TOOLS OF WAR

Instruments, Ideas, and Institutions of Warfare, 1445–1871

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The Pattern of Army Growth, 1445–1945

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FROM THE DEBUT of firearms in the late Middle Ages to the detonation of atomic weapons in 1945, no military development in Western Europe rivaled in importance the growth of armies. This growth multiplied the costs of war, compelled states to centralize, spawned huge civil bureaucracies, unified peoples, altered social classes, bankrupted states, precipitated revolutions, and caused the rise and fall of great powers. In short, it shaped history.

While one brief essay cannot detail all the effects of military expansion, it can sketch the pattern of growth. In addition, this chapter reflects upon the roles played by the instruments and ideas of warfare in delineating the most fundamental institutional development of the half-millenium, 1445–1945. The curve drawn here outlines a rationale, beyond those based on industrial technology, for centering the discussion in *Tools of War* from the mid-fifteenth to the late nineteenth century. During that era, a particular quality and magnitude of growth provided a background, and at times a motif, for apparently diverse aspects of military history.

The French Case Study: Counting Heads, 1445–1945

Consider the growth of the French army as a concrete case study of military expansion. While the French pattern was unique to France, it nonetheless both illustrated and influenced Continental military trends. With the *Ordonnance* of 1445, Valois France was the first European state to establish a permanent standing army since Imperial Rome. The multiplication of France's armed forces over the next five hundred years can be usefully divided into four periods, dictated by the size and

character of military institutions and by their political environments. The first ran from the promulgation of the *Ordonnance* to the military expansion under Richelieu; the second, from 1624 through the onset of the French Revolution; the third, from 1789 through the end of the Franco-Prussian War; and the fourth, from 1871 to the end of World War II.

Several basic choices must be made when charting an army's growth over time. This author has elected to count all troops, not just those assembled in field armies. Full "paper" or legal strengths are usually reported without any attempt to discount or interpret them into "real" totals.[1] Also, when possible, gross numbers appear, not just those of forces "present under arms." Since figures reported here come from various authorities, they derive from different systems of calculation. Where major discrepancies exist between respectable sources, they are reported rather than resolved.

Also, in studying the expansion of French military forces it is important to distinguish the levels of troops maintained in peacetime from those marshaled for war. The comments that follow address peacetime and wartime figures separately for each of the four periods.

The First Period, 1445–1624

Remarkable stability in the size of both peacetime and wartime French force levels characterized the first, and longest, period.[2] Contamine estimated that the monarchy maintained a peacetime force of about 14,000 into the 1470s and kept an average of 20,000 to 25,000 on foot during the last quarter of the century, a figure inflated by Louis XI's short-lived attempt to maintain a peacetime army of 24,000.[3] It is hard to speak of real "peace" in the sixteenth century, but Ferdinand Lot stated that 28,000 troops remained after the conclusion of the Peace of Cateau-Cambrésis in 1559.[4] J. R. Hale has asserted that this was reduced to only 10,000 by 1562.[5] With the end of the Wars of Religion at the close of the century, Henri IV reduced the standing army to 8,500.[6]

Wartime levels during this first period probably did not top 55,000. Contamine concluded that French forces stood at 40,000 to 45,000 during years of major campaigns in the late fifteenth century.[7] Lot calculated that troops marshaled for the invasions of Italy numbered 30,000 to 40,000. He discounted the claims that Henri II assembled 60,000 to 80,000 for his campaign of 1552, setting the number at the far more modest level of 38,000.[8] Henri IV may have had as many as 50,000 troops in the field during the last phase of the Wars of Religion.[9] Sully reported that even when Henri was secure on his throne, and had amassed a sizable war chest, he planned to assemble no more than 54,600 for his great war in 1610.[10]

Number chasing for these early centuries is a risky enterprise, but it seems to reveal little if any growth in either peacetime or wartime levels; if anything, peacetime figures from the late fifteenth century probably exceeded those of the early seventeenth.

The Second Period, 1624–1789

Beginning in the 1620s, and greatly accelerating with the entry of France into the Thirty Years' War in 1635, the army experienced massive and rapid growth that stabilized at new higher levels in the 1680s. One scholar states that after the Peace of Alais in 1629, French peacetime forces stood at only 12,000.[11] Yet, in 1666, a generation later, Louvois reported peacetime levels of 72,000, already several times greater than any previous figure.[12] But this soon jumped even higher, to 131,000, after the end of the War of Devolution in 1668.[13] This impressive peacetime level is somewhat misleading since the French did not demobilize after the War of Devolution. Louis XIV longed for revenge against the Dutch as soon as possible, which he achieved by attacking them in 1672. In any case, from the late 1670s through the 1780s French peacetime troop levels hovered around 150,000, sometimes dipping below 140,000 and occasionally exceeding 160,000.[14]

Wartime figures also soared to unprecedented heights and remained there. During the crucial war year of 1636, one official projection for the army of Louis XIII topped 200,000 troops; another for 1640 listed 196,000.[15] Richelieu claimed that there were 180,000 troops in the king's service.[16] Commonly, for much of the war the figure of 150,000 is reported by contemporary sources and echoed today.[17] This last number seems a reasonable median for official wartime strength, even though it undeniably overstates the reality; in recent research Kroener and Parrott argue that for the era of the Thirty Years War, such paper figures must be cut in half to arrive at the number actually present for service.[18] The brief War of Devolution (1667–68) put roughly 134,000 French troops under arms.[19] Over 279,000 troops took the field at the height of the Dutch War (1672–78) according to contemporary sources.[20] The tighter character of military administration under Louis XIV gives greater credit to these later official numbers.

From the later reign of Louis XIV until the Revolution that dealt his world a deathblow, troop strength repeatedly approached 400,000 for major wars. One study put the number for the War of the League of Augsburg (1688–97) at about 396,000 and set the wartime peak of the War of the Spanish Succession (1701–14) at just over 392,000.[21] The War of the Polish Succession (1733–38) was a minor affair that brought the French army to a strength of only 205,000;[22] however, the War of the Austrian Succession (1740–48) pushed the level back up to roughly 401,000.[23] The Seven Years' War (1756–63) fell short of such military expansion, as only 330,000 troops stood by the colors during that conflict.[24]

The Third Period, 1789–1871

The third period poses new problems for the historian trying to encapsulate French military development. Not the least problem is the fact that this era witnessed six, seven, or eight distinct regimes, depending on how one chooses to count them. It is necessary to begin by considering the turbulent epoch of the Revolutionary and Napoleonic Wars in its own right. On paper, the army reached the extraordinary peak of a million troops during the summer of 1794.[25] But this unique assembly of troops did not really set a standard for wartime figures for 1789–1871. In fact, this level soon fell precipitously; Minister Petiet stated that the army had fallen to 484,000 by August 1795, to 396,000 by August 1796, and to 382,000 in 1797.[26] Napoleon never matched the number of French troops mobilized by the Republic of Virtue; the French contingents of his Imperial army seem to have stood at no more than 600,000 to 650,000 at any one time.[27]

Only after Waterloo is it possible to speak of a true peacetime army again. In the aftermath of the final Napoleonic defeat, the army collapsed to a level of 75,000 by January 1816, but the military law of 1818 jacked up its legal peacetime level to 240,000.[28] In urging the adoption of the 1832 military law that bears his name, Marshal Soult stated that the army stood at only 224,000.[29] The Soult Law stipulated an army of about 300,000, and a military ordinance of 1841 raised that level to 334,000.[30] Official figures, however, reported the number as higher, averaging 352,000 from 1831 to 1847.[31] The average for the periods of relative quiet during the Second Empire rose to 412,000.[32]

