factors also hurt the morale of the Indian army: units were recruited heavily from the Punjab in India's northwest, where a serious outbreak of plague in 1915 caused soldiers to worry about their families. Indian units had higher rates of self-inflicted wounds than British units, although Indian units were also involved in numerous acts of bravery under fire. British generals blamed the weather for morale problems in Indian units and at the end of 1915 transferred them to fight against the Ottomans in Iraq.

All the armies suffered terrible losses in manpower and skill during the battles of 1914. The French army of two million men experienced 510,000 casualties, including soldiers killed, wounded, missing, and captured. Of those, 306,000 were killed. By comparison, the number of Belgian and British soldiers killed—thirty thousand for each country—seems significantly less. Even so, Belgium is a small country with a small population and the losses were quite significant. As for the British, the killed soldiers were almost all regular soldiers from Britain's small army, many of whom were veterans of colonial warfare. Their loss would be felt keenly in the coming years, when the British army came to rely heavily on recruits. On the other side of
the fighting in France and Belgium, the German army lost 241,000 killed, a smaller number than the Allies but still quite substantial.

In hindsight such losses have seemed senseless to many historians and readers. It must be remembered that at the time there remained widespread popular support for the war. People in each country aided the war effort in the belief that their country was fighting on the side of righteousness. Such beliefs continued even as the war in Western Europe became bogged down in trench warfare.

There were certainly examples of civilians and soldiers who resisted the war. The most famous instance occurred on Christmas Day, 1914, when many British and German soldiers put down their weapons and exchanged gifts. Such grand gestures of humanity in the face of inhumanity were uncommon. More common were the smaller gestures. Soldiers on both sides often reached certain understandings. For example, at supper time the artillery on both sides often took a break from shelling so that everybody could enjoy a meal. On the whole, though, as the war bogged down at the end of 1914, both sides prosecuted the war with vigor. This would continue through 1915, another year of great slaughter that saw officers on both sides experimenting with new approaches to trench warfare.

The main hypothesis of the British and French generals was that a massive attack eastward on one point of the German trenches would achieve a breakthrough. Once the German line was broken, cavalry and infantry would pour through the hole and envelop the Germans who remained to the north or south. (Even if this did not work, it was hoped that, at least if the British and French continued to attack, the Germans could not send many soldiers to the east, where they would contribute to the effort against Russia.) The Allied hypothesis made a number of suppositions that were incorrect. The main mistake was to believe that the Germans—with some of the world's best officers and engineers—would not respond cleverly to the challenges of trench warfare generally or to the simple tactic of massed assault in particular. Another mistake was to assume that, in the confusion of battle, Allied soldiers who did manage to break through would be able to communicate effectively with supporting units in order to safely push ahead.

Allied strategies found their match in German strategies. After the failure of the Schlieffen Plan, German leaders were content to wage a defensive war. This made sense for reasons that had to do with battlefield tactics as well as national strategy. In 1915, the German government hoped to push the Russians and the French to negotiate separate peace treaties. German proposals were sent through neutral countries. The proposals would have ended the war in exchange for major French and Russian territorial concessions. Nei-
Wallowed like trodden sand-bags loosely filled;
And naked soiled stockings, mats of hair,
Bolted, clotted heads slept in the plastering slime.
And then the rain began,—the jolly old rain?".

In spite of these depressing environmental conditions, some soldiers did attempt to add natural beauty to their surroundings. Lothar Dietz, a young philosophy student serving in the German army, wrote home to tell his family that he had been doing some trench gardening. Raising several local gardens, Dietz recounted how "we pitched thodendrons, box, snowdrops and primroses and made quite nice little flower-beds. We have cleaned out the little brook which flows through the valley, and some clever comrades have built little dams and constructed pretty little water-mills. . . . We have planted bushes of willow and hazel with pretty oskkins on them and little fires with their roots, so that a melancholy desert is transformed into an idyllic grove." 70 Few trenches were designed quite in this way, but the Germans did earn a reputation for having the best-constructed trenches of the First World War.

It proved highly difficult for the British and French to rise up out of their trenches and assault German positions, yet there were several battles in 1915 in which they nearly achieved a breakthrough. In March 1915 a British attack on the German trenches at Neuve Chapelle almost worked. The British generals depended heavily on manpower from the two divisions of the Indian army, who made up half of the assaulting troops. The generals also developed a new tactic. Earlier assaults began with shelling the German trenches. After a period of time, the shelling stopped and the British troops charged across open space toward the Germans. The trenches gave enough protection that significant numbers of Germans survived, rose to the top of the trenches, and began firing. The new British tactic at Neuve Chapelle began with a shelling, too, but, when the British troops emerged to run forward, British artillery continued to fire, shifting their targets to the German rear in order to interrupt the flow of any reserves. To ensure accuracy, artillery fire was directed by observers flying in eighty-five aircraft. The bombardment was massive, too. In thirty-five minutes, more shells were fired than in the entire Anglo-Boer War. And the sound of the shelling remained continuous, causing German soldiers to hesitate before rising up to defend themselves.

Thanks to the planned coordination of imperial manpower together with artillery and aircraft, on the morning of March 10, 1915, the British and Indian soldiers surprised and overran the German trench at Neuve Chapelle, punching a hole in the German lines that was four kilometers long and one kilometer deep. Conditions on the battlefield were so confusing, though, and communications with the rear were so poor, that the British generals hesitated to follow up on the breakthrough lest their troops become trapped. Overnight the Germans were able to rush enough reserve soldiers to Neuve Chapelle to seal the breach. The anticipated breakthrough did not come.

Looking back on Neuve Chapelle, British generals concluded that they would have won if they had fired even more shells and used even more troops; massive assaults against trenches might still succeed if only enough artillery and infantry were put in place. Subsequent events proved them wrong, mainly because of the German response to Neuve Chapelle. The German generals studied the battle and concluded that one big, long trench packed with soldiers was indeed vulnerable to a breakthrough. To prevent breakthroughs, a second line of trenches was constructed. It was manned by plenry of troops and heavily fortified. The front line now received fewer troops. Their task was to remain alert at all times and to delay any attempted enemy breakthrough. Meanwhile, troops and artillery could be concentrated at the right points of the second line. Manpower, weapons, and terrain could be used flexibly, making a complete breakthrough unlikely.

The Germans were content to fight a defensive war on the Western Front in 1915, at least in part because in that year they were concentrating on knocking Russia out of the war. The main exception to their Western Front defensive strategy was their major assault on Ypres in April and May of 1915. At Ypres the British trench lines bulged into the German trench lines, creating a curved salient that, on both sides, took more soldiers to defend than a straight line. The purpose of the German assault was not so much to break through as it was to create a better defensive position, so it might still be said that the German attack was in keeping with their overall defensive strategy. They gambled that pushing back the Ypres salient would save more lives in the long run than would be lost in the battle, even though the British and French had fortified the salient heavily. They even had a well-built second line of trenches, of the sort that the German army had started to construct behind its own lines after Neuve Chapelle. The German army had another motive, too: they hoped that an attack on the British and French would hide the fact that they were transferring troops east to fight the Russians.

At Neuve Chapelle, the British attempted to surprise and confuse their opponents by the coordinated use of artillery, aircraft, and colonial troops. At the Second Battle of Ypres, as it came to be called, the attacking Germans surprised the French and British by unveiling a new weapon, poison gas. The French and Germans had already used small amounts of tear gas on each other on two occasions, in spite of the fact that the use of gas was outlawed by the Hague Convention, signed by all the powers in 1899. On April 22,
1915, at Ypres the Germans released chlorine gas from five thousand canisters. The gas drifted in an oddly colored mist toward trenches on the north side of the salient that were defended by two divisions of French soldiers, many of whom were from Algeria (the colonies were providing troops to the French army, too). The Algerian and French soldiers, not knowing what to do in the case of a gas attack, stood on guard at the top of their trenches. The chlorine gas inflamed their eyes and lungs, causing victims to drown in their own mucus. Hundreds died within minutes; thousands fled back from the trenches, opening a gap of eight kilometers in the French line. Four German divisions advanced, but, just like the British troops who had moved forward at Neuve Chapelle, they were unable to coordinate their assault with reserve troops and did not achieve a complete breakthrough.

The Second Battle of Ypres turned into a dicing match that resembled Neuve Chapelle in many ways. The British Second Army, including a brigade of Canadians, counterattacked on April 22. For several days, the battle raged. Four more German divisions attacked along the central and southern portions of the salient. The German generals ordered another gas attack, this time against the British and Canadians, on April 24. Soldiers began to cope with the gas by pouring water or urine over handkerchiefs and then placing the wet cloths over their mouths—soldiers breathing through these rudimentary masks survived because chlorine is soluble in water. The battle continued until the end of May, by which point the British and French had withdrawn from the outer ring of the salient to positions five or six kilometers to the rear. The Germans had succeeded in reducing the size of the salient but they did not eliminate it. They also failed to take advantage of the major breakthrough achieved by the surprising use of gas.

Soldiers and civilians in Britain and France condemned the new technology as barbarous and rushed to design and manufacture gas masks. The use of gas seemed, at first, to be a propaganda victory for the Allies but very soon after Second Ypres the Allied armies formed units of chemical engineers and assigned them the task of developing their own poison gases. Gas attacks became a feature on the Western Front for the next three years, even though many believed that gas attacks were an inhumane and unethical method of killing. The most famous description of the new technology came from a young British officer, Wilfred Owen, serving on the Western Front later in the war. His poem about gas, "Dulce et Decorum Est," uses vivid description and satirically irony to condemn the war.

