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## **Military Morality Transformed: Weapons and Soldiers on the Nineteenth-Century Battlefield**

In the dying days of America's Civil War, Theodore Upson, a veteran Federal soldier, had almost come to the end of his long march under the command of General William Sherman. Spring 1865 found him in North Carolina with the desperate shards of the Confederate army fracturing before him and his comrades. As one more ragged, "butternut" clad regiment broke, Upson spotted a rider on a mule in a rebel artillery crew: "Just as I was going to fire something seemed to say to me: 'don't kill the man; kill the mule.' So I . . . shot the off mule just behind the front leg. He went down and that delayed them so much that we got the gun. . . . I am glad I shot the mule instead of the man."<sup>1</sup>

Upson's choice is testimony to the humanity of the individual soldier. He is neither the automaton of traditional military history—retreating, standing, or advancing by company, regiment, or brigade at the behest of some famous "great captain"—nor is he simply an obedient, uniformed killer to be ignored by those who might otherwise describe themselves as "social historians," interested in the lives of ordinary people. The nineteenth-century battlefield posed unique ethical challenges and demanded choices of those individuals wreathed in the acrid, thick, black smoke of gunpowder volleys. The moral and physical autonomy of the soldier, however, was frequently constrained by the tactical formation in which he was deployed (involving both the close proximity of his comrades and, crucially, his unit leaders) and by the technological characteristics of his weapons.

**FORMATIONS, WEAPONS, AND MORALE** During the early years of the century, most line infantry had fought shoulder-to-shoulder in

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1 Theodore Upson (ed. Oscar Winther), *With Sherman to the Sea: Civil War Reminiscences of Theodore F. Upson* (Bloomington, 1943), 159–160.

close ranks, armed with smoothbore muskets that were inaccurate beyond 150 meters. Hence, most fire on the battlefield was delivered in mass unaimed volleys from clumsy muzzle loaders leveled in the direction of enemy formations. Good troops were those who fired fast, three or four rounds a minute. Later in the century, veteran officers and military theorists would look back upon the soldiers of Frederick the Great and the Napoleonic Wars almost as machines, when “men were drilled not trained,” under a system of frequently brutal physical discipline that taught them to repeat the actions of loading and firing as if by reflex, even when gripped by the acute anxiety of battle. Under the eyes of their comrades, fear of shame fixed them to their ground; if terror overcame honor, the close proximity of officers, sergeants, and corporals ensured that they could physically be forced back into their place, by half-pike or the flat of a sword.<sup>2</sup>

The mass of line infantrymen (as opposed to specialist “sharpshooters” or riflemen fighting in open formations and deliberately choosing their targets) would rarely be confronted directly by the ethical reality that their own shots were killing and mutilating other human beings. Not only did they deliver these shots *en masse*, thereby diluting any sense of individual responsibility, but, in a major engagement, they also were unlikely to see the effects of their fire clearly. On a still, windless day in the black-powder era, soldiers in the line of battle were soon almost blind. After a sharp engagement outside Charleston, South Carolina, in late 1864, Colonel George Harrison, 32d Georgia Infantry, recalled “the dense smoke from the enemy’s fire, which from the peculiar state of the atmosphere did not rise, but hid us from the sight of the foe. It was so thick that in places a man could not be seen [at] five paces.” Similarly, his compatriot Joseph Shelby wrote tellingly of battle’s “wild powder gloom” that grew darker and darker until pierced by nothing but the flashes of musket fire.<sup>3</sup>

Throughout the course of the nineteenth century, a nexus of factors—social, cultural, and technological—would gradually

2 A. F. Becke, *An Introduction to the History of Tactics 1740–1905* (London, 1909), 37; Rory Muir, *Tactics and the Experience of Battle in the Age of Napoleon* (New Haven, 1998), 68–104.