It is more difficult to arrive at a clear comparison of wartime highs, since no conflict between Waterloo and the Franco-Prussian War posed a lethal threat or lasted long enough to warrant full mobilization for war. Under the July Monarchy mobilization projections were based on putting 500,000 men into the field.[33] According to the Delbousquet report, the army reached about 590,000 at the peak of the Crimean War and 540,000 for the 1859 Italian War.[34] Mobilization tables for the early 1860s claimed that with its reserve the French army could have put 625,000 to 650,000 men into the field.[35]

On the eve of the Franco-Prussian War, Napoleon III pushed for a major military reform intended to double the number of troops that could be mobilized. However, the resultant 1868 Neil Law accomplished little.[36] It intended to raise the force of the peacetime army and expand the reserve, so that by 1875 the mobilized army would have amounted to 800,000, backed by a Garde Mobile of 500,000.[37] However, these gardes could claim only minimal training.[38] In 1870, when war came, the number the French put in the field fell far short of Prussian levies. The potential 1,100,000 was largely fiction, counting as it did the useless Garde Mobile. The most reliable figure is 567,000, a total reported in an official troop report of 5 July 1870.[39] It may not be fair to judge what forces the French state could have produced by reference to the Franco-Prussian War, since it ended too soon to test the government's capacity to mobilize on a Revolutionary or Napoleonic scale.

The Fourth Period, 1871–1945

Immediately after the Franco-Prussian War, the peacetime level set by the fairly conservative 1872 military law stood at about 400,000, with a five-year service term. However, military laws of 1889 and 1905 reduced service to three years and then to two, raised the number of troops in uniform to some 500,000 by 1911, and expanded the reserve.[40] In 1913 the term of service was lengthened to three years so that the French might increase their standing army to match that of the Germans. This created a force of about 731,000 in early 1914. After World War I, the French decreased the time in service required of conscripts to eighteen months in 1923 and then to twelve months in 1928. The size of the French army in uniform authorized by the law of 1928 fell to just under 524,000. About 450,000 actually served in 1933.[41]

With the reserve system in place, the difference between peacetime and wartime levels exceeded all previous levels. France mobilized some 3,580,000 men in the late summer of 1914, about four and a half to

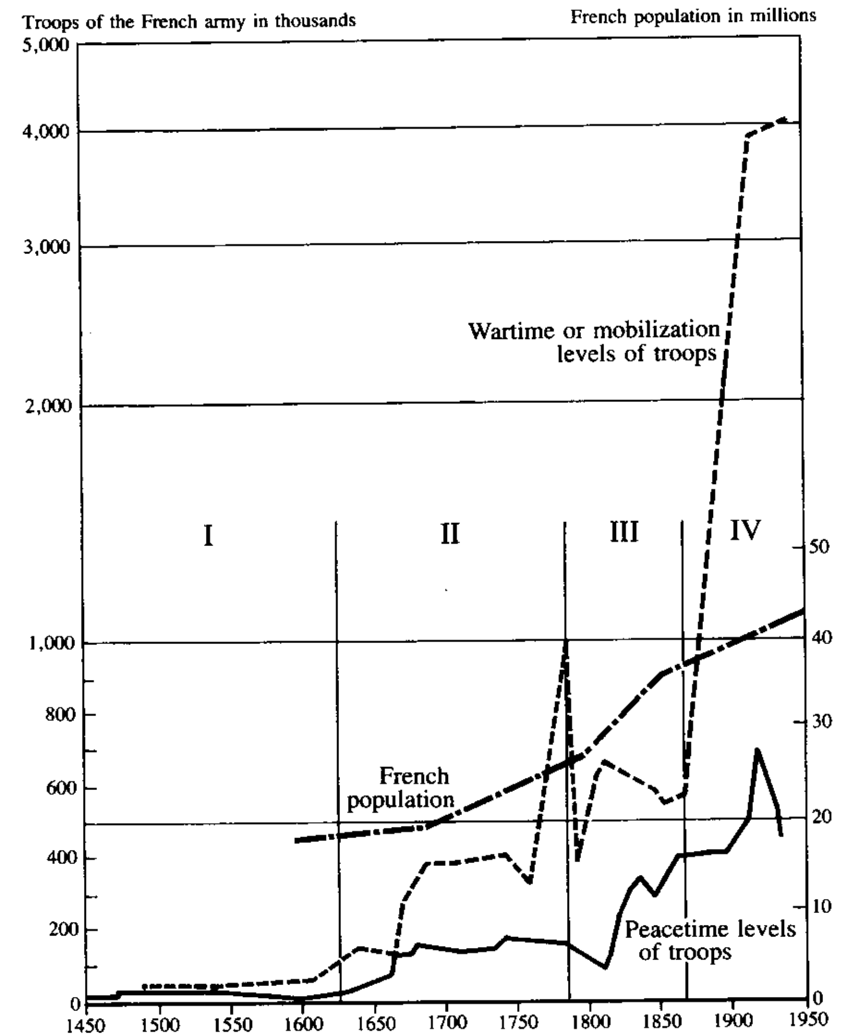
five times the number of troops in the standing army earlier that year.[42] In 1939–40 the French mobilized more men—at least 4,000,000.[43] Combat units stood in 110 divisions. The uniformed Free French forces that fought alongside the Allies never amounted to more than a small fraction of the numbers mobilized in 1940. In 1945, the largest French force, De Lattre de Tassigny's First Army, amounted to only two corps, totaling eight divisions.[44] While some credit the nonuniformed resistance fighters as the equivalent of fifteen more divisions, this figure is largely subjective.[45]

Characteristics of French Military Expansion

Between 1445 and 1945 the scale of armies changed dramatically. This expansion seems more inevitable than surprising, considering the great technological, intellectual, institutional, and demographic developments that transformed Europe during these five centuries. The figure at right summarizes the growth of the French army over half a millennium.

The first period set peacetime numbers in the range of 10,000 to 25,000, with wartime figures of 30,000 to 55,000. While historians continue to offer differing estimates of troop strengths, one thing is clear: there was no significant expansion over this era of more than 170 years. By contrast, the second period brought an unprecedented rise of force levels. In percentage terms, this expansion would never be equaled again. After 1678, the peacetime standing army marshaled about 150,000, to be multiplied to 400,000 in wartime. This constituted a 700 to 1000 percent increase over base levels set between 1445 and 1624. So extraordinary was this expansion that it qualifies as the French phase of the military revolution.[46]

The confusing third period saw average peacetime levels climb to 352,000 to 412,000, while wartime highs under Napoleon I and Napoleon III did not exceed 650,000. The spike of a million men in the summer of 1794 proved to be an anomaly. Therefore, while the third period brought increases, they fell into the range of only 150 to 250 percent. These increases appear more modest when one realizes that from 1830 on the army carried major colonial responsibilities—especially in North Africa—not borne under earlier regimes. So, for example, the troops marshaled to fight the Franco-Prussian War included 50,000 troops who garrisoned Algeria.[47] With its capacity to



THE GROWTH OF THE FRENCH ARMY, 1445–1945

call upon a mass army, the Third Republic mobilized as many as 4,000,000 soldiers for the world wars of the twentieth century. This amounted to a rise of 600 to 700 percent in initial wartime strength. However, peacetime figures rose much more modestly to average about 400,000 to 600,000, a comparatively low 150 percent, at the most, of those maintained in the previous period.

Just how typical is this story of expansion? While its exact pattern of growth is unique to France, the timing and proportion of expansion were still part of a larger European phenomenon. The Russian army only reached the Western European scale under Peter the Great. During the eighteenth century, its wartime troop figures grew from about 200,000 in the early 1700s to 400,000 by 1800.[48] To resist Napoleon's invasion, the Russians marshaled only about 410,000 troops.[49] These forces continued to grow as Russia became the most populous state in Europe. By 1826 its active forces and reserves numbered over 850,000 on paper, and they remained at that level until the Crimean War.[50] These troops were long-service conscripts, serving twenty-five-year hitches, which were later reduced to fifteen years; Russian reserves were comparatively small.[51] In reaction to the Crimean defeat and later Prussian victories, the Russians labored to create a mass reserve army on Prussian lines. In 1874 the service term was reduced to six years.When war broke out in 1914, the tsar mobilized more divisions than either France or Germany.