DULCE ET DECORUM EST

The dreadful new gas technologies were used by the Allies for the first time in their massive September attacks on German positions in Artois and Champagne. The attacks had been planned in July, at an Allied conference in Chantilly. The British opposed an immediate offensive, believing that they would not be producing a sufficient amount of shells until 1916. By contrast, the French generals pressed hard for an offensive. From a French perspective, the sooner the Germans were beaten the better. The Russian and Serbian governments—who were represented at the conference—registered their concern that any less pressure on the Western Front would result in more German troops on the Eastern Front. The British government gave in to pressure, hoping that the shell shortage could be made up by the use of gas. It proved hardly a match for the elaborate defenses that the Germans were constructing in order to maximize their lesser manpower and their defensive weapons. During the summer of 1915, German soldiers and laborers dug a second line of trenches, positioning them well on higher ground and providing for superior fields of fire. The frontline trenches were shored up, too, while machine-gun emplacements were dug in between. German artillery drilled on the best ways to stop an Allied assault at various points along the double line of trenches.

The Allies still thought that they might be able to achieve a breakthrough. On September 25, 1915, the French Second and Fourth Armies attacked the German Third Army's trenches along a twelve-kilometer front in Champagne. At the same time, the British First Army and the French Tenth Army attacked the German Sixth Army along an eighteen-kilometer front near Loos and Vimy in Artois. The attacks on Loos and Champagne demonstrated
the difficulties that forces faced when trying to seize heavily defended trenches that were surrounded by barbed wire. One British soldier, Charles Lippett, recalled that "as we approached this wire I could see the bodies of men hanging on it, obviously dead or badly wounded, and there were no gaps in it at all. Our artillery had not cut the wire, even firing 18-pounder shells at it." At Loos the British also unleashed canisters of chlorine gas, which blew back into their own lines when the wind shifted directions. The new weapon proved difficult to control, inspiring engineers in the following months to design ways of dispersing gas in artillery shells.

The Allied assaults in Champagne and Artois, which were much larger than the assault on Neuve Chapelle, resulted in weeks of bloody fighting and shelling. The French lost a staggering two hundred thousand casualties; the British and Germans lost around sixty thousand each. Very little ground was won or lost. The commander of the British Expeditionary Force, Sir John French, was relieved of command, to be replaced by Sir Douglas Haig. The French commanders began to reconsider the wisdom of massive assaults, while they were frustrated by German skill at holding the French soil that they had taken in 1914. At the end of 1915, the Allies had made little headway on the Western Front, while on the Eastern Front Germany was meeting with success, not only in defending German territory, but in taking territory from the Russians.

The War in Eastern and Southern Europe, 1914–1915

For the Russian army, the road to Berlin lay through East Prussia, the easternmost German province that is today the northern part of Poland. East Prussia was defended by the German Eighth Army, whose 150,000 soldiers were commanded by Maximilian von Prittwitz. His forces were outnumbered by the two armies that Russia sent. Russia's First Army, commanded by Pavel von Rennenkampf, had 200,000 soldiers. They invaded East Prussia from the north, Russia's Second Army, commanded by Aleksandr Samsonov, had 150,000 soldiers. They invaded East Prussia from the south. Their numerical superiority would seem to have guaranteed their victory, but there were significant factors that favored the Germans. The majority of the German soldiers were from East Prussia. For this reason they were inclined to fight tenaciously to defend their homeland. And the two Russian armies faced a geographical challenge. According to military dogma, it is always best to concentrate units into one force rather than divide them in two, because dividing increases the probability of defeat. Yet the two Russian armies were separated by the Masurian Lakes and by the surrounding woodlands,
Europe's last primeval forest. It was simply easier for the two armies to move separately. That was fine when there was no fighting, in battle their separation proved disastrous. Another army misread the landscape and suffered the consequences. 1

German forces met the invasion by attacking first at Stallupönen on August 17, when a German army corps pushed back Rennenkampf's First Army and captured three thousand prisoners. German generals feared that they had overextended themselves and ordered their forces to fall back to Gumbinnen, where they were followed by Rennenkampf's pursuing forces. As the Russian First Army approached Gumbinnen on August 20, German forces attacked along a line that stretched more than fifty kilometers. German attacks succeeded initially, at the cost of thousands of soldiers killed, wounded, and captured on both sides. Counterattacking Russians captured six thousand German prisoners. The resistance of the Russian First Army, coupled with the possibility of being surrounded by the Russian Second Army, advancing from the south, persuaded Prittwitz to retreat west, toward the Vistula River.

When Germany's commanding general, Moltke, learned of Prittwitz's retreat, he fired him. Moltke replaced him with a retired general, Paul von Hindenburg, who was to be assisted by another general, Erich Ludendorff, who had led troops aggressively at Liège. Ludendorff and Hindenburg were helped by an ingenious colonel, Maximilian Hoffman, who analyzed the movement of Russian forces and took advantage of the ways in which the two Russian armies were divided over a large geographical area—a divide that was anticipated by the war-gaming of a generation of German staff officers. As in the practice war games, the German generals withdrew their forces away from the Russian First Army, checked in the east, by using the north-south railways to move troops quickly south toward the Russian Second Army under Samsonov. More than distance, lakes, and forest separated the two Russian armies. Samsonov and Rennenkampf disliked each other personally. They were also unlucky in their radio communications. Radio was still new at the time. It allowed the rapid transfer of battlefield information in real time, but in 1914 both the Entente and the Central Powers were still learning how to use the technology. Both sides had radio codebooks, but radio operators had difficulty keeping up with the volume of messages. Radio operators became careless about sending radio communications without using code. Uncoded messages between Samsonov's and Rennenkampf's headquarters indicated that Rennenkampf would not come to help Samsonov. This kind of intelligence seemed too good to be true. Hindenburg and Ludendorff doubted it but Hoffman persuaded them that such was the reality between Samsonov and Rennenkampf that they probably would not help each other.

Trusting Hoffman, Hindenburg and Ludendorff began their assault on Samsonov's Second Army. Samsonov had spread his troops thin, over a front of nearly one hundred kilometers. Denser German units made contact with the Russians on August 23. Battles raged up and down a front near the town of Tannenberg. Moltke was concerned enough by reports from the east that he dispatched three corps of infantry and one division of cavalry from France. But by August 26, it became clear that German forces were succeeding in destroying the overextended Russian left. German forces began to encircle the Russians. Instead of moving his forces to the flanks and fighting against encirclement, Samsonov ordered his troops to attack northward. They became completely encircled. By August 31, nearly the entire Second Russian Army was killed, wounded, or captured; only ten thousand of the original force escaped. Samsonov got lost in the woods. It appears that he killed himself rather than report such a catastrophic defeat to Tsar Nicholas.

After the massive victory at Tannenberg, Hindenburg and Ludendorff swung the German Eighth Army to the north to attack Rennenkampf's Russian First Army. Between September 5 and 13, the two armies fought a series of large engagements in the vicinity of the Masurian Lakes. Rennenkampf, fearing that he would be encircled like Samsonov, ordered a fighting retreat east toward the border with Russia. At the Masurian Lakes, the Russian First Army suffered 125,000 casualties, while the German Eighth Army withstood forty thousand. The Russians launched a counterattack on September 25, which, after three days, pushed German forces back to the Masurian Lakes. Even so, the battles of August and September of 1914 proved disastrous for the Russian army. The German army inflicted a major defeat on the Russians, even though, according to the Schlieffen Plan, it was the job of the Eighth Army merely to fight a delaying action against the Russian invaders.

Germany's Austrian allies also found themselves fighting a two-front war. On the whole, the Austrians were less successful than the Germans in balancing the constraints of manpower and geography. It seemed to most of the leaders of Austria-Hungary that honor demanded an invasion of Serbia. This was in spite of two recognized facts: that Serbia was unlikely to invade Austria-Hungary, while massive Russian forces were. Survival required an adequate defense against the Russians, but Austria's leading general, Conrad von Hötzendorf, divided Austrian forces into a northern group to resist Russia and a southern group to invade Serbia. Conrad's southern army, commanded by Oskar Potiorek, attacked Serbia with four hundred thousand soldiers, just enough to get across the border and
inflict significant damage but not enough to defeat Serbia's army, which also had about four hundred thousand soldiers. The Serbs were well-armed veterans of previous wars in the Balkans. They enjoyed the support of the local populace, plus a superior knowledge of Serbia's rugged, mountainous terrain.

When the invasion began on August 12, the Serbs allowed the Austrians to capture low-lying territory along the Sava and Drina Rivers. Serbian forces occupied higher ground near the Vardar River and lay in wait for the Austrians to attack. When they did, on August 16 and 17, Serbian forces held their ground and forced Conrad to divert several divisions from the north. Even with these reinforcements, the Austrians were forced to withdraw. They renewed their offensive in November and December. At one point they even captured the capital, Belgrade, but once again Serb forces drove them out. At the end of 1914, the Serbs and Austrians had fought to a draw, with each side suffering tens of thousands of casualties.

Conrad's decision to commit troops against Serbia jeopardized the Austrian forces that were poised to attack the Russians in the north. There, in what is today Poland, geographical conditions were quite different. One million Austrian troops advanced northward through their part of Poland, with their backs to the Carpathian Mountains and hemmed in by the Wisła River on the west and the Dniester River to the east. And from the Russian part of Poland, 1.2 million troops spread themselves in a four hundred-kilometer arc stretching from Lublin to Lvov (then called Lemberg). This land is a relatively flat, open space, which worked to the advantage of the Russian attack. The armies hurled toward each other over the plains. Their initial clashes around Krasnik, near Lublin in the north, resulted in an Austrian victory but Russian forces regrouped and pressed the attack. Massive battles were fought all along the front, in which generals attempted large-scale flanking movements against each other. By mid-September, the Russian army was winning. It had suffered a quarter of a million casualties but the Austrians suffered twice that figure. Depleted Austrian forces retreated in disarray toward Cracow, surrendering more than two hundred kilometers of their territory.