3 *The War of the Rebellion: A Compilation of the Official Records of the Union and Confederate Armies* (Washington, D.C., 1880–1901) (hereinafter OR), Series I, Vol.35, Pt. 1, Report of Colonel George P. Harrison, of action at Burden’s Causeway, John’s Island, 255; Series I, Vol.22, Pt. 1, Report of Col. Joseph O. Shelby, commanding Fourth Missouri Cavalry Brigade, December 7, 1862, 151.

change the physical (and thus also the psychological) environment in which most soldiers fought, loosening the constraints over personal choice on the battlefield and restoring considerable agency to the mass of soldiers in combat. This development is of significance in two related areas. First, it confronted the officers of all Western armies with the novel necessity of having to understand the psychology of the men that they led in battle. This late Victorian emphasis on the “moral” qualities of ordinary soldiers has been dismissed by some military historians as an atavistic impulse, provoked by the emerging dominance in the battlefield of impersonal modern technology. In fact the psychological and the technological factors that shaped battle were inextricably intertwined: Military formations dispersed to avoid the firepower of modern weapons; officers sacrificed much immediate control; and isolated men chose to fight or not.

Second, consideration of soldier agency on the battlefield illuminates the contingent nature of human aggression. A prominent recent trend in the study of mass violence—evident in works of history, international relations, and genocide studies—which draws heavily from social and evolutionary psychology, stresses man’s capacity for violence and the ease with which he kills. Yet the nineteenth-century battlefield was populated not just by killers but also by “skulkers” and “shirkers,” as well as by otherwise dutiful soldiers, like Upson, who declined to kill when circumstances allowed. Nor was killing the only military obligation of soldiers, contrary to those modern scholars who view it as “the defining characteristic of war.” Indeed, on battlefields swept by modern firepower, the capacity to endure heavy casualties was identified as a crucial measure of military efficiency. Battlefield leaders recognized the emerging assertiveness and autonomy of individual soldiers as a development equal in significance to the perfection of weapons technology.

For both contemporaries and later generations of military historians, this development manifested itself primarily in dry, tactical debates, particularly about the relative merits of close-order formations—in which soldiers were vulnerable to fire but amenable to discipline—and dispersed, open-order (or “skirmishing”) formations—in which they tended to flee for cover and either shoot wildly or not at all. For frustrated officers, such behavior was a consequence of a character deficiency. May, a captain in and stu-

dent of the 1866 Prussian campaign against Austria, wrote, “If only all soldiers of their own accord would simply do their duty in battle, an army would be perfectly invincible. . . . But man has in his own composition a natural desire of self-preservation, an egotism and indolence united with many sensual desires. . . . Who would ever maintain that death was indifferent to him?”<sup>4</sup>

Conventionally, weapons technology has been seen as central to this issue. The refinement of successive generations of “arms of precision”—from the rifled musket to the breechloader and, by the 1890s, the magazine-fed bolt-action rifle with its smokeless powder—placed ever-more lethal arms into the hands of infantrymen. The faster and more accurate fire prompted troop dispersion, thereby increasing soldier autonomy. Hamley, author of the standard text on military theory for Victorian officer candidates at Sandhurst, described how “since the introduction of rifles and rifled guns into armies,” formations sought “to offer less mark both in front and in depth to the projectiles and to take fuller advantage of the cover which average ground affords.” Yet this stress upon the growing lethality of infantry weapons as the central dynamic of military tactics, privileging technological explanations of change, obscures soldiers’ humanity and ignores other contemporary debates about the “moral” (or psychological) character of men in battle.<sup>5</sup>

Indeed, twentieth-century military historians showed a marked tendency to dismiss those officers who, trained in the age of Victoria, stressed the continuing significance of the “moral factor in war” as ideologically reactionary and blind to the new technological realities of battle. Those who studied World War I, in which the vulnerability of human flesh to machine-gun bullets, shrapnel, and high explosive was all too apparent, often accused its commanders, in Travers’ words, of excessive concern for “the morale-orientated battlefield” at the expense of fully comprehending “the technological battlefield.” Within this historiographical tradition, the tactical debates of the late nineteenth