The Austrian army had much the same proportions in the nineteenth century as the French army. The Austrians possessed only a small reserve. Regular forces were similarly composed of long-service professionals recruited through conscription; however, before 1845 the number of years of required service varied. German areas within the Austrian Empire sent their sons for fourteen years' service; Hungarians, for life. After 1845 service was standardized at eight years.[52] In 1813 the Austrians put 550,000 men in the field against Napoleon; they did not better this against the Prussians in 1866, when the most charitable figures add up to only 528,000, mobilized in seven weeks.[53] They adopted the mass army concept with reforms that began in 1868.

A comparison of the French case with that of France's ultimate rival, Prussia/Germany, reveals some parallels and significant differences. Of course, the Prussian/German example is more complicated than the French case because state boundaries and resources changed so greatly over time. From quite different beginnings, Prussian forces also swelled in the seventeenth century under the Great Elector, to a standing force of 31,000.[54] While the French army stabilized in the eighteenth century, Prussian battalions continued to multiply. Frederick William I began with an army of 38,000, which he doubled to 80,000 by 1740.[55] Under Frederick II, Prussia added Silesia and also Polish territories and doubled the size of the standing army again to 162,000.[56] At a time when the

French maintained a standing army of 350,000, the restored Prussia of the 1830s and 1840s maintained one of 200,000.[57] While the reformers of the early nineteenth century established the principles of conscription and large reserves, the Prussian army had not yet realized the potential of this system because the state called up only part of the annual contingent of potential recruits and was still relatively limited in resources. Prussia raised 355,000 men to fight Austria in 1866—a sizable force, but still one of only Napoleonic scale.[58] German forces mobilized to fight France in the years 1870–71 were much larger, totaling nearly 1,200,000.[59] With the creation of the German Empire came still greater numbers. The standing army totaled about 400,000 in 1875 and grew to more than 750,000 in 1913.[60] In 1914 Germany mobilized a massive force of about 3,800,000 troops.[61]

Thus the growth of the French army from 1445 to 1945 reveals the directions and dimensions of a Continental trend; it also says something about the dynamics of phenomenon. After the creation of the standing army in 1445, each of the major upturns in army size was associated with a major political change. It could be argued that even the acts that created Europe's first permanent army in the mid-fifteenth century constituted a political watershed. Certainly the grant of a regular tax base and the founding of a standing army both recognized and extended the growing power of the Valois monarchy. Nevertheless, Contamine argues, the forging of the *compagnies d'ordonnance* is better seen as an attempt to regularize the organization of forces already existing at the end of the Hundred Years' War than as an attempt to bring an army into being.

The military expansion at the start of the second period, beginning in the 1620s and accomplished by the 1680s, created the absolutist state. Through a long administrative, fiscal, and political process, the French state struggled to support armed forces seven to ten times greater than any it had maintained in the past. To do so the Bourbon monarchy sponsored a dramatic political metamorphosis under Louis XIII and Louis XIV. In fact, even after the forging of the absolutist state, the monarchy's financial resources never equaled the needs of its armed forces, and war continually threatened the state with bankruptcy.

In 1789, the Revolution—largely brought on by the fiscal crisis of the monarchy—changed the given assumptions and methods of French government and society, thus making possible the military expansion

of the third period. Though much is said of the revolutionary élan of the mass army that rose to defend the new France, the emotional peak of revolutionary enthusiasm could not endure for long. From a military point of view, the most lasting accomplishments of the Revolution were the elimination of traditional restraints upon the central government's ability to tap the resources of France, the exploitation of nationalist sentiment, the introduction of regular conscription, and the democratization of the officer corps. Interestingly, while regimes changed in political assumptions from Napoleon I through Napoleon III, they maintained very similar concepts about the nature of military institutions, favoring long-service professional forces composed of volunteers and conscripts, augmented by modest reserves in wartime. Changes in regime and political principle did not always bring change within military institutions.

With some reluctance, the French fashioned the Third Republic in the 1870s, ushering in a new political and military period based on new principles. The unrevolutionary Third Republic gave France what the revolutionary First and Second Republics failed to provide—the Jacobin ideal of an army based on a massive citizen-reserve force. Faced with the example and threat of Imperial Germany before them, the French redefined the regular army as a training organ, designed to produce a great reserve force at the outbreak of war. They created a nation at arms—not simply as a short-lived reaction to crisis, as in 1792–94 or 1870–71, but as an ongoing reality.

So in each case, the creation of a larger army did not come about as the result of just doing the same but more so. New levels of military force implied new assumptions about the army and new principles of government.

Influences Compelling the Expansion

"How" is a much less ambitious interrogative than "why." While a thorough examination of why the army grew exceeds the scope of this essay, some probable causes demand at least a brief discussion.

An obvious explanation for growing armies might simply be that they result from a growing population. The French increased their numbers nearly threefold between 1600 and 1950, from roughly 18 million to 42 million.[62] Surely that is an important part of the story, but not all of it. For while higher numbers of people make it much easier to field greater armies, they do not necessarily create greater

armies. The largest percentage increase in French military force came at a time when the population remained relatively stable, or may even have declined somewhat, in the mid-seventeenth century, while the impressive population growth of the mid-nineteenth century saw only a modest rise in the troop levels of the French army. And even if one argues plausibly that a time lag existed between population growth and later military expansion, or that multiplying battalions fed on marginal population increases rather than on total sums, this still does not account for the exact pattern of military expansion in France. Increases would seem to have more to do with politics than with population.

Could it be that technology—the tools of war—imposed military expansion? Much of the debate over the military revolution, 1560–1660 (a term coined by Michael Roberts) revolves around the growth of armies and the rationale behind it. Geoffrey Parker has argued forcefully that the spread of modern fortifications in the sixteenth and seventeenth centuries imposed larger armies on the great states of Europe. Briefly put, he contends that the polygonal fortresses designed according to the *trace italienne* came to dictate the course of wars in this period and that the attack or defense of such works required huge numbers of troops. In this volume, Simon Adams rebuts Parker's assertions. First, Adams questions the timing of military expansion, suggesting that while Spain's armies grew to maintain the Spanish school of strategy in the sixteenth century, for most of Europe, expansion only became clear in the latter half of the seventeenth century. Second, he insists that the political goals of rulers during the Thirty Years' War—not fortresses—required the unprecedented scale of forces. Bourbon policy, for example, not the existence of new fortifications, drove up French army size after 1635. So far as army expansion is concerned, Adams concludes that the instruments of war exerted less influence than ideas did.

To be sure, the instruments of war clearly set limits on army expansion, and new technologies often opened up new possibilities. While the attempt to explain military growth during the seventeenth century by appeal to supposed improvements in the European road system hits wide of the mark, roads—and later, railroads—played a major part in warfare. Railroads made it possible to marshal, deploy, and sustain armies in the millions by the twentieth century. But it is worth noting that the concept which inspired the mass army—the notion of an army based on great reserves, to be trained in peacetime and mobilized for

war—came out of the Napoleonic era. Railroads alone did not transform warfare. Though a railroad network covered France by 1848, force levels remained constant from the 1830s into the 1870s. Showalter argues that even the first masters of the military possibilities of the railroad, the Prussians, still had to proportion their armies in relation to other means of transportation through the Franco-Prussian War.