Austrian forces were pressed hard enough that Germany began to provide support. In October, German and Austrian forces attempted a coordinated assault. Thirteen German divisions under Hindenburg and Ludendorff marched toward Russian Warsaw, only to pull back when it seemed that they risked being surrounded by a larger Russian army. At the same time, thirty-one Austrian divisions advanced north from Cracow, only to be driven back again by the Russians. The Austrians counterattacked throughout November, losing more ground than they gained, including many of the passes in the Carpathian Mountains, but German attacks in the vicinity of Lodz pushed the Russian army back toward Warsaw again. In December, with German help, the Austrians did succeed in pushing the Russian front northward from the Carpathians.

The fighting on the Eastern Front can be hard to follow. On both sides, large armies maneuvered against each other across large spaces. Both sides scored victories and both sides experienced defeats. The eastern campaigns were important for Germany, in that the German army had successfully defended East Prussia from Russian invasion. Even so, the German army was also forced to draw reinforcements from France, a move that diminished the likelihood of a German victory. Still, Germany remained in a strong position.

By contrast, the war was already taking a toll on Austria-Hungary and Russia. Industrial production was having trouble keeping pace with the conflict, so that the Russian army began to run out of ammunition. By late 1914, the Russian army had lost 1.5 million of its 3.5 million men. Russia could still draw on its large population to make up the difference, but already by the end of 1914 replacement soldiers lacked training. One general, Alexei Brusilov, wrote in his memoirs that at this time, at the battle of Przemysl, he realized that this "was the last [battle] in which I can say that I had an army that had been properly taught and trained before the War. After hardly three months of war the greater part of our regular, professional officers and trained men had vanished, leaving only skeleton forces which had to be hastily filled with men wretchedly instructed who were sent to me from the depots while the strength of the officers was kept up by promoting subalterns, who likewise were inadequately trained. From this period onward the professional character of our forces disappeared, and the army became more and more like a sort of badly trained militia."
out of the war. In February 1915, in freezing conditions, two German armies advanced along the border of East Prussia with Russia near the Masurian Lakes. The Russians offered a stout resistance and kept the Germans from breaking through. Even so, Russian casualties amounted to two hundred thousand. Another winter offensive to the south combined German and Austrian forces in an effort to relieve 120,000 Austrian defenders besieged in the fortress of Przemysl, to the west of Lvov. This effort failed. The Russian army counterattacked successfully along a long front, ensuring the capture of Przemysl in March 1915. In the process, the Russians lost several hundred thousand more casualties, as did the Austrians. The manpower crisis deepened for both empires.

In May 1915, German reinforcements were nearly able to deliver a knockout blow to the Russians. Along the Carpathian front, a well-supplied German and Austrian force of twenty-three divisions attacked nineteen Russian divisions that lacked sufficient rifles and shells. Russian troops defended their positions by digging trenches and laying barbed wire but their defenses were superficial compared to the ones that could be found on the Western Front. Trench warfare only developed in specific zones of the Eastern Front, where there were unusually dense concentrations of armies. For the most part, though, soldiers on the Eastern Front experienced a war of movement. Why were the fronts so different? At any given time the Eastern Front was about twice as long as the Western Front, with roughly the same number of troops. The vast space and the relative lack of good roads and railroads also made it more difficult to reinforce trench positions quickly, which was more easily done on the Western Front. In the west, trenches remained the best protection for armies against modern weaponry; in the east, geography and technology ensured that most battles still involved maneuver, much as they had in the Napoleonic Wars.8

In the spring of 1915 the Central Powers pushed the Russians hard. In their May 1915 assault in the Carpathians, the Germans and Austrians broke through in the south near the town of Cieślice, capturing hundreds of thousands of Russian prisoners and forcing the Russian army to retreat. The Germans and Austrians pressed forward from the west and from the south, in some instances employing chlorine gas against Russian soldiers. By August 1915 the Central Powers had captured Warsaw and most of Russian Poland.

This was a major defeat for the Russians. Many Russian officers and soldiers blamed the Jews—the western borderlands of the Russian Empire were known as the Pale of Settlement, home to millions of Jews. The Jewish residents of the area had been subjected to numerous pogroms or murderous persecutions during the reign of Nicholas II, whose government tolerated and even encouraged civilian and military attacks on Jewish settlements. In 1915, these attacks began again. Jews were suspected of aiding the Germans and Austrians, whose governments were somewhat more tolerant. While Russian soldiers attacked the Jews, the Russian government ordered the forced migration of Jews from Lithuania, which lay on the German army’s path to Petrograd. Jews were accused of treachery, even though many had volunteered to serve in the Russian army in order to prove their loyalty.

The pogroms were a deplorable activity for an army that was growing desperate in defeat. Russia’s situation seemed dire enough that, in September 1915, the tsar took personal command of the army, a mistake in light of his limited talent. There was only one bright spot for Russian strategy: geography was on its side. Russia was a vast country, so the Russian army was able to trade space for time. Retreating from the Polish ridge to form a straight north-south line also gave the Russian army less of a front to defend. The Russians were down but they were not out. During the final months of 1915, they offered strong resistance to German pressure along the new front that stretched from the Baltic Sea straight down to the Carpathian Mountains.

The successes against Russia allowed the Central Powers, Germany and Austria, to renew the attack on Serbia. The Germans and Austrians were joined by the Bulgarians, who entered the war in September 1915 to settle old scores with Serbia, which had annexed Bulgarian territory in the Balkan War of 1913. In October 1915, Bulgarian forces attacked Serbia from the east while a joint German and Austrian force attacked from the north. The Serbs fought back as well as they could. They appealed for help to the British and French, who sent three divisions to Salonika, near Bulgaria’s border with Greece, where they were effectively pinned down by the Bulgarian army, by malaria, and by unfavorable geography. Serb forces—which had already suffered significant casualties in the battles against the Austrians in 1914—along with King Peter and his government were forced to retreat across a mountain range in winter to the Adriatic coast, where they were evacuated to Italy and to the island of Corfu.

Bulgaria’s entry on the side of the Central Powers was offset, to a degree, by the entry of Italy on the side of the Allies in May 1915. Many people in Italy hesitated to enter a war that held significant risks, but King Emmanuel III, his prime minister, Antonio Salandra, and a significant number of leading politicians and intellectuals saw war as an opportunity to bind together a nation that was divided along regional and class lines. The Italian leadership also hoped to gain more territory. During secret negotiations in early 1915, the British and French promised the Italians that at the end of the war they
could have a share of Austrian territory. The Italian leadership rose to the bait and entered the war—initially only against Austria—even though the Italian army of twenty-five divisions lacked sufficient artillery and was not trained well enough for major offensive operations. Under the leadership of Luigi Cadorna, the Italian army planned to defend its mountainous border with Austria while attacking through the mountains toward Austrian Trieste.

The geography of the Italian border with Austria hardly favored attackers. The region, which is part of the Alps, is highly mountainous and easily defended. There were only a few geographical options for an Italian attack on Austria. In the west, there were several mountain passes that could be attacked, while in the east attackers could cross the Isonzo River, which occupied a narrow corridor that was low-lying and prone to flooding. In 1915 the Isonzo and the surrounding mountains were the scene of three major assaults by the Italian army. All were repulsed at great loss each side lost more than a hundred thousand casualties. Along the Isonzo, relatively large forces tried to push through a narrow space that was easily defended by concentrations of troops, digging trenches, and using weapons that were especially suited to defense like rifles, machine guns, and artillery. In this way, the Isonzo came to resemble the Western Front. Yet the Italian front was different in that much of the fighting took place in nearby mountains. Some troops on both sides had grown up in the mountains and had trained as part of special alpine units, but for the most part the soldiers had little prior experience of mountain conditions. It took great efforts to move men and equipment short distances, especially at night, when men might not notice a sheer drop until it was too late. The weather, ranging from intense heat in the summer to freezing conditions in the winter, presented major challenges. All year the soldiers experienced major precipitation. In the mountains, it was difficult to dig entrenchments, while the rock, when hit by shellfire, exploded into dangerous fragments. The Italian soldier Virgilio Bonamore described a summer night on a mountain:

A terrible night. Towards midnight a force thunderstorm breaks out. In the meantime, the first platoons of the 23rd arrive to take our places in the trenches. We stand waiting, up to our knees in water, for the order to leave. Rain pours down nonstop. It's cold, pitch dark and I'm drenched to the bone. At 2 a.m. we set off. We can't see a thing, so we hold on to each other's cloaks. After a few hundred metres, we stop in torrential rain on a muddy path, about 20 centimetres wide. We stand, unable to move, right on the edge of a sheer drop. It is indescribable torture. I shake convulsively with cold, I can feel the water dripping down my skin, but if we move one more step, we'll fall straight...
to our death. We stay standing like this, in the rain, in total stillness for at least three hours."

As the quotation from Bonomoe suggests, the war in Italy took place in one of the world’s most dangerous and spectacular environments. The same might be said for the fighting that took place in Africa, although the numbers of fighting men were smaller, while the geographic expanse was much larger.