4 Theodore May quoted in Robert Home and Sisson Pratt, *A Précis of Modern Tactics* (London, 1892), 18.

5 Edward Hamley, *The Operations of War Explained and Illustrated* (London, 1888), 361. Modern military historians tend to render the noun *moral* as *morale* when they encounter it in works by nineteenth-century theorists. Although this interpretation is often correct, theorists sometimes intended the term to have a broader psychological meaning than simply *attitude* or *disposition*.

century seem to be particularly sterile exchanges in which frustrated reformers largely failed to convince conservative military establishments—as embodied in socially exclusive, elite corps—that no amount of human spirit could overcome the deadly new “arms of precision.”<sup>6</sup>

Nonetheless, the distinction between a morale-oriented and a technologically oriented battlefield is a false dichotomy, and the contemporary emphasis on the soldier’s state of mind and will to fight were neither as ill-founded nor as reactionary as later generations of historians have claimed. Recent studies focusing on the history of tactics by Griffith, Echevarria II, and others maintain that nineteenth-century military theorists not only fully recognized the challenges posed by new weapons technologies; they also understood that the human element in combat continued to be a significant, even decisive, factor in combat. Careful reading of tactical theory reveals a widespread acceptance that infantry formations were liable to break down in combat to some extent; the problem was to keep this tendency within acceptable limits. In 1873, British officers were warned, “Particular care must be taken that the frequent dispersion and development of strong lines of skirmishers, which is demanded by the present mode of warfare, may not lead to a pernicious loosening of the tactical connection. This danger can alone be met by great intimacy on the part of officers with battle formation, and by a high state of discipline in action and in firing, combined with a thorough and strict system of drill. As the Russian General Mikhail Dragomirov suggested, “Man always man, this is the first of all instruments for battle.”<sup>7</sup>

The tactical debate between the advocates of dispersed formations and those of closer order should thus be understood not as an ideological impasse between progressive forces of reform and blinkered forces of conservatism but as a practical disagreement between military professionals with equally valid responses to the changing nature of combat. This is not to deny that cultural and political factors could shape tactical debates and military regula-

6 Tim Travers, *The Killing Ground: The British Army, the Western Front and the Emergence of Modern Warfare 1900–1918* (London, 1987), 62–82. For examples of the debates, see Trevor N. Dupuy, *The Evolution of Weapons and Warfare* (New York, 1984), 212–217; Eric Dom Brose, *The Kaiser’s Army*, (New York, 2001).

7 Paddy Griffith, *Forward into Battle* (Novato, 1992); Antulio Echevarria II, *After Clausewitz: German Military Thinkers before the Great War* (Lawrence, 2000); Home and Pratt, *A Précis of Modern Tactics*, 35, 17 (Dragomirov quoted).

tions. Contemporary notions of “race,” for example, were often evident in the works of military theorists. On the eve of World War I, de Pardieu predicted that dispersed tactics would suit French soldiers more than it would the “physically and morally heavy” Germans, who, although “thoroughly disciplined . . . vigorous [and] brave,” lacked the “spirit of initiative,” “quick intelligence,” and “faculty of getting out of difficulty” that were innate to Frenchmen. German military theorists seem to have harbored analogous beliefs. Hohenlohe recalled being “taught that a Frenchman could by nature beat a German in a bayonet fight.” Such cultural context was important in framing contemporary tactical debates, but it did not wholly distort their empirical bases.<sup>8</sup>

THE AUTONOMY AND PSYCHOLOGY OF SOLDIERS ON THE BATTLEFIELD The long-standing, maturing influence of social history on the writing of military history has also promoted interest in the agency of ordinary soldiers. This trend began in the United States during the interwar years, when Lonn and Martin tackled the hitherto taboo subject of desertion during the American Civil War. Martin’s identification of the complex social, political, and economic motives that caused men to abandon the army highlighted the class rift that alienated many poor white soldiers from the Confederate cause. Her prescient analysis was one of the earliest to stress internal social divisions as a serious factor in the South’s defeat. In 1943, Wiley, also writing about the Civil War, employed the methodologies of social history to address the entire experience of being a soldier, from recruitment to the battlefield, placing particular emphasis on the material conditions of diet, camp-life, recreation, and battle. In his 1952 volume on Union soldiers, he drew from then-recent psychological studies of World War II veterans to provide powerful insights into the motivation of individuals in combat, discovering the importance of “primary group cohesion” (the close comradeship felt between small groups of soldiers who served together).<sup>9</sup>