Administrative efficiency also is put forward to account for the growth of armed forces. Certainly, mushrooming troop levels required larger and more active bureaucracies to support them. In no case was this truer than with seventeenth-century French military expansion. Louis XIV's great ministers of war, Le Tellier and Louvois, justly deserve mention alongside Condé, Turenne, and Luxembourg. However, it is by no means clear that administrative capacity caused numbers to multiply as they did. There is good reason to believe that the converse is true—that needs imposed by a growing army generated the mixture of power and bureaucracy known as absolutism. The robbery and rapine the army inflicted on the French people, particularly during the Thirty Years' War, testified to the fact the army grew more rapidly than the financial and administrative apparatus designed to equip, feed, and house it.[63] To satisfy their unmet needs, soldiers extorted money, food, and lodgings from the unfortunate subjects of the very king they served. At least into the 1680s, the bureaucracy of the fledgling absolutist state seemed forever to be trying to catch up with the demands imposed on it by an army of unprecedented scale.[64]

This brings the argument back to the point raised by Simon Adams—the necessity of viewing the military revolution in its political context. Styles of warfare and the proportions of armies changed to meet political goals. In other words, the role of ideas must be given heavy emphasis. An understanding of the growth of the French army during the second period requires a consideration of the foreign policy assumptions and goals of the Bourbon monarchy. Louis XIV's bid for territorial aggrandizement and European hegemony demanded an army of 400,000. A century later, Napoleon's imperial designs required a force of 650,000. For the period of greatest numerical increase, population, technology, and government provided a context in which concepts of political goals and military institutions played crucial roles. Competition between states was also a factor: for example, France set the standard for the seventeenth century, but in the period 1871–1914 she fashioned her army and set its proportions to match those of

Germany. Through international competition, the *goals* of a leading state impose that state's *means* on its rivals. And decline, once raised to a new level, becomes difficult and dangerous in a kind of Clausewitzian ratchet effect.

Composition of Forces

Major changes in force levels usually bring changes in the social composition of armies. Choices concerning the number of men who will be called to arms require decisions about the kind of men they will be. No issue of military expansion can be more complex or have more enduring consequences in military, political, and social spheres.

French military expansion during the early years of the Revolution provides a particularly concrete example of the link between army growth and the transformation of troop composition. The regiments of Louis XVI were composed of common soldiers from the lower ranks of society, who, while not the total outcasts they are frequently portrayed as, were castoffs of the economy. Their aristocratic officers saw themselves as socially superior and increasingly professional. In 1781, the aristocrats won an important victory with the Ségur law, which barred both non-nobles and those who had recently purchased a patent of nobility from wearing an officer's epaulet.[65]

Revolution brought with it a redefinition of the soldier, the officer, and military duty itself. Once condemned as insensitive tools of an autocratic regime, soldiers now won praise as inspired defenders of a new society. In short, they became model citizens. The idea of the citizen soldier—and its corollary, that every citizen bore the duty to serve as a soldier in times of crisis—made the *levée en masse* possible. Technology did not impose or encourage this decision.The stakes were high enough to generalize the selection of soldiers to the entire male population of suitable age, health, and family status. Even before war broke out, the barriers that excluded non-nobles from officers' commissions fell. Egalitarian principles of the Revolution dictated this measure. As the army greatly exceeded ancien régime proportions, the new social definition of an officer allowed the Republic of Virtue to provide a sufficient number of leaders for an army of a million men.

In his essay, Dennis Showalter draws the contrast between the army of Frederick the Great and that of the early nineteenth-century reformers in a similar fashion, describing the eighteenth-century Prussian soldier and officer in much the same terms as those that apply to the

French. The new army of the reformers was also linked to a liberal redefinition of the soldier. And while the barriers against non-noble officers did not disappear as they did in France, they were significantly breached at the height of military reform in Prussia. Of course, Prussian military reform came directly as a result of the French threat.

While the transformation of the French military during the Revolution came as a product of social upheaval, history can reverse that causal link. Creation of the middle-service cavalry in Russia, as described by Richard Hellie in his essay, exemplifies the social impact that the creation of new military forces can exert. He describes how the need to produce the maximum number of cavalry in the late fifteenth and sixteenth centuries led to the purchase of military service through grants of land and labor. Peasants became serfs as a consequence of this military bargain. This choice of weapons and warriors put its stamp on peasant social structure until 1906.

Turning to Asia, Bruce Lenman demonstrates that the key to creating an armed force large enough to extend British control over all of India lay in a dramatic redefinition of who would be a soldier. While the British gained a foothold in India through naval power, transported European troops, and clever diplomacy, the domination of the subcontinent demanded larger forces than could be imported across the oceans. Although the British held a great technological advantage at sea, on land the East India Company did not conquer simply through overwhelming superiority in terms of the instruments of war. Native armies eventually possessed muskets and artillery to match their European foes. Lenman describes how a great army was forged in the late eighteenth century by raising regiments of sepoys. Only by marshaling the financial and manpower resources of Bengal could the British conquer and control the Deccan.

The effect of personnel choices can extend beyond the creation of larger armies; they can change the way an army—or navy—fights. William Maltby discusses how a change in the origin and character of English naval officers encouraged the choice of sailing-ship tactics in the seventeenth and eighteenth centuries. In its drive to create a larger and more controllable fleet, the English government turned away from the earlier merchant sailors, or "tarpaulins," to captain its ships, promoting instead gentlemen officers, who may have mastered less of the mariners' trade but who were more obedient and better versed in the literature of the military art. This, Maltby argues, was a major factor

in tipping the balance in favor of line-ahead tactics, which though less decisive than melee fights, required a lower level of seamanship. Consequently, he denies that the line ahead inevitably resulted from naval technology in the era of sail.

This author will contend that the French "revolutionary attack" developed in a similar manner, as a consequence of a change in the personnel and character of the officer corps. This combination of skirmishers and assault columns did not evolve simply in response to the massive influx of untrained soldiers, as has long been believed; the "revolutionary attack" accorded well with the spirit of the citizen-soldiers who employed it in battle.

Growing Armies and Military Professionalism

The growth of armies influenced the development of military professionalism, but their relationship is not a simple one. Even the very term "professional" belies easy definition. If by "professional" all that is meant is long service, then it is difficult to argue that the *compagnies d'ordonnance* were any less professional than the regiments of Louis XV. However, if the definition stipulates a special educational preparation, value system, and corporate sense, then the soldiers of the eighteenth century were clearly more professional than their predecessors.

To gain some understanding of the problems involved in hasty generalizations, briefly consider certain aspects of professionalism within the French officer corps. Captains in the smaller sixteenth-century army functioned much as independent entrepreneurs. The absolutist state exerted greater control over, and demanded increased proficiency from, its commanders, since the growing number of troops and the higher level of skills typical of seventeenth-century warfare made this necessary. The process was aided by the fact that larger standing armies fostered professionalism simply by providing steady careers for higher numbers of officers. In addition, the technical needs of artillery and of engineers encouraged the creation of a series of military schools in the eighteenth century.

Yet at the same time, the need to increase to unprecedented wartime strengths periodically meant that many individuals without training or commitment received commissions during the late seventeenth and eighteenth centuries. They returned to civilian life upon demobilization. The purchase of commissions gave the advantage to the wealthy, not

the skilled, particularly during periods of rapid mobilization. This led to conflict between aristocratic professionals and individuals they viewed as rich parvenus. Eventually the Ségur Law of 1781 gave victory to the dedicated noble officers of old families.

The Revolution swept aside the class prejudices of the ancien régime officer and attempted to substitute the goal of a citizen army. But the stress of war encouraged a new professionalism. The combination of noble emigration and military expansion opened slots for an enormous number of new officers. Most often these men came from the cadre of noncommissioned officers who had served in the ancien régime. Some rose through the ranks at a meteoric rate, but most spent considerable time in grade. Seniority and selection by brother officers replaced election by the rank and file of the early Revolutionary days.