**War in Africa, 1914–1916**

Historians have tended to focus on the First World War in Europe. Europe was, after all, the continent that suffered the greatest casualties and political upheavals during the war. Then why is it called a “world war”? Initially, the British called it the Great War and the French used a phrase that meant the same thing, la grande guerre. “World war” comes from the German Weltkrieg, which means “war of global significance” just as much as it does “war around the world.” In any event the First World War did have a global significance that went beyond Europe. We have already seen that the principal weapons used on Europe’s battlefields during 1914 to 1915 were developed and tested in an era of imperial expansion. French and British conquests in Africa and Asia became a sore point with many Germans, whose nation obtained the scraps from the imperialist table: colonies like Cameroon, Togo, South-East Africa (Tanzania), and South-West Africa (Namibia). The desire of German nationalists for “a place in the sun” supported German militarism and in particular the construction of Germany’s fleet.

We have also already seen that the Allied armies depended to a considerable extent on colonial manpower. For decades the British had kept their army small, planning to use Indian troops in case of emergency. In 1914, such an emergency happened. Britain deployed most of its regular soldiers to France. Heavy casualties required replacements while Allied leaders sought a greater overall British commitment. The British government appealed to civilians to volunteer. Thousands did, but, while they were training, several divisions of Indian army soldiers arrived in France and fought on the Western Front. They were joined by other troops from around the empire, especially the Canadians, while a substantial number of old and new British troops were Irish. The French, too, incorporated colonial troops into their effort on the Western Front.

As the start of the war, the colonies were not only providing significant numbers of troops for Britain and France—they were supplying laborers, too.

In both Britain and France, the manpower needs of the army and navy, together with the manpower needs of farms and factories, meant that labor was scarce for other activities that supported the war effort. Ships and railway cars needed to be loaded and unloaded. Roads needed to be built and maintained. Trenches and graves needed to be dug. Trees needed to be cut down. Britain and France recruited hundreds of thousands of laborers to work behind the lines of the Western Front. They came from British and French colonies in Africa, the Caribbean, and Asia, as well as from China, all places where networks of labor recruiting already existed to supply the mines and plantations with labor. Many of the men who joined the Allied forces supported the war effort and hoped that in return for participation their countries might receive a greater degree of freedom. Laborers typically came voluntarily in order to earn money but some were subject to coercion, particularly those recruited from Africa. Colonial laborers were often subject to the same restrictions in France as they experienced at home. Many were kept in segregated camps and were prohibited from mingling with civilians and soldiers.

In the intensive war that developed in Europe in 1914 to 1915, both sides grasped for any advantage. Overseas the Allies had a significant advantage in that they could draw on the human and material resources of their colonies. This made it imperative for the British and French to maintain order in their colonies. Both colonial powers took steps to ensure their prestige as rulers, while the Central Powers took steps to try to undermine that prestige and cause dissent. Even so, the Central Powers’ efforts could not take the form of major incursions and invasions, simply because the Allied navies dominated the world’s oceans and had a chokehold on the North Sea and the Mediterranean, where the Central Powers had their naval bases.

Allied power at sea made it possible for them to turn the First World War into an extension of the colonial warfare that occurred during the previous five decades. British Empire forces, along with their Belgian, French, Japanese, and Portuguese allies, captured German territories in Africa and Asia. The Allies pressed their advantage on the Ottoman Empire, which entered the war on the side of the Central Powers in November 1914. Ottoman territories, stretching throughout the Middle East, was now up for grabs by the imperialist powers.

The Ottoman Empire, thought to be the "sick man of Europe," resisted well at first, provoking concerns about Allied imperial prestige. Successful Ottoman resistance at Gallipoli and Kut, together with successful German resistance in East Africa, made for the only bright spots in the Central Powers' war effort outside of Europe. Germany's introduction of submarine warfare prevented the Allies from receiving all their raw materials but it also
produced outrage in the United States. Prestige was closely bound to the ability of a country to control and protect the distribution of raw materials. As such, the war at sea and the war in the colonies was an extension of nineteenth-century imperialism.

The changes wrought by imperialism were evident in most of sub-Saharan Africa and were keenly felt in the German colonies. Germany claimed its colonies in order to compete globally with Britain and France, both of which had long histories of colonial administration. In Africa, German administrators generally followed the pattern of the British and French in that they tended to govern coastal regions directly, with German personnel, while relying on collaborating “headmen” to govern remote regions in the interior. Christian missionaries were relied upon to introduce “civilized” practices and to provide intelligence about African people. Like other colonies, German colonies were expected to produce raw materials for the mother country. Those who resisted development, civilization, and administration would be put down by colonial armed forces, led by German officers and manned by African soldiers. The Germans followed the general pattern of colonization in Africa but they tended to be more efficient than their British and French counterparts.

The most successful German colony was tiny Togo, a narrow strip of land in West Africa with a million residents governed by several dozen German administrators and officers. The colony exported palm kernels and other raw materials produced mainly by peasant farmers, who were helped by German investments in the development of railways and roads. Africans were not represented in the government, although in the interior district administrators worked with appointed African chiefs to collect taxes and maintain justice. Corruption was common, as was corporal punishment, but in 1914 the German government was considering reforms. Togo also contained the most important strategic objective in Germany’s African colonies: the radio transmitting station at Kamina, located 120 kilometers to the north of the coastal capital, Lomé. The radio transmitter linked Germany to its other African colonies, while also providing a connection to ships in the South Atlantic. Two companies of Britain’s Gold Coast Regiment invaded from present-day Ghana in the west on August 12, 1914, firing the first British shots of the war as they captured Lomé. The Gold Coast Regiment then marched north, encountering occasional resistance from lightly armed German forces. More British forces approached from the east, while French forces were coming from their colony Dahomey, to the west. On August 24, the German governor ordered the destruction of the radio station. The next day, he surrendered the colony. The Allied victory in Togo may seem insignificant, in light of the colonial struggle in Europe, but, in considering the transfer of territories during wartime, it might be remembered that even though Togo was smaller than most African colonies it was still bigger than Belgium and Alsace-Lorraine put together.

To the east of Togo, Germany’s colony in Cameroon was substantially larger—in fact it was about the same size as Germany—with a population of three million. In Cameroon, German companies were granted concessions to produce raw materials. Peasant farmers produced for the market, too, with the same negative and positive inducements experienced by farmers in Togo: taxes had to be paid while railroads and roads made commerce attractive. Interior districts were administered by German officers and appointed African chiefs, while the coastal towns were ruled directly by German authorities. Cameroon was a model of efficiency, with a budget that was routinely balanced, a rarity in an African colony. But like Togo, it was surrounded by British and French colonies and cut off from Germany by the Allied navies.

Germany had greater military success in Cameroon, in west-central Africa. The Germans kept four thousand troops in Cameroon, three-quarters of whom were Cameroonians. In 1914, they enjoyed success in spite of being badly outnumbered by the approximately twenty thousand Allied soldiers who invaded from the nearby British, French, and Belgian colonies. They came in September 1914, when British West African units seized the coastal capital, Duala, and French forces pushed into southern Cameroon. German troops escaped to the northern plateau, from there they went to Spain’s offshore island, Fernando Po, where they spent the rest of the war, preparing for a time when a German victory in Europe would allow them to take power in Cameroon again.

In early 1916, the prospect of a German victory was not so far-fetched, either in Europe or in Africa. While the Germans were defeated quickly in Togo and slowly in Cameroon, they remained in charge of German East Africa, a colony with tremendous economic potential. There, in the two decades before the war, German administration and trade focused on the coastal towns, home to Muslim Swahili traders, whose commercial networks reached far into the interior. German administrators, merchants, and soldiers worked together with Swahili merchants, constructing two major railways to support trade within the interior. Swahili boys were able to receive a German education. German was made the language of administration in the interior forests and grasslands, where German authority was centered in military outposts. Local people were affected adversely by two ecological disasters at
the turn of the century: a rinderpest, or cattle disease, that killed off many herds, and a spread in trypanosomiasis, or sleeping sickness. Grievances over payments for rubber and cotton led many African people to join a millennial movement, the Maji-Maji, which caused most of the southern half of German East Africa to rebel against Germany. German troops suppressed the rebels ruthlessly, killing two hundred thousand people and substantially depopulating large areas of the countryside.

When war broke out in August 1914, German East Africa appeared to be vulnerable, as many African people resented German rule. In addition, the colony was bordered on the west by the Belgian Congo, with British Northern Rhodesia (Zambia) and Nyasaland (Malawi) lying to the southwest, and with British East Africa (Kenya and Uganda) lying to the north. To the south, Mozambique was governed by the Portuguese, British allies who did not enter the war right away. On the coast, the British controlled the island of Zanzibar, while Britain's Royal Navy dominated the Indian Ocean.

The German governor of East Africa announced his desire for his colony to remain neutral, but his orders were ignored by the commander of the German cruiser Königsberg, which played cat-and-mouse along the coast, sinking British vessels until the Royal Navy put it out of action almost a year later. Orders to remain neutral were also ignored by the military commander Colonel Paul von Lettow-Vorbeck, who prepared his 260 German officers and 2,500 African troops for action. Lettow-Vorbeck began hostilities by raiding the border with British East Africa, where an equivalent force of settlers and African soldiers defended the border. In November 1914, the British landed eight thousand Indian troops at the port of Tanga, only to be repulsed by Lettow-Vorbeck's smaller force. After the embarrassment at Tanga, the East African front became the scene of only minor skirmishing throughout 1915. The Allies only resumed major operations against Lettow-Vorbeck in the following year.

German rule in South-West Africa, now called Namibia, was like German East Africa in that it was more than twice the size of Germany itself, but South-West Africa's mainly arid environment ensured that the population was only about two hundred thousand, compared to Germany's sixty-five million. Of those, fourteen thousand emigrated to South-West Africa, attracted by farmland in the vicinity of Windhoek, in the interior. Their settlement was made possible by a genocidal war that the German army fought between 1904 and 1908 against the Herero, local pastoralists who revolted against German rule. A German campaign reduced their number from seventy-five thousand to fifteen thousand and accounted for many thousands of their Nama and Baster neighbors, too. The German army lost two thousand casualties as well.