8 For the tactical debate, see Griffith, *Forward into Battle*; Echevarria II, *After Clausewitz*. Marie Félix de Pardieu (trans. Charles F. Martin), *A Critical Study of German Tactics and the New German Regulations* (Fort Leavenworth, 1912), 7–8; Kraft zu Hohenlohe-Ingelfingen (trans. N. L. Walford), *Letters on Infantry* (London, 1892), 36.

9 Ella Lonon, *Desertion during the Civil War* (New York, 1928); Bessie Martin, *A Rich Man’s War, A Poor Man’s Fight: Desertion of Alabama Troops from the Confederate Army* (New York, 1932); Bell Irvin Wiley, *The Life of Johnny Reb: The Common Soldier of the Confederacy* (India-

Wiley's use of psychological data added an important interdisciplinary framework to the historians' conception of men in battle. Military professionals, however, had been consulting studies of the human mind since the mid-nineteenth century. For many years, the most highly regarded study of human behavior in combat was Du Picq's *Battle Studies*, originally published in 1880, ten years after the author was killed in action near Metz during the Franco-Prussian War; new editions were published for the education of American officer cadets as late as 1946. Even after World War I had demonstrated the fearsome impact of modern artillery, automatic weapons, aircraft, poison gas, and armored fighting vehicles, practical soldiers still retained their interest in the human element in combat. Indeed, von Schell's observations about combat leadership centered on his belief that "the psychological reaction of the individual [to battle] has become increasingly important." His work, translated for American readers in 1933, became an important influence on U.S. tactical doctrine during World War II.<sup>10</sup>

Psychological studies of combat troops during World War II resulted in one of the most controversial treatises on the will to fight written thus far—Marshall's *Men Against Fire*. Marshall's contention, that no more than one in four infantrymen actually fired their weapons in combat, has since been widely disputed. His methodology was certainly suspect, and his work was more of a polemic than a rigorous study. Yet the phenomenon to which Marshall attested would have been wholly familiar to late nineteenth-century theorists arguing the relative merits of close order over dispersed tactics, although his manner of explaining it was strikingly different. Whereas May had cited "egotism" and the urge for "self-preservation," Marshall's analysis and those that followed it—by Grossman, for example—suggested that most men, like Upson, were simply "loath to kill" in battle.<sup>11</sup>

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napolis, 1943); *idem*, *The Life of Billy Yank: The Common Soldier of the Union* (Indianapolis, 1952). European military historians were slow to follow the American lead, though John Keegan, *Face of Battle* (London, 1976), was influential in raising the profile of the common soldier in works of British military history.

10 Ardant Du Picq (trans. John N. Greely and Robert C. Cotton), *Battle Studies: Ancient and Modern Battle* (Fort Leavenworth, 1946); Adolf von Schell (trans. Edwin Harding), *Battle Leadership* (Fort Benning, 1933), 9–19; Harding (ed.), *Infantry in Battle* (Washington, D.C., 1934).

11 See Russell Glenn's introduction to Samuel L. A. Marshall, *Men against Fire: The Problem of Battle Command* (Norman, 2000; orig. pub. without introduction, 1947), 1–8; Dave Grossman, *On Killing* (New York, 1995), 28–36.