The smaller long-service armies of the period 1815–70 provided a good base for professionalism. The nobility did not reestablish its former dominance. Military schools (Saint Cyr and the Polytechnique) prospered, and a substantial percentage of officers came up from the ranks. There was a certain self-perpetuating character to the officer corps, at least under the Second Empire.[66]

After 1871 the reliance upon great reserve forces both promoted and corroded aspects of professionalism. On the one hand, the development of a general staff and of advanced military education raised the technical character of the higher echelons. On the other hand, the dependence upon reserves meant that long-service officers were now to be seconded by part-time amateurs on an unprecedented scale. While formal training and compliance with certain professional values could be required of part-timers, they could not be expected to hold the same values as soldiers who made the military an exclusive career.

The Mobilization of Forces to Wartime Levels

Charting the growth of the French army from 1445 to 1945 drives home the point that a study of military expansion must confront the difference between peacetime and wartime figures. Obviously, troop strengths during war far exceed the numbers maintained by the standing army in quieter times. An attempt to maintain forces at wartime peaks between conflicts could only have bankrupted the state. Less obviously, peacetime and wartime curves describe separate patterns; that is, they can rise or fall at different rates. This contrast becomes particularly

apparent when comparing the third period, with its emphasis on long-service professional soldiers, and the fourth period, with its emphasis on short-term soldiers and large reserves. The varying distances between peacetime and wartime figures pose an important question: how does an army jump that gap, expanding from its peacetime to its wartime footing? The answer hinges on pivotal conceptions of an army's nature and function.

The peacetime army of ancien régime France performed several functions. Troops garrisoned towns and fortresses—a role with both military and civil dimensions. In the eighteenth century each regiment changed its garrison at least once a year.[67] Political rationale would seem to explain this constant rotation: changing posts broke the bonds between units and localities, while the resultant moves regularly filled the French roads with an impressive show of military force. This was valuable for an army intended to buttress the power of civil government administration. Beyond its double-edged garrison role, peacetime forces provided the only troops who would be ready to meet the challenge of warfare at the outbreak of hostilities. Lastly, the peacetime army served as a repository for the skills that had to be imparted to the newcomers who filled the wartime ranks.

Relying on long-service volunteers, the Bourbon army lacked a competent trained reserve which could be immediately added to standing forces at the onset of war. From 1688 to the Revolution, the French experimented with both conscription and reserves through the institution of the *milice*. Earlier regimes had attempted to raise effective national militia forces—witness the fifteenth-century *francs-archers* and the sixteenth-century legions—but the *milice* proved to be much longer-lived than these predecessors. Chosen by lot and compelled to drill in local units during peacetime, *miliciens* resented service. The role and organization of the ill-prepared and unpopular *milice*—which stood at 40,000 to 60,000 during periods of peace in the mid-eighteenth century—changed repeatedly during its hundred-year history.[68] By the end of its existence, the *milice* had become an organized semitrained pool of recruits to be integrated into regular regiments during wartime.[69]

Under these circumstances, it took considerable time for the army to expand from peacetime to wartime proportions. Accepting the average of 140,000 to 150,000 for a peacetime baseline and 400,000 for a wartime high, force levels had nearly to triple after war began. The army expanded by increasing the number of men in existing companies

and battalions, by adding new battalions or squadrons to existing regiments, and by raising entirely new, and generally temporary, regiments. All this consumed months and even years. For example, just before the War of the Spanish Succession, French forces stood at 140,000, and Louis ordered the first new levies in October 1700. By January 1702, the king's army stood at 220,500; during the remainder of that year one hundred new regiments appeared on the army list. However, the French army probably only hit the wartime high of 392,000 in 1709 and 1710.[70]

While the French pattern exemplifies the primary Continental means of expansion, it does not cover the entire repertoire of mobilization in Europe and its colonies. During the eighteenth century, the British created forces by enlisting sepoys in India and by hiring entire German regiments for warfare in America. The thirteen American colonies evolved their own unique system for moving from peacetime to wartime footing. Don Higginbotham characterizes it as a semiprofessional tradition. Although Americans boasted of them, their militias were stay-at-home units intended for defense or for civil control, as in the case of slave patrols in the South. Before their revolution, Americans moved to a war footing, not by calling out the militia, but by creating full-time units for particular campaigns. They were led by officers who learned their craft through what Higginbotham terms the "tutorial system"—officers who returned to civilian life at the end of the war. The only professional standing forces in peacetime were British regulars. Still, the militia so captured the popular imagination that it became a potent mythology blinding Americans to the reality of their peculiar mobilization.

The Revolutionary and Napoleonic eras ushered in the age of large-scale conscription and mass reserves to Western Europe. While the French Revolution brought full-scale conscription to Western Europe, the high level attained in the summer of 1794 was the product of the extraordinary revolutionary measures of the *levée en masse*—measures that would not be repeated. Without an ongoing system for levying new recruits to sustain it, such a high tide of manpower was bound to ebb. It was this decline that called forth a more regular system of conscription in the Jourdan Law of 1798. Napoleon relied on conscription to complete his ranks and raised impressive numbers, particularly during the later years of his dominion. Between 1800 and 1814, he raised some 2,000,000 Frenchmen.[71] Between 1815 and 1870, military legislation continually adjusted conscription to produce desired yearly levies. The system was employed to compel unlucky young men to sign on for long terms of enlistment. Thus, it became a recruiting device for a professional army, not a citizen army in the revolutionary sense. There was a significant reserve, but it amounted to only about half the strength of the standing army at best. Thus a standing army of 410,000 in 1867 was to be backed by a reserve of about 212,000.[72]

It is ironic that the French invention of conscription was better maintained and perfected by Prussia, France's archenemy. The reform era endowed the Prussian military with a short-service conscript army composed of men raised by conscription who then passed on to the reserves and eventually the Landwehr after active service. As Showalter demonstrates, this accorded with a political agenda as well as with military theory. This involved a redefinition of the function of the standing army. Not only was it seen as fulfilling the duties associated with a "force in being," it was also viewed as a training ground for the men bound to two or three years' service in its ranks. The wartime army could multiply in size severalfold by mobilizing the army reserve and calling out the Landwehr. The Landwehr may have proved a faulty institution in the long run, but it set the principle for a new style of army—a style copied by others after the Prussian victories of 1864–71.

It took a number of years for the French to restructure their manpower policy after the Franco-Prussian War. The long-service army died hard in France. By 1889 the French Third Republic came to rely on a pool of reserves to greatly bolster active troops in wartime. This explains the great contrast between peacetime and wartime figures in the fourth period. Thus in contrast to the period 1624–1789, when the wartime army was only 250 or 300 percent larger than the peacetime force, or that of 1789–1871, when mobilized forces were to stand at only about 150 to 200 percent of the standing army, wartime mobilized troops levels were to be 600 to 800 percent of peacetime strength.

Conclusion

During the centuries between 1445 and 1871, officers and soldiers constituted the ultimate instruments of war, more so than the weapons they wielded. Authors of the essays in *Tools of War* repeatedly return to this theme. A discussion of the instruments, ideas, and institutions of warfare, therefore, must take into account the quality and quantity of men who marched into battle.

A pattern of army growth aids in delineating the period examined in this volume. After the decline of the Roman Empire, permanent military establishments did not exist in Western Europe until the *Ordonnance* of 1445. The companies it authorized constituted the first standing army. Succeeding centuries brought army increases, and the institutional changes that were fashioned by expansion promoted even further growth. Just as in the case of the industrial technology of warfare, the keys which were to unlock the gates to a very different future had been forged by 1871; however, the gates had yet to be opened fully. After 1871 Continental European states welcomed the concept of the mass reserve army, already pioneered by Prussia; thus World War I would be fought by armies numbering in the millions. Between those two milestones along the course of Western military history, the pattern of army growth marked a path along which military institutions were compelled to travel if they were not to perish.