The experience proved important: several German veterans of the genocidal campaign against the Herero went on to fight on the killing fields of Europe. As the war against the Herero was coming to a close the Germans discovered diamonds near Lüderitz, which produced a boom in mining while encouraging the development of towns and transportation. Labor was hard to find, on account of the recent genocide. The remaining Herero, Nama, and Baster were typically required to work on settler farms, so mine workers had to be recruited from the Ovambo people in the far north.

The colonial situation in German South-West Africa was complicated by relations with the British colonies in South Africa, which were recovering from the Anglo-Boer War. The British had won the war by defeating Boer forces in the field and by rounding up Boer supporters and placing them in concentration camps, where many died from disease and malnutrition. Boer resentment was mitigated, in part, by the creation of the Union of South Africa in 1910. Under the terms of this political arrangement, which unified the colonies and chieftoms of South Africa under one government, the Boers were given a disproportionate share in the European-dominated government while the discriminatory "native" policies of the former Boer republics were allowed to remain substantially in place. This favorable treatment led many Boer resistance leaders to reconcile themselves to British rule and even to participate in the new government. The elections of 1910 were won by the South African National Party, led by two former guerrillas, Louis Botha, a landowner from the Transvaal, and Jan Smuts, a Cambridge-educated attorney from the Cape. Their most significant achievement was the Natives Land Act of 1913, which pushed the African majority onto segregated rural reserves and prevented them from renting from the Europeans who owned most of the land outside of the reserves.

The outbreak of the war forced many Boers to consider the extent to which they were loyal to Britain. On the one hand, in the 1900s the British government was willing to contemplate a greater degree of independence for its white colonies, while it appeared that British South Africans were now more appreciative of Boer desires. Yet some Boers felt sympathy with Germany, the country that had supported their efforts during the war against Britain. Before, during, and after the war, quite a few Boers had migrated to South-West Africa and found the German colony to be congenial. The vast majority of Boers stayed home and quite a few retained a deep hatred for Britain. Some Boers were even willing to fight on the side of Germany, based on the principle of "my enemy's enemy is my friend." And some Boers were willing to become reconciled to Britain to a degree but were not quite ready to fight and die for the British Empire.
The test of loyalty came when Britain declared war on Germany on August 4, 1914. Britain's settler colonies were not completely sovereign: Ireland was considered part of the United Kingdom, while Australia, Canada, New Zealand, and South Africa had representative parliaments that managed their own internal affairs. The British parliament assumed that its declaration of war brought the entire empire into the war, but in South Africa politicians debated about the extent of their participation. Many South Africans of British descent supported the war, while Africans, Boers, and Indians held various opinions. The Boer leaders of the dominant South African Party, Botha, the prime minister, and Smuts, the minister of defense, debated with their more reticent colleagues in the cabinet about Britain's request for South African forces to invade German South-West Africa. After a month the cabinet decided to grant Britain's request, but only if the South African parliament agreed and only if volunteer troops were used. During the cabinet deliberations, several well-known Boer military and political leaders began to plot a coup against British rule. When South Africa declared war, they declared independence and led five thousand Boer cavalrymen on raids in rural areas in hopes of sparking a widespread rebellion. Botha led loyal Boer units against them and over the course of the month succeeded in capturing or killing almost all of the rebels.

Botha's next mission in 1914 was to lead South African forces against the Germans in South-West Africa. The Germans were particularly vulnerable. Their two thousand troops and three thousand reservists were not well prepared for war against fellow Europeans. South Africa could put numerically greater forces into the field, while Britain's navy controlled the coast. The navy landed small South African forces on the coast at Luderitz. The Germans yielded the mining town to the South Africans, but at Sandwich, on the border with South Africa, a force of 1,700 Germans captured three thousand South Africans. To the north, another small German force, with five hundred troops, skirmished with ten times as many Portuguese soldiers in Angola, their colony to the north, and succeeded in driving them away from the border region. (Portugal was allied with Britain, although not actively involved in the war.) But German successes were to be short-lived. Once the South African government succeeded in suppressing the Boer rebellion, it could turn its full attention to South-West Africa.

In early 1915, South Africa had seventy thousand men in its armed forces, with more than half of them ready to deploy to South-West Africa, but environmental conditions in South-West Africa limited their mobility. Water was particularly scarce, and, as the South Africans took control of the port of Swakopmund and began to advance on Windhoek, the capital, in the interior, they found that the Germans had poisoned the wells. New wells proved slow to dig and yielded little water. Water even had to be transported by ship and overland by motor vehicles. The South Africans hoped that their advance would follow the rail line from Swakopmund to Windhoek, but the Germans destroyed it. South African forces were forced to rebuild it, as there was insufficient water and hay for mules to pull transport wagons and in any case the Germans had placed landmines on the roads. German forces executed strategic retreats, avoiding large-scale battles. It was only in May 1915 that South African forces, led by Botha, were able to capture Windhoek and its radio transmitting station. The Germans remained in control of the rest of the country but were forced to surrender in July. Combat casualties were very low compared to other theaters of the war, amounting to several hundred lost on both sides. Botha's government allowed the German reservists to return to their farms, in the expectation that a South African administration of South-West Africa would depend on loyal settlers dominating the majority African people, just like at home.

War at Sea, 1914–1916

Britain and France's ability to defend their empires depended on the willingness of people in remote countries to serve their interests. While some challenged imperialism, most imperial subjects remained loyal or at least neutral. Morale in the colonies preserved Allied interests. So did Allied navies. To administer far-flung empires, Britain and France depended on their navies, and, as we have seen, the Germans also understood the connection between navies and empires, even if their empire was smaller. At the same time as the kaiser was acquiring colonies such as Togo, Cameroon, Tanganyika, and Namibia, he was also embarking on an ambitious naval building program. Much attention was paid to the construction of dreadnought battleships, the enormous ships that mounted large, long-range cannons. Naval officers prepared for big naval battles in which fleets of battleships, cruisers, and destroyers sailed against each other, firing and maneuvering. But when war came, a consideration of geography, technology, and the nature of the war led naval officers and their governments to fight differently. In the First World War, there was only one large battle between fleets, the Battle of Jutland, fought between the British and German fleets in 1916. This battle was exceptional. Instead of fighting big battles, the Allied fleets devoted themselves to economic warfare, blockading Germany's access to the sea. And the blockading fleets refused, for the most part, to approach close to Germany, where they might be trapped. Instead, Allied blockade efforts focused on sealing the
northern passages that run between Scotland and Norway, a geographical strategy that choked off Germany at low risk.

Allied commanders were aware of the risk because their battleships were so costly to build, one of the most peculiar features of the technological history of the First World War. Admirals also worried about the vulnerability of their battleships to new weapons, such as mines, submarines, and torpedoes. These fears were genuine. In response to the blockade, the German government pressed the construction of all these weapons. Submarines armed with mines and torpedoes sailed past (or under) the Allied blockade, in an attempt to build a blockade of their own around the British Isles. Navies on both sides engaged in grim economic warfare that killed both sailors and civilians. As on land, geography and technology made it difficult for combatants to achieve glory in combat.

There were, of course, some exceptions. At the war's outset there were a number of small naval battles on the surface that hardened back to the supposedly glorious days of "fighting sail." In 1914, Germany ordered several of its cruisers into action around the world. As we have seen, one German cruiser, the König, helped to defend the coast of German East Africa until it was sunk in 1915. Another cruiser, the Kondrat, sank Allied ships in the South Atlantic before engine trouble caused it to explode in November 1914. In China, Germany kept a naval squadron at Tsingtao. When Japan entered the war on the side of the Allies, the German commander, Vice-Admiral Maximilian Graf von Spee, ordered his ships out to sea rather than be destroyed in port by Japan's Imperial Navy. Before the Japanese approached Tsingtao, Spee sent his fastest cruiser, the Emden, to the Indian Ocean, where it sank thirty ships and even shelled the city of Chennai (formerly known as Madras), on the east coast of India. The ship was trapped and sunk by an Australian cruiser in November 1914. In the same month, Spee's five other cruisers sailed across the Pacific toward the coast of Chile, where they engaged a squadron of British cruisers, sinking two of them; this was Britain's first naval defeat since the Napoleonic Wars. When the Brit- ish Admiralty learned of the defeat, they were perturbed enough to dispatch six cruisers, including two fast battle cruisers, to South American waters. Spee sailed his ships around Cape Horn, intending to attack Port Stanley in the Falkland Islands. When he approached the harbor he was surprised to discover the British cruisers. The British, superior in guns, speed, and numbers, chased and sank four of the German ships on December 8, 1914. Four months later the British cruisers trapped the fifth one off the coast of Chile.

The cruiser actions indicated that the German navy operated at a considerable geographical disadvantage. Yet the prevailing naval technologies made it difficult for the Allied navies to achieve successes that were significant. The operations of 1914 demonstrated that British cruisers could ultimately prevail over German cruisers but the battles had little impact on the course of the war. The British navy's greatest success of 1914 was actually in escort of the ships that carried troops and supplies across the English Channel to France in August 1914, a feat of logistics that was not particularly glorious. At the end of that month, a small force of British submarines and destroyers attacked German patrols off Heligoland, near the coast of Germany. When German cruisers raced out, Britain's battle cruiser squadron intervened, sinking three German cruisers and a destroyer before breaking off the battle. The British were surprised by the quick naval raid that the Germans launched against several English seaports during the fall of 1914. In January 1915, the German navy ordered a squadron of battle cruisers to sea, hoping to lure and trap British ships at Dogger Bank, but the British had cracked Germany's naval codes and were lying in wait with their own squadron of battle cruisers. In a short, sharp battle on January 23, 1915, the British sank one German battle cruiser and badly damaged another. The German losses at Dogger Bank and Heligoland lent weight to the position taken by the Kaiser: German battleships should not venture into the North Sea, lest they be lured and trapped by the larger British navy.