This suggestion, however, runs counter to an emerging historiographical trend that stresses the essential willingness of humans to engage in lethal violence. Stating that “the characteristic act of men at war is not dying, it is killing,” Bourke argued, with the weight of considerable evidence from the World Wars and Vietnam, that many service personnel thrived in combat, finding “excitement, joy and satisfaction” in killing. This willingness to kill has also figured prominently in works by other scholars of mass violence, and in studies of genocide and international relations. In attempting to understand the motivations of the “ordinary men,” middle-aged reservists in the police battalions of Eastern Europe, who participated in massacres of Jews during 1942, Browning established that no more than 20 percent of them refused to become killers, even though the option was open to them. Yet, rather than “excitement, joy and satisfaction” in the other 80 percent, Browning detected the pressure to conform and to avoid appearing “weak,” the moral absolution conferred by obedience to authority, and the war’s reinforcement of an ongoing struggle between “races” that placed Jews outside “the community of human obligation.”<sup>12</sup>

Although soldiers on a battlefield and executioners at a massacre face differing ethical situations (notwithstanding their frequent overlap in war), historical analysis of the behavior of both groups has increasingly looked to a common thread in social psychology. Both Bourke and Browning, for example, discussed “agentic states,” in which ethical conflict becomes reduced or negated through the abrogation of individual responsibility to a higher authority. Browning, like several other prominent scholars of genocide, refers to the experiments conducted by Milgram at Yale University from 1960 to 1963, in which volunteers, in response to instructions from a “scientist,” showed a willingness to inflict (what they thought to be) electric shocks of escalating intensity to individuals, ostensibly (though not really) volunteers like themselves. Although controversial, Milgram’s work intimated a deeply ingrained human behavioral inclination to obey. This notion of a compliant agentic state seems initially to offer a powerful counter-explanation for the “straggling” soldier, out of sight and out of vo-

12 Joanna Bourke, *An Intimate History of Killing: Face-to-Face Killing in Twentieth-Century Warfare* (London, 1999), 1; Christopher R. Browning, *Ordinary Men: Reserve Police Battalion 101 and the Final Solution in Poland* (London, 2001), 159–190.



cal range of his officer, and thus freed from his compelling authority. Yet, as Browning notes, the artificiality of Milgram's experiments could not possibly reflect the specific and complex circumstances of historical events: When Wilhelm Trapp, the commanding officer of Reserve Police Battalion 101, first ordered his men to murder Jewish civilians, he wept, allowing any of them to walk away, without fear of punishment. Although immediate authority in this case was weak, only a small minority of men accepted Trapp's offer.<sup>13</sup>

Officers' authority over massed soldiers fighting in close-order formations was also probably weak, although for different reasons. In 1863, de la Barre Duparcq, "Professor of the Military Art" at the military college of Saint-Cyr, wrote, "All firing by command can continue but a short time in battle and becomes impractical in any brisk action; for the orders of the different officers are confounded together, and the noise of the artillery and even of musketry, the excitement of the combat, increased by the cries of the wounded, make it impossible for the soldiers to give the attention necessary for loading and firing together." Thus, the notion that men fired (and thus killed) on command was in many ways, a useful fiction perpetuated by drill books rather than a battlefield reality. The decision to use a weapon to its full, lethal effect rested largely with individual soldiers.<sup>14</sup>

Gauging the incidence of soldiers who refused to use their weapons on nineteenth-century battlefields is problematical; the evidence, though suggestive, is also ambiguous. A Dutch cavalry officer, writing in 1863, hinted that most soldiers were reluctant killers, at least until hardened by experience: "There are few men whose nature moves them, by a stoic sense of duty, coolly to slay a fellow being whom they never saw before; it is only fierce war that begets the habit of shedding human blood without repugnance." The debris of battle offers an intriguing, but inconclusive, testimony. Hohenlohe, who scoured battle scenes in 1866, "found muzzle-loading rifles loaded with ten successive cartridges, of

13 Browning, *Ordinary Men*, 55–70, 171–176; James Waller, *Becoming Evil: How Ordinary People Commit Genocide and Mass Murder* (New York, 2007), 107–115; Donald Dutton, *The Psychology of Genocide, Massacres and Extreme Violence* (London, 2007), 20, 45, 135; Stanley Milgram, *Obedience to Authority: An Experimental View* (New York, 1974).