NOTES

1. See John A. Lynn, "The Growth of the French Army during the Seventeenth Century," *Armed Forces and Society* 6 (Summer 1980), for a discussion of the merit of emphasizing "paper" figures as opposed to discounted estimates of men actually in the field. We will never know exactly how many men were at the front in past armies, but official paper figures at least give us an index by which we can compare the relative size of forces.

2. For a discussion of the sources to be used and the problems encountered in establishing troops strengths for the first three periods, see Lynn, "The Growth of the French Army."

3. Philippe Contamine, *Guerre, état et société à la fin du moyen âge* (Paris, 1972), 278–83, 286, 290–93, 298–301, and 317; Philippe Contamine, *War in the Middle Ages,* trans. Michael Jones (Oxford, 1986), 169–71. One has to wonder if this high figure includes forces for Louis XI's military venture in the Netherlands and Charles VIII's "Mad War," since the attempt by Louis XI to actually maintain peacetime forces of about 24,000 occurred only during the last two years of his life and was quickly abandoned at his death.

4. Ferdinand Lot, *Recherches sur les effectifs des armées françaises des Guerres d'Italie aux Guerres de Religion, 1494–1562,* 189–92.

5. J. R. Hale, *War and Society in Renaissance Europe, 1450–1620* (Baltimore, 1985), 66.

6. Maximilien de Béthune, duc de Sully, *Mémoires* (London, 1747), 2:26. Even this figure may be too high, since La Noue was pleading for a mere 6,500, as if there were not even this many men on foot. Hale, 67. Joseph Servan, *Recherches sur la force de l'armée française, depuis Henri IV jusqu'à la fin de 1806 en Tableau historique de la guerre de la révolution de France* (Paris, 1808), 1:2–4, gives the figure as 9,737. The bulk of this volume was the work of Philippe Henri de Grimoard, work undertaken on orders of the secretary of state for war in 1774 as an in-house piece of historical research. Joseph Servan later appended material for the periods 1600–59 and 1774–1806 and published it under his name. For the period from the late seventeenth century through the onset of the French Revolution, *Recherches* seems to be both consistent and reasonably reliable. See Lynn, 571–73, for a discussion of Servan.

7. Contamine, *Guerre, état et société,* 316–17.

8. Lot, 15–21, 41, 69–70, 125–34.

9. Edouard La Barre Duparq, *L'art militaire pendant les guerres de religion, 1562–1598* (Paris, 1863), 24.

10. Sully, 3:390. Hale, 63, states that "Sully was planning an army which, with contingents from allies, would comprise 190,000 men." These certainly were not all French.

11. Michel L. Martin, "Note de démographie militaire: Les variations d'effectifs en France depuis le quinzième siècle," *Revue des sciences politiques* no. 8 (1983): 24. To my knowledge, the Martin article is the only one that undertakes the important task of discussing French army growth over the long run. While Martin made use of my 1980 article for the period 1445–1789, he often records figures that differ from mine, and we also clash from time to time for the years after 1789. Unfortunately, Martin does not always cite his sources.

12. This estimate was given by Louvois in Camille Rousset, *Histoire de Louvois* (Paris, 1861), 1:97. In support of this level, see also Bibliothèque Nationale, manuscripts, fonds français (BN ff.), 4255, and Bibliothèque de la Ministère de Guerre (BMG), "Tiroirs de Louis XIV," pieces 36, 37, 39, and 40. Servan, 52–53, states that 125,000 were on foot immediately after the Peace of the Pyrenees.

13. Servan, 54.

14. Representative figures for the peacetime standing army during this era include the following: 138,000 during the early 1680s; 140,216 in 1700; 132,959 in 1715; 142,653 in 1739; 167,528 about 1750; 159,016 in the late 1760s; and 154,910 in early 1789. Servan, 55, 58, 60, 61, 64, 68–69, 96. For consistent comparison, all these peacetime levels, 1679–1789, have been taken from Servan. Servan's *Recherches* usually presents these figures as levels maintained after major conflicts, making it necessary to hedge at times concerning exact years. For archival confirmation see Archives de la guerre (AG), MR 1777; AG, A[1]3686, 11; AG, A[1]3712, 128; BN ff. 14199; AG, A[4]80; AG, A[1]3671, 39; AG, A[4]84; BN ff. 6198.

15. A *contrôle* for 1636 (an official estimate of troop size and finance) projected 172,000 infantry, 21,000 cavalry, and another 12,000 cavalry separately financed; this yields a paper total of 203,000. David Parrott, "The Administration of the French Army During the Ministry of Cardinal Richelieu," D.Phil. diss., Oxford University, 1985, 99–100, 140.

Bernard Kroener, in his "Die Entwicklung der Truppenstärken in den französischen Armeen zwischen 1635 und 1661," in Konrad Repgen, ed., *Forschungen und Quellen zur Geschichte des Dreissigjährigen Krieges* (Munster, 1981), 201, presents detailed records, *états,* of troop strengths for 1638 and 1639 that he located in the Archives des Affaires Étrangers and the manuscript collection of the Bibliothèque Nationale. They list 160,010 (123,450 infantry and 36,560 cavalry)

for 1638; 148,180 (125,800 infantry and 22,380 cavalry) for 1639; and 195,950 (169,800 infantry and 42,150 cavalry) for 1640.

16. In his "Succinte narration" in Petitot, ed., *Collection des mémoires relatifs à l'histoire de France,* 2d ser. (Paris, 1821), 11:317, Richelieu lists 150,000 foot, both garrison and field armies, and 30,000 horse, at a cost of 60,000,000 livres per year.

17. See BN ff. 6385; BMG, Collection des ordonnances militaires, vol. 14, piece 87; Servan, 25; Jacques Boulenger, *The Seventeenth Century in France* (New York, 1963), 71; Michel Carmona, *La France de Richelieu* (Paris, 1984), 150.

18. Kroener's is the most exhaustive study of the difference between paper figures and the number of men actually in the field. For example, his comparison of the actual effectives (as reported in a June 1641 review of Châtillon's troops) with official strengths (Kroener, 204–5) startles the reader. One infantry regiment reported only 8 percent of its supposed total of 1,200. On average the other seven regiments produced only 44 percent of their official strengths for review. Parrott ("The Administration of the French Army," 142) also argues that reality fell far short of paper possibilities. He suggests that the numbers of men actually maintained, as demonstrated through review reports, stood at only 50 percent of the numbers in the *contrôles* for the years 1630–38.

Here we have the problem of paper versus reality. I prefer paper figures as an index. But even if we accept the worst case of Parrott, there were still about 100,000 men actually reported as being under arms in 1636. In any case, even Parrott's discounted totals represent a major increase over the forces projected by Henri IV. More to the point, the less one credits expansion during the ministry of Richelieu, the more impressive become the totals assembled by Le Tellier and Louvois, at least after 1659.

19. BMG, "Tiroirs de Louis XIV," pieces 46–48, 50–54.

20. BMG, "Tiroirs de Louis XIV," piece 110. Of this figure, 163,240 were listed as being on campaign, while 116,370 were in garrison.

21. Servan, 58, puts them at 395,865 and 392,223. A 1710 *état,* or muster report, stated that 319,531 infantry and 57,564 cavalry were in the army at that point. AG, MR 1701. This falls 4 percent short of the Servan estimate, but it essentially corroborates it. In my experience the figures shown in the *Recherches* usually run a bit higher than this type of *état,* wartime or peacetime.