In 1914 and 1915, the British navy contained the German navy on the North Sea. The story was similar in the Mediterranean. The British, working with the French, exercised a somewhat loose control in the fall of 1914 that tightened in May 1915 when Italy joined the Allies. The Austrian navy posed a threat from its bases along the Adriatic coast but it was so badly outnumbered that its ships remained at their moorings for the next four years, except for several raids.

While on the Mediterranean, Adriatic, and Aegean the Allied navies were superior to the forces of the Central Powers, the Germans did carry out one successful operation with two cruisers, the battle cruiser Goeben and the light cruiser Breslau. The two warships eluded Allied patrols on their way to Istanbul, which they reached at the end of August. The German government donated the ships to the Ottoman Empire as part of its effort to recruit another ally. The German cruisers were refitted as Ottoman ships but retained their German officers and crews. The donation played an important part in the Ottoman decision to enter the war on the side of the Central Powers in October 1914. The German ships also played an important part in defending Istanbul from attack by the British and French from the west and the Russians from the north and east. While the Russian navy controlled the Black Sea, its inferior ships were not a match for the Goeben and the Breslau.
Russian naval forces improved over the course of 1915, yet at no point were they able to contemplate action against Istanbul. This was mainly for reasons that had to do with geography and technology. Istanbul is situated at the eastern opening of the narrow, fortified waterway that connects the Black Sea to the Aegean. Not only were the German cruisers still formidable—so were the fortifications along the straits. The closure of the straits had serious economic consequences for Russia. Merchants in Russia’s southern ports were not able to export grain to markets overseas, nor were they able to import needed war supplies. Russia’s northern ports remained open for commerce but ice closed them for most of the long winter. While Russia controlled its coastal waters, including the Black Sea, it was effectively blocked by the Ottoman Empire’s decision to join the Central Powers.

The Russians had ports on the Baltic, to the north, but the German navy controlled the outlets to the North Sea. Even so, the Germans had little success on the Baltic. The Germans chose to send their best ships to the North Sea, leaving a smaller force of old ships on the Baltic. The Russians, who had lost many ships in the Russo-Japanese War of 1904-1905, had a numerical advantage on the Baltic, but everyone recognized that, should the Germans choose to shuttle ships from the North Sea to the Baltic, the Russians would face a formidable enemy. They responded by employing their ships in defensive positions, particularly around the capital, St. Petersburg, and by laying extensive minefields. The Baltic became a stalemate that was different in one key respect from the North Sea, where the British successfully blocked Germany; the Germans were still able to use the Baltic Sea to transport goods. Sweden became a key trading partner with Germany, supplying the Germans with iron ore and other essential goods.

Before the war the major powers focused on building battleships, but, within a few months of the war breaking out, the constraints of geography and technology weighed heavily on naval decision makers. Germany’s disadvantages could best be overcome by using a technology that had been underestimated before the war: the submarine. Before the war the British and French navies had experimented extensively with submarines. In 1914, they had fifty-five and seventy-seven, respectively. The Germans began their submarine experiments later and in 1914 the German navy only had twenty-eight U-boats.

Before reading too much into these numbers it is important to remember that submarines were still in the earliest stages of design, while naval leaders had not yet thought carefully about their possible roles. Some admirals regarded submarines with contempt, as vessels that smacked about dishonorably. One British admiral declared that they were "un-English" and were "the weapon of cowards who refused to fight like men on the surface." For the most part, admirals tended to imagine that navies would use submarines to sink other naval vessels. This was, in fact, what started to happen in September 1914, when a British submarine sank a German cruiser and a German submarine sank three British cruisers. In January 1915, a German submarine sank a British battleship in the English Channel. On account of the submarine attacks, the British fleet shifted its main base from Scapa Flow in the Orkney Islands, just north of Scotland, to harbors in Scotland and Ireland. It was only after nets, mines, and other defenses were installed around Scapa Flow that the fleet returned there in early 1915. Even then, British admirals—and their German counterparts—hesitated to commit their battleships and cruisers to offensive action, fearing that they might be sunk by submarines.

After the initial encounters of 1914, it began to seem that at sea, as on land, there was a stalemate. British and German naval strategy shifted away from offensive actions by their fleets to economic warfare. The British navy used less expensive ships, such as old cruisers and armed ocean liners, to blockade the northern approaches to the North Sea in an effort to cut off supplies to the soldiers and civilians of the Central Powers. The Germans, for their part, began to use submarines against merchant ships that were on their way to Britain, creating a blockade of their own. The German submarine campaign opened in February 1915.

Submarine warfare was complicated by several factors. Germany announced that all ships approaching the British Isles were subject to sinking, but the German fleet did not have enough submarines to sink every merchant vessel. Instead, the German government hoped to sink enough ships to scare away the rest. The submarine was as much about creating public perceptions of risk as it was about sinking ships. As a strategy, it had tremendous potential to inflict economic damage on Britain. Even so, the submarine had technological limits that helped to produce a public relations problem. Submarines were small relative to other ships. They achieved success mainly through surprise, yet the element of surprise was limited by the rules of warfare at sea. By convention, naval vessels that intended to sink merchant vessels were obliged to warn the crew and give them enough time to climb aboard lifeboats. This rule required submarines to rise to the surface and notify the merchant vessel’s crew that they would be sunk. This rule worked well enough for large, heavily armored surface vessels but submarines were small and vulnerable to attack. In some cases captains of merchant vessels decided to take their chances in efforts to ram and sink submarines. The Allied navies even armed some merchant ships, calling them "Q-ships," and...
used them to lure submarines. Captains of British merchant vessels even flew the flags of neutral countries. Submarine captains responded to these tactics by not rising to the surface to give warnings. Submarines earned the support of the kaiser, who announced "unrestricted submarine warfare." The kaiser permitted submarine captains to fire their torpedoes from under the water, without warning, at any ship in the vicinity of the British Isles.

Neutral countries such as the United States found the attendant loss of civilian life to be outrageous. In May 1915, a German submarine sank the passenger ship Lusitania off the coast of Ireland, killing 1,201 civilians, including 128 Americans. The U.S. president, Woodrow Wilson, demanded that Germany cease unrestricted submarine warfare. The kaiser complied. Once again, German submarines rose to the surface before sinking ships. Once again, German submarines were attacked by armed merchant vessels. Faced with the choice between losing more submarines and U.S. intervention on the side of the Allies, the kaiser chose to end all submarine warfare in September. The campaign had been a political failure even though it had resulted in the sinking of nearly a million tons of shipping.

War in the Middle East, 1914-1916

The Central Powers' key naval successes did not come in the North Atlantic or the North Sea. They came, instead, in the Dardanelles, where the Ottoman Empire held onto the passageway between the Aegean Sea and the Black Sea in the face of an Allied attack sustained from February 1915 until January 1916. The Ottomans effectively blocked Russia from exporting grain and importing munitions, ensuring a severe economic and strategic strain. Geographic considerations inspired the Allies to attack the Dardanelles from the Aegean Sea, to the west. Britain's First Lord of the Admiralty, Winston Churchill, had visions of the fleet steaming through the straits, capturing Istanbul, knocking the Ottomans out of the war, and flanking Germany and Austria from the south. Churchill was a graduate of the Royal Military Academy at Sandhurst and a veteran of campaigns against amateur soldiers in South Africa, the Sudan, and the Northwest Frontier of India. He believed it would be possible for the Royal Navy to mount a successful assault on the Ottoman Empire. Churchill seriously underestimated the Ottomans, who had a professional, modernizing army that was receiving considerable help from the Germans.

At Churchill's direction, in February and March of 1915 the British and French navies attempted to push a fleet of ten battleships through the Narrows, in spite of warnings from senior admirals that naval gunfire could never defeat the Ottomans' well-built fortifications. The geography of the Dardanelles gave defenders a heavy advantage. Allied naval gunners had to hit Ottoman guns directly to put them out of action, but an Ottoman hit on an Allied battleship's steering or hull could put numerous Allied guns out of action. The technology of land-based artillery also made it easier to hit a ship. A land-based cannon fires a shell in a high trajectory. A miss splashes in the water and is easily spotted, enabling the observers and battery commanders to adjust their fire accordingly. By contrast, a naval gun fires in a flat trajectory. When it misses at sea, it is relatively easy to spot the splash and make adjustments. But when it misses on land, its flat trajectory means that it might miss by a lot, while the target and the actual site of impact is often obscured by dust and smoke. To further help the defense, the Ottomans laid mines and employed mobile howitzers to chase mine sweepers. The mines, combined with the artillery and the fortifications, made it virtually impossible for the Allied navies to reach Istanbul.

The Allied admirals' pessimistic assessment of the fortifications proved correct during a pitched battle on March 18, 1915, when Ottoman mines, protected by mobile field artillery, sank three battleships and disabled three more. The Allied navies yielded to the armies. On April 25th, Allied troops landed on the Gallipoli peninsula near the entrance to the straits. At the tip of the peninsula, Cape Helles, fifteen thousand soldiers from Britain, France, and their colonies came ashore, while fifteen thousand troops from the Australian and New Zealand Army Corps (ANZAC) landed at Ari Burnu, a point on the northwest coast that was subsequently named Anzac Cove. Allied troops met heavy resistance from the Ottoman army everywhere, yet most military historians agree that, with better planning and execution, the Australians in particular might have seized key positions. Instead they made several key errors. For example, the Australians landed one mile north of their planned beachhead. Disorderly ANZAC soldiers encountered determined and well-led Ottoman troops who nearly drove the invaders back into the sea.