22. Ibid., 60.

23. To be precise, 401, 215. Ibid., 63–64. There are ample sources to justify such a high level. AG, Ya359 sets the number of the still-expanding army troops in 1743 at 320,994. AG, A[4]80 approaches the Servan estimate for 1748, cataloging 390,714 troops. BN ff. 14210, exceeds Servan for 1748, listing 426,815 troops. All these totals include the *milice* since these are wartime levels. The *milice* presents a problem for anyone attempting to count heads in the eighteenth century. It seems most reasonable to count them in force totals only during wartime because the peacetime *milice* was only put in the field during wartime.

24. Servan, 67. As is often the case, my research differs from Martin's; he credits the French with only 320,000 for the War of Austrian Succession and 350,000 for the Seven Years' War. Martin, 25.

25. Jacques Godechot, *Les institutions de la France sous la Révolution et l'Empire* (Paris, 1968), 362. Godechot lists a total paper strength of 1,169,000.

26. Petiet, "Rapport sur l'administration de son département," a report dating from year V of the revolutionary calendar (1796–97), in Jean-Paul Bertaud, *La Révolution armée* (Paris, 1979), 271. These figures were rounded off to the nearest thousand. Petiet discounted the 1794 high to 732,474. Godechot, 362, also discounts the million figure, arguing only that 750,000 men "at least" were actually under arms.

27. The military historian Owen Connelly accepts 600,000 as the figure for the "standing army" from 1805 on. Owen Connelly, *French Revolution: Napoleonic Era* (New York, 1979). Martin credits Napoleon with 700,000 to 1,000,000 troops, but he never distinguishes French from allied levies. Thus he states that Napoleon crossed the Nieman in 1812 with 700,000, but fails to note that only half of these were French. Martin, 25. Napoleonic correspondence puts the level of Imperial French soldiers in 1810 at 622,000. Correspondance 14311, 14601, 14754, cited and totaled by Jean Morvan, *Le soldat impérial* (Paris, 1904), 1:66. After the debacle of 1812, Napoleon undertook the herculean task of forging a new army to meet the inevitable counterattack; he set as his goal an army of 656,000. David Chandler, *The Campaigns of Napoleon* (New York, 1966), 866–67.

28. Gabriel Hanotaux, ed., *Histoire de la nation française* (Paris, 1927), tome 8, *Histoire militaire et navale,* 2:245–46.

29. Ibid., 251, 258. An 1824 law set the ambitious goal of a standing army of 480,000, but this was not reached.

30. Ibid., 259–60, 268–70. Hanotaux estimated the number of troops actually on foot in 1848 at 292,000 in early 1848. Ibid., 334.

31. The low point sank to 280,405 in 1836, and a high point of 428,315 was reached in 1841. La Chapelle, *Les forces militaires de France en 1870* (Paris, 1872), 106, presents a report on troop strength dated 24 September 1868 and signed by J. Delbousquet, *chef de bureau du recrutement.* It states active army and reserve figures for each year from 1830 through 1869.

32. The extremes ranged from 361,468 in 1853 to 467,579 in 1861. For 1853, see Delbousquet figures in La Chapelle, 106; for 1860–69, see Pierre Lehautcourt, *Histoire de la Guerre de 1870–1871* (Paris, 1902), 2:399, which is itself a good discussion of the strength of the French army. See also the 1848–66 figures for *effectifs moyens* supplied by Minister of War Randon in his *Mémoires du maréchal Randon* (Paris, 1877), 2:183. The years 1848–49, 1854–56, and 1859–60 have not been counted as years of peace because they witnessed revolution, war, or slow demobilization from conflict levels.

Both Randon's and Delbousquet's figures for French strength in the mid-1860s stand in very sharp contrast to the figure of 288,000 stated by the Castelnau report of 11 September 1866 in Germain Bapst's *Le maréchal Canrobert* (Paris, 1898), 4:53, and the figure given by Michael Howard, *The Franco-Prussian War* (London, 1981), 29–30. Randon, 2:182, discusses this estimate as a statement of troops available to take the field in France out of a total army strengh of 400,000.

33. Both the Soult Law of 1832 and the ordinance of 8 September 1841 stipulated mobilizable forces of 500,000, and Lamartine argued for a mobilized

army of 530,000 in the early days of the Second Republic. Hanotaux 259, 269, 334.

34. Delbousquet in La Chapelle, 106. Randon, 2:183, agrees with the Crimean War estimate but puts the Italian War figure higher, at 600,000. The Crimean War was a considerable venture for the French, but still the most that French troops numbered in the Crimea at any one time was 140,000 in November 1855. C. E. Vulliany, *Crimea* (London, 1939), 341. The 1859 Italian War, to which the French committed an army of 120,000 to aid the Piedmontese, lasted only three months from the Austrian ultimatum to the Armistice of Villafranca. Letter of Emperor Napoleon III, 15 May 1859, in Hanotaux, 372. Wanty argues that the army totaled 150,000 in six corps. Emile Wanty, *L'art de la guerre*, 3 vols. (Paris, 1967), 2:18.

35. Delbousquet figures in La Chapelle, 106. At this time the French believed that the Prussians could field 1,200,000. Howard, *Franco-Prussian War*, 29. Howard, 22, gives the actual figures of men mobilized against France as 1,183,389, of which 983,064 were from the North German Confederation.

36. For brief discussions of the Neil Law, see Hanotaux, 402–6 and Pierre de la Gorce, *Histoire du Second Empire* (Paris, 1913), 5:317–45. An accessible and good account of this vaunted law can be found in the article "Army Reform" in William E. Echard, ed., *Historical Dictionary of the French Second Empire* (Westport, Conn., 1985), 20–24. It dismisses the Neil Law as "largely fruitless."

37. Of the 800,000, 500,000 would be active army and the rest reserves. The Neil Law created an active army based on men serving for five years, plus a reserve composed of men who had served their five-year commitment and men who served only five months of active duty and passed directly into the reserve. In contrast, Delbousquet stated a mobilization figure of 627,250 for 1866, of which 391,400 were active army. La Chapelle, 106.

38. Echard, 20–24.

39. The exact figure was 567,131, according to the *état* of 1 June 1870 signed by Colonel Hartung, *directeur adjoint du personnel*, and by Delbousquet in *Enquête parlementaire sur les acts du gouvernement de la défense nationale* (Versailles, 1872), 1:67–68. This total is a paper one, good for comparison with other paper figures but overstating how many troops were actually under arms to face the Prussian invasion. The *état* reduces this to 492,585 by subtracting 74,546 "*non valeurs*." Of the 492,585, 50,000 are tolled off for Algeria and 6,500 for Rome. Marshal Leboeuf informed the government that the final figures for the mobilized army stood at 662,000, of whom 370,000 could be utilized in field armies against the Prussians. This is a much-cited figure. See, for example, William McElwee, *The Art of War from Waterloo to Mons* (Bloomington, Ind., 1974), 43.

40. For a good brief discussion of French manpower policy see Adolph G. Rosengarten, Jr., "The Evolution of French Manpower Policy from 1872 to 1914," *Military Affairs* 45 (December 1981).

41. Except for the early 1914 level, all the figures stated in this paragraph were taken from the D. S. Newhall article, "Army: Organization," in Patrick Hutton, et al., eds., *Historical Dictionary of the Third French Republic*, vol. 1 (New York, 1986). It is a very useful summary of recent scholarship on the size of French forces under the Third Republic. Rosengarten, 184, states the early 1914 figures as 712,000 enlisted and 19,000 officers. Newhall pushes the total up to 800,000, for reasons unclear to this author. Robert Doughty, *The Seeds of Disaster* (Hamden, Conn., 1985), 22, states that by 1933 there were only 320,000 troops in France and the Rhineland. Wanty, 2:265–66, gives a high 1930 total, 651,000, with 405,000 in the Metropole.

42. Hutton, 43. Wanty, 2:95, gives the 1914 figure as 3,800,000. Both of these are total figures for frontline troops, reservists, and rear echelon units. Only about 1,500,000 French troops were in combat units ready to fight in August 1914.

43. Hutton, 43. Determining the size of French forces mobilized in 1939–40 depends on what is counted and when it is counted. B. H. Liddell Hart, *History of the Second World War* (New York, 1970), 18, gives the total as 5,000,000 in 110 divisions. Henri Michel, *The Second World War*, trans. Douglas Parmée (New York, 1975) states the total as 5,700,000, of whom 5,100,000 were French. However, French mobilization was not entirely military in the narrow sense; according to Michel, 1,400,000 of the 5,700,000 were assigned to "reserved occupations" and thus did not serve in uniform. This gets us back to the roughly 4,000,000 stated by Newhall. Also, as time went on, the French were able to mobilize more men. It should be remembered that 9 months passed between the outbreak of war on 1 September 1939 and the French request for an armistice on 16 June 1940.

44. The United States equipped eight full divisions of French forces in North Africa, while three more were formed in France after D-Day.

45. Peter Calvocoressi and Guy Wint, *Total War* (New York, 1979), 322, credit the French Forces of the Interior with mobilizing 200,000.

46. The debate over the military revolution is one of the most important in early modern military history. It was initiated by Michael Roberts with his essay The Military Revolution, 1560–1660 (Belfast, 1956), reprinted in his *Essays in Swedish History* (London, 1967). Geoffrey Parker picked up this issue later, "The 'Military Revolution' 1560–1660—A Myth?," *Journal of Modern History* 48 (June 1976), and he has recently expanded his discussion in *The Military Revolution: Military Innovation and the Rise of the West, 1500–1800* (Cambridge, 1988). See also Lynn, "The Growth of the French Army," cited above, and John A. Lynn, "Tactical Evolution in the French Army, 1550–1660," *French Historical Studies* 14 (Fall 1985).

47. *Enquête parlementaire*, 67.

48. Christopher Duffy, *Russia's Military Way to the West* (London, 1981), 125. At the end of Catherine's reign, Langeron estimated the size of Russian forces at 178,000. Ibid.

49. Chandler, 750, gives the figure of 409,000 troops for all field, garrison, and auxiliary troops on all fronts.

50. John Shelton Curtiss, *The Russian Army Under Nicolas I, 1825–1855* (Durham, N.C., 1965), 107, 108, gives the 1826 figure as 885,000 with reserves, and 820,000 to 859,000 for 1850, when the Russian population was nearly double that of France.

51. Ibid., 110, 111.

52. Alan Sked, *The Survival of the Hapsburg Empire* (London, 1979), 34, 35, and John Gooch, *Armies in Europe* (London, 1980), 77.

53. Gunther Rosenberg, *The Art of Warfare in the Age of Napoleon* (Bloom-

ington, Ind., 1978), 173, and Gordon Craig, *The Battle of Königrätz* (Philadelphia, 1964), 7.

54. Herbert Rosinski, *The German Army* (New York, 1966), 21.

55. Ibid., 21, 27. Rosinski gives a figure of "more than 76,000" on p. 21 and 80,000 on p. 27.

56. Theodore Ropp, *War in the Modern World* (New York, 1962), 46. Rosinski, 33, gives the size of the Prussian standing army as 132,000 in 1751.

57. Howard, *Franco-Prussian War,* 12.

58. Craig, 17.

59. Howard, *Franco-Prussian War,* 22. The total was 1,183,389, of whom 983,064 were from the North German Confederacy.

60. Wanty, 2:94.

61. Ibid., 2:95. Telford Taylor, *The March of Conquest* (New York, 1958), 18, gives the size of the German army in April 1940 as 3,750,000 active men on duty. Howard, *War in European History* (Oxford, 1977), 99, gives the German forces as 3,400,000 in World War I.

62. For the era before the seventeenth century, population figures are little more than guesswork. Michel Morineau estimates French population in 1580 as between 16 and 20 million, Charles Wilson and Geoffrey Parker, eds., *An Introduction to the Sources of European Economic History 1500–1800* (London, 1977), 155. Charles Tilly, *The Contentious French* (Cambridge, Mass., 1986), 64, 65, estimates the figures at 18 million in 1600 and 19 to 20 million in 1700. B. R. Mitchell, *European Historical Statistics, 1750–1975,* 2d rev. ed. (New York, 1980), 30, reports the following census figures: 27,349,000 in 1801, 35,783,000 in 1851, 38,451,000 in 1901, and 42,781,000 in 1954.

63. Two recent dissertations challenge the picture painted by Louis André, in his *Michel Le Tellier,* that this great war minister did bring about an administrative revolution before 1659. The first and more important is David Parrott, "The Administration of the French Army During the Ministry of Cardinal Richelieu." D.Phil. diss., Oxford University, 1986, which demonstrates convincingly that the Richelieu years brought no great change in military administration. He argues that, in fact, the lack of adequate institutional adjustment limited French strategic success. His study ends in 1637, but its implications cover the period until the Peace of the Pyrenees in 1659. A less impressive, but still good, French dissertation—Patrick Landier, "Guerre, Violences, et Société en France, 1635–1659," doctorat de troisième cycle, Université de Paris IV, 1978—provides many examples of problems from the period 1635–59.

64. In the words of Charles Tilly, "As they fashioned an organization for making war, the king's servants inadvertently created a centralized state. First the framework of an army, then a government built around that framework—and in its shape." Tilly, 128.

65. On the Ségur law see David D. Bien, "La réaction aristocratique avant 1789: l'exemple de l'armée," *Annales: économies, sociétés, civilisations* 29 (1974): 23–48, 505–34.

66. William Serman, *Les origines des officiers français, 1848–1870* (Paris, 1979).

67. Claude Sturgill, "Changing Garrisons: The French System of Etapes," *Canadian Journal of History* 20 (August 1985).

68. For example, archival figures place the *milice* at the following strengths: 52,200 in 1751, BN ff. 14200, BN ff. 14213; and 43,888 in 1771, AG, A[4]83 bis. In computing troop levels here, I have not counted the *milice* in calculating peacetime levels, but I have included it in wartime figures.

69. At times, the *milice* was little more than a device to draft men for wartime service in regular army units. At other times it was intended primarily to provide integral battalions to perform rear-echelon duties. During the War of the Austrian Succession, 80,000 *miliciens* were incorporated into the regular army. André Corvisier, *Armies and Societies in Europe, 1494–1789,* trans. Abigail Siddall (Bloomington, Ind., 1979), 54. By the end of its existence, the *milice* had became an organized semitrained pool of recruits to be integrated into regular regiments. Only the elite grenadier companies of *milice* battalions regularly fought on the battlefield—as *grenadiers royaux.* While service in the *milice* was not very demanding during peacetime, being drawn for service at one of the village lotteries that chose *miliciens* was considered a sorry fate. Exemptions and substitutions guaranteed that the duty fell almost exclusively upon the poorer peasantry. *Cahiers* written on the eve of the Revolution leave no doubt that the *milice* was one of the most hated institutions of the ancien régime; the French population did not readily accept the concept that the people owed military service to the state.

70. The 1702 level is from a contemporary "Mémoire des trouppes que le roy a sur pied," dated January 1702, in Georges Girard, *Le service militaire à la fin du règne de Louis XIV: Racolage et milice (1701–1715)* (Paris, 1922), 5–7.

71. Godechot, 603.

72. Delbousquet figures in La Chapelle, 106.