The ANZAC and other Allied forces dug in and Gallipoli became the scene of trench warfare. What caused the stalemate? During and after the campaign, journalists, historians, and official enquiries have pointed to poor strategic planning. The idea that all of European Turkey and the Balkans could become a long and successful southern front was preposterous, given the constraints of resources and geography. At the operational level, it was virtually impossible for a navy to break through the heavily fortified Dardanelles, while military operations, such as the landings at Anzac and the attacks at Lone Pine, never mounted sufficient force. The infantry tactics that
were often used, with soldiers fixing bayonets, jumping out of their trenches, and charging forward into enemy machine-gun fire, revealed a certain misplaced optimism, given the experiences of soldiers in Europe in 1914. All the accounts written during and immediately after the Gallipoli campaign criticized the strategic, operational, and Tactical failures and blamed them on senior officers and politicians. And following the journalist official historian of the Australian forces, C. E. W. Bean, many recent historians have represented individual soldiers as heroes, in contrast to the British leadership, who are blamed for sending inadequate resources to win the battle.

Much historical work has focused on poor leadership, from the British cabinet on down to field commanders. Yet if we shift focus to environmental factors the campaign looks somewhat different. The campaign originated in the British government’s faulty strategic assessment of geography—not somehow in the geography itself—while Allied defeat at the hands of the Ottomans can be understood by assessing the ways in which each side applied manpower and technology to topography. These are modifications to the conventional military and political histories, although, as they relate to geography they might be claimed as environmental. Another environmental aspect of the story involves the experiences of the soldiers themselves. The troops who fought at Gallipoli experienced dangerous and degrading circumstances. The Ottoman experience at Gallipoli is only beginning to be understood. By contrast, Allied troops depicted their humid environment in a wealth of writing and art.

At Gallipoli, environmental conditions tested the limits of human endurance. Troops suffered from exposure to heat and cold. They experienced water shortages and intestinal diseases, while at the same time sharing cramped quarters with flies, lice, and corpses. The filthiness of Gallipoli highlights a key point about the campaign and about campaigns in the First World War more generally. They are remembered for their degradation, which soldiers experienced and depicted with reference to environment and technology, and contrasted with the nineteenth-century belief, held by British, French, and Ottoman alike, that modern civilization held out the prospect for something better.

In Allied accounts of the fighting around the Dardanelles, personal degradation was often described by reference to the hostile environment. Many particularly recalled the misery of living with swarming insects. Private Harold Boughon of the London Regiment remembered that:

One of the biggest comes was flies. Millions and millions of flies. The whole side of the trench used to be one black swarming mass. Anything you opened,

like a tin of bully, would be swarming with flies. If you were lucky enough to have a tin of jam and opened that, swarms of flies went straight into it. They were all around your mouth and on any cut or sore that you’d get, which then turned septic.

Another soldier, A. P. Herbert, composed a poem entitled “Flies” about the indignities visited by the insects upon decomposing corpses:

The flies! Oh, God, the flies!
They soiled the sacred dead.
To see them swarm from dead men’s eyes.
And share the soldier’s bread.

Insect plagues, dread diseases, and poor sanitation filled the battlefield with environmental hazards and produced the most degrading deaths. Seaman Joe Murray of the Royal Naval Division remembered that:

Dysentery was a truly awful disease that could rob a man of the last vestiges of human dignity before it killed him. A couple of weeks before getting it my old pal was as smart and upright a guardian. Yet after about ten days it was dreadful to see him crawling about, his trousers round his feet, his backside hanging out, his shirt all soiled—everything was soiled. He couldn’t even walk. So I took him by one arm and another pal got hold of him by the other, and we dragged him to the latrine. ... We tried to keep the flies off him and to turn him round—put his backside toward the trench. But he simply fell into this foot-wide trench, half-sideways, head first in the time. We couldn’t pull him out, we didn’t have enough strength, and he couldn’t help himself at all. We did eventually get him out but he was dead, he’d drowned in his own excrement.

In order to compensate for the hostility of the environment, British troops, wherever they went, tended to give places names that reminded them of home. This practice was true at Gallipoli, too. The British trenches at Cape Helles were given such names as Piccadilly Circus, Regent Street, and Hyde Park Corner, a reflection of ironic nostalgia for home. It is also a reflection of long-standing British colonial practice to name places after home as part of the process of appropriation: witness New York, Melbourne, and Wellington, to name but a few.

This practice was, of course, simultaneously ironic and nostalgic. Nostalgia for particular places in Britain and Ireland could also be found in other sorts of depictions that mention places at home. The song most strongly associated with the British army in the First World War is “It’s a Long Way, to
Tipperary. The fact that Tipperary is in Ireland (then a part of the United Kingdom) was not such a concern in the British army. The song mentions Piccadilly and Leicester Square as well, and, besides, even the units from towns and counties in England and Scotland were heavily supplemented by Irishmen, a key way in which Britain relied on colonial troops during the war. The main thing to remember about the song, though, is that it helped soldiers in the British army to think of a landscape at home while serving far away.

In poetry, too, British troops reflected on their homes. Most famously, the poet Rupert Brooke, on his way to Gallipoli, wrote the following sonnet.

If I should die, think only this of me:
That there’s some corner of a foreign field
That is for ever England. There shall be
In that rich earth a richer dust concealed;
A dust whom England bore, shaped, made aware,
Gave, once, her flowers to love, her ways to roam,
A body of England’s, breathing English air,
Washed by the rivers, blest by suns of home.
And think, this heart, all evil shed away,
A pulse in the eternal mind, no less
Gives somewhere back the thoughts by England given;
Her sights and sounds; dreams happy as her day;
And laughter, learned of friends and gentleness,
In hearts at peace, under an English heaven.

Notice how even the structure of the poem moves away from England. The first half is in the classic English form of the Shakespearean sonnet, rhyming ABAB CDCD, while the second half is an Italian or Petrarchan sonnet, rhyming FGH FGH.

Such reflections on location were different from the practice of the Australians and New Zealanders, who tended to name geographical features descriptively or even after soldiers. For Australians and New Zealanders, Gallipoli came to be remembered more as a special occasion for their nations—the first time their soldiers fought outside of the British Empire and on the world stage. More Australians and New Zealanders died in France in 1916 to 1918, but Gallipoli was first and for that reason is still special. In Turkey, the Gallipoli campaign is remembered as an important step in nation-building. It is particularly remembered as the place where army major Mustafa Kemal gained recognition as a leader—he was the first president of Turkey from 1923 to 1938, during which time he embarked on
modernizing reforms. At Gallipoli, Kemal and his fellow soldiers resisted the Allied imperialists successfully, although in the early 1920s the memory of Gallipoli would be overshadowed by events that were even more significant for Turkey's nationhood: Kemal's success in driving out the British, French, Greeks, and Italians.

In January 1916, the Allies recognized that they had been defeated by the Ottoman army. The Allies gave up on trench warfare at Gallipoli and evacuated the peninsula. This was not the only defeat for the Allies in the Middle East. In the Ottoman territory of Iraq, then still called Mesopotamia, the Ottomans inflicted what was, in some ways, a worse defeat on the British.

The British had two reasons for being interested in Iraq. In the years before the war, the British navy, led by Winston Churchill, began to convert its battleships from coal to oil. Oil-powered engines were capable of greater speeds, and speed, as we have seen, was a principal goal of the British navy—in designing battle cruisers, the admirals had even been willing to sacrifice armor for speed. There was another sacrifice involved in the switch from coal to oil: plenty of coal was produced in Britain itself, while oil supplies had to come from sources overseas. Depending on oil from overseas ran the risk of it being cut off by hostile powers. The large oil fields of the day lay in the United States, the Dutch East Indies (Indonesia), and the region around the Caspian Sea. It would be difficult for the British to secure access to these sources. Oil exploitation had only just begun in the Persian Gulf during the years before the war. The oil fields on the southern, Arab, side of the Gulf were not yet discovered, but it was then at least becoming clear that there was abundant oil on the northern shores, in Persia (Iran). Persian oil was starting to be exploited by the Anglo-Persian Oil Company, which had obtained a concession from the weak Persian government. The Persian government was so weak, in fact, that in 1907 Russia declared a protectorate over northern Persia and Britain declared a protectorate over the southwest. The British protectorate was managed by colonial officials from British India, who supported the development of Anglo-Persia’s large refineries on the offshore island of Abadan. When Churchill began to build oil-burning battleships, he took steps to secure this oil supply for Britain. In 1915, Churchill persuaded the British parliament to acquire a majority share in Anglo-Persian. When the war broke out, Churchill was keen for the Indian government to take steps to secure the oil supply from Ottoman attack.

Concerns about oil were not the only motive for the British invasion of Iraq. Oil and battleships were bound up with British imperial power during the war, a power that was under threat in the most important British colony, India. The Indian government had special concerns. A significant proportion of India’s population was Muslim and disinclined to fight against fellow Muslims in the Ottoman Empire. To complicate the picture further, the figurehead Ottoman sultan, Mehmet V, was the caliph—the successor of Mohammed and leader of all Muslims. When the Ottoman Empire joined the Central Powers and went to war against the Allies, Mehmet V called for all Muslims in British, French, and Russian territory to rise in a holy war, or jihad, against their rulers.

The call for a jihad failed but British administrators were conscious of the need to maintain British prestige when it came to the war effort against the Ottomans. British defeats would not only play into the hands of propagandists from the Central Powers. In prewar India there had been a rising tide of nationalism. Few Indians called for independence yet, but many Indian leaders hoped for greater self-government. Their cause would be strengthened by British defeats as well as by pleas for help from India.

Concerns about prestige, coupled with the desire to secure an oil supply, persuaded the British cabinet to request that India send troops to attack the Ottomans in Iraq. In the fall of 1914, troops of the Sixth Indian Division secured southern Iraq, driving Ottoman forces out of the port of Basra and the town of Qurna, where the Tigris and Euphrates Rivers flow together. They also secured the oil fields at Ahwaz, Persia, the source of oil for a pipeline that ran to Abadan, near the Gulf. Reinforced by the Indian Twelfth Division in the early months of 1915, British forces in Iraq rose to nearly thirty thousand to form an army that had significant manpower but that lacked equipment and medical supplies. British officers led Indian soldiers in successful campaigns to take Amara, up the Tigris River, in June 1915, and to take Nasiriyah, up the Euphrates River, in July. In doing so, the Indian army not only had to overcome Ottoman defenders who had fortified along the rivers. They also had to find their way across the hostile landscape of southern Iraq, where floods, swamps, and heat impeded their advance. And finally, local Arabs rebelled against the Ottomans and the British, and engaged in sniping and ambushes against both sides.

Nevertheless, the capture of Amara and Nasiriyah and the securing of the oil fields at Ahwaz represented successes for the British at a time when the Gallipoli campaign was bogging down. Had the British stopped there they would have been overextended and subject to a Turkish counterattack. As it happened, the British general in charge of the Indian army in Mesopotamia, Sir John Nixon, with the support of the British government, decided to continue moving up the Tigris River toward Baghdad. His subordinate, Major-General Charles Townshend, led four brigades up the river in November 1915. At Ctesiphon, just south of Baghdad, Townshend's Indian force
encountered a larger Turkish force, which they fought to a standstill. With many of his officers and troops wounded and sick, Townsend withdrew south to the town of Kut, which he fortified in preparation for a siege.

Townsend was comfortable in such a situation. In 1895, as a junior officer, he successfully commanded Indian troops who were besieged at Chitral on India's Northwest Frontier. Yet Kut was different. Townsend hoped to be relieved by Indian units to the south, even though he knew that these were outnumbered. Townsend overestimated his food supply, and his Indian troops were unwilling to contemplate eating cattle and horses, which would have violated religious scruples. The Ottoman force was led by professional officers, including both Turks and Germans, who engineered excellent positions in order to prevent a breakout or an attack from the outside. And the environment around Kut favored the attackers: winter rains turned the banks of the river into a sea of mud, making it difficult for armies to move.

Townsend and his troops began to starve. On April 29, 1916, Townsend surrendered his force of thirteen thousand. This was the worst defeat for the British Empire since 1781, when Washington defeated Cornwallis at Yorktown. Townsend himself was treated well in captivity, living in a villa near Istanbul, but most of his soldiers were killed in forced marches that the Ottomans required them to make on their way to prison. Ottoman and German victories in the Middle East and the propaganda that went with them did not persuade many Indians to rebel against the British Empire, even as the empire's prestige suffered. And at least the oil remained secure.

The Allies only had a handful of successes in the Middle East during the early years of the war. In the first week of February 1915, an Ottoman army of twenty thousand marched across the Sinai Desert, one of the most hostile, arid environments on the planet, transporting several weeks' supply of drinking water as well as pontoons made in Germany to cross the Suez Canal and invade Egypt. British and Indian soldiers, supported by Allied naval vessels, defended the canal successfully, inflicting thousands of casualties on the Ottomans. Once again, modern weapons tended to favor defenders over attackers, even attackers who were well-led and well-equipped.

To the far north, the Ottomans were stopped by the Russians in an assault on another environmentally challenging area, the Caucasus Mountains. In the previous century, the Russians had displaced hundreds of thousands of Turks from their homes in the region. The Ottomans thought that an invasion would inspire a revolt against Russia, much as they hoped that they could inspire Indians to rise against the British. The Ottoman leadership attacked as early as possible in 1914—in December, in fact, in one of the coldest and snowiest parts of Europe. Nearly 150,000 Ottoman troops advanced on one hundred thousand Russians. As in other First World War campaigns, the defenders had significant advantages, but these were more pronounced by poor Ottoman preparation to transport adequate supplies for cold-weather fighting. In December 1914 and January 1915, Russian forces inflicted significant defeats on the Ottomans, who suffered approximately eighty thousand casualties, most of them to frostbite, disease, and hunger.

The Ottoman leadership had only themselves to blame. Their grand visions of retaking Turkish territory from the Russians came up against the realities of topography and climate. Yet instead of blaming themselves, the Ottoman leadership began to fix blame on the Armenians, a minority group of several million people who lived in the Caucasus on both the Russian side and the Ottoman side. On both sides, the Armenians had suffered repression. Some Ottoman Armenians were indeed fighting for the Russians but many were not. In any case, in the spring of 1915, when the Russian army halted its advance in the Caucasus, on account of the fighting in Eastern Europe, Ottoman soldiers began to massacre Armenians. Armenian resistance did not help; the looting, raping, and killing continued. In May 1915, the Ottoman government ordered the army to force Armenians to march south to Lebanon and Syria. Armenians who resisted were ordered to be killed, while many more died on the march. Many fled to Russian Armenia and died in transit. And those who survived the march to the south did not necessarily survive the war; they were kept in unsanitary camps that experienced severe shortages of food for the duration of the war. It is not known exactly how many Armenians lived under the Ottomans before the war and how many were killed by the Ottomans during the war. The standard figures were calculated by a famous historian, Arnold Toynbee, who worked for the British government during the war. Toynbee made a rough estimate that six hundred thousand Armenians died, six hundred thousand migrated, and six hundred thousand survived.

Historians and politicians have debated the extent of Armenian suffering. The Ottoman government called for forced migration and allowed its troops to kill hundreds of thousands. The massacres and forced migrations show the extent to which the war was continuous with the earlier era of imperialism. On both sides, in fact, the war stoked imperialist imaginations. Ottoman Turks hoped for a greater Turkey. Encouraged by the Germans, the Ottomans imagined that their troops could march far into Russian Central Asia, where Turkic languages are spoken, and from there pose a threat to British India. For their own part, the Germans began to imagine a greater Germany in the east, also taken at the expense of Russia. The Allies, for their part,
were just as imaginative. Not only did they take German territories in Africa, Asia, and the Pacific. The British, French, and Russians promised Austrian land to Italians who dreamed of "greater Italy." In March 1915, the British and French promised the Russians that, when the Ottoman were defeated, Russia could possess all of Ottoman Armenia, plus Istanbul and the waterways that connected the Black Sea to the Aegean. The next month, the British and French promised the Greeks and Italians that, in exchange for participation in the war, they could have large parts of land along Turkey's Aegean coast.

Ottoman victories at Gallipoli and Kut did not cause the Allies to reconsider their own imperialist tendencies. In the winter of 1915-1916, the Russian general Nikolai Yudenich, equipping his army well for winter fighting, captured the heavily fortified city of Erzum by maneuvering at altitudes as high as three thousand meters in the Karsagaz Mountains and outflanking the Ottoman defenders. Yudenich continued his advance through eastern Turkey, defeating a Turkish army at Elazığ by inflicting thirty-four thousand casualties. By the fall of 1916, when cold weather set in again, Russian forces occupied most of eastern Turkey.

As the Russians carved up the northern portion of the Ottoman Empire, the British and French aimed to do the same with the south. In May 1916, four months after the Allied defeat at Gallipoli and just a few weeks after the fall of Kut, a British diplomat, Sir Mark Sykes, and a French diplomat, François Picot, negotiated an agreement in which their governments divided the Ottoman Empire's Middle Eastern territories into British and French zones of "direct control" and "sphere of influence." The British would have Palestine and Iraq, while the French would have Syria and Lebanon. Both powers would work to supervise or control local Arab leaders. Never mind that, several months earlier, the chief British administrator in Egypt, Sir Henry McMahon, had promised an Arab leader, Sherif Hussein, that Arabs would govern these territories for themselves. The very same imperialist thinking that had contributed to the outbreak of the war—that vast territories could be conquered in spite of the realities of geography and technology—persisted throughout the war and even helped to prolong it.

Chapter Four

Intensification, 1916–1917

During the first two years of the war, soldiers and civilians on both sides suffered terribly. In 1916 it seemed that more suffering would be necessary; victory appeared to be a distant possibility. It was unlikely that colonial uprisings would destabilize the Allies. France and Britain had fought Germany to a standstill on the Western Front and stalemate prevailed on the Italian front, too. On the Eastern Front, movement was still possible, but it seemed unlikely that either Germany or Russia had the resources to knock each other out of the war.

Both sides lost hundreds of thousands of soldiers, yet, as the historian John Keegan points out, at the end of 1915 armies were bigger than ever. Russia replaced its casualties with massive numbers of conscripts. Russian industry expanded, too, providing rifles, cannon, and shells, as well as trucks, telegraphs, and airplanes, at such a pace that the army was now as well equipped as the German and French armies. In France, production rose, too, bolstered by the entry of women into the factory workforce. More Frenchmen could not be found to join the army, but the army undertook a reorganisation scheme that helped it to use its manpower more efficiently. The French could rely on the British for more manpower. The British had a small regular army of eleven divisions before the war. As the war went under way, the defense secretary, Lord Kitchener, encouraged men from the same towns, industries, or ethnic groups to form their own battalions. These were called the "pals battalions" and formed the core of Kitchener's "new army" of thirty divisions. In addition, Britain could now rely on twenty-eight