14 Edouard de la Barre Duparcq (trans. George W. Cullum), *Elements of Military Art and History* (New York, 1863), 70.

which the first was put in hind before (a proof that the soldier had not noticed that the first shot had missed fire, and had therefore kept putting in fresh cartridges one over the other).” This phenomenon was either a consequence of the mishandling of the weapon by a soldier who repeatedly failed to notice that he was not actually firing—as Hohenlohe interpreted it—or as a deliberate strategy by which soldiers could appear to be operating their rifles without actually firing.<sup>15</sup>

EVOLUTIONARY PSYCHOLOGY AND HUMAN NATURE Once again, the complexity of specific historical circumstances complicates explanations of behavior based on notions of “agentic states.” In attempting to account for the aggressiveness, or otherwise, of individuals, scholars of mass violence have increasingly ventured beyond social psychology to the work of evolutionary psychologists, daring to revive the concept of “human nature” as a fundamental component of the humanities and social sciences. For example, both Gat and Thayer have rooted their understandings of collective violence and ethnic conflict within Darwinian frameworks. Drawing on zoological evidence for intra-species conflict among social animals (particularly primates), the archaeological evidence for warfare among the earliest human societies, and anthropological studies of violence in hunter-gather communities, they challenged the once-orthodox position, advanced by Mead and others, that war is a comparatively recent “invented” human activity.<sup>16</sup>

This view tends to conflate war, a collective activity, and the individual human capacity for aggression, enlisting the chimpanzee, our closest biological relative, to serve as a paradigm for humans “in a state of nature.” Bands of chimpanzees have been observed aggressively to patrol territory, protect sources of food, and launch organized raids against rival groups. The mass ambush of a lone rival is a favorite, and peculiarly brutal, tactic. Scholars have

15 Jean Roemer, *Cavalry: Its History, Management and Uses in War* (New York, 1863), 144; Hohenlohe, *Letters on Infantry*, 34. See, for example, Grossman, *On Killing*, 22–25, for a discussion of soldiers loading without firing at the battle of Gettysburg in 1863.

16 Azar Gat, *War in Human Civilisation* (New York, 2006), 1–333; Bradley Thayer, *Darwin and International Relations: On the Evolutionary Origins of War and Ethnic Conflict* (Lexington, 2004), 96–152; Lawrence Keeley, *War before Civilisation* (New York, 1996); Steven LeBlanc, *Constant Battles: Why We Fight* (New York, 2003); Margaret Mead, “Warfare Is Only an Invention—Not a Biological Necessity,” *Asia*, XV (1940), 402–405.

attributed the violence of the “demonic male” primate in war and in the maintenance of fiercely hierarchical social structures to an innate human aggression, putatively providing a model for the dutiful soldier, finding “excitement, joy and satisfaction” in killing.<sup>17</sup>

Yet, the example of Upton, who lowered his sights to spare a highly vulnerable enemy in battle, is a powerful reminder that humans can temper whatever “innate aggression” lurks in their evolutionary makeup, by understanding the consequences of their actions and moderating their behavior accordingly—a process that captures the idea of human free will. As Marks forcefully argued, notwithstanding their genetic similarities, humans and chimpanzees are adaptively and ecologically distinct, with unshared patterns of gene expression in the brain. Since, in evolutionary terms, humans and chimpanzees parted company 4 million years ago, their capacity for aggression may have little in common. The evidence from archaeology concerning the ubiquity of “warfare” among early humans (thus implying its roots in human nature) is similarly problematical. Arrowheads and spear points embedded in human remains or cave paintings of opposed archers launching arrows at each other may well demonstrate a long pre-history of intra-group conflict, but the exact nature and context of that violence remains difficult to interpret. Was it war, raid, murder, or massacre? Despite any innate human potential for aggression, any given instance of violence requires more than a crude assertion of an evolutionary determinism.<sup>18</sup>

The attempt to explain the makeup of the human mind through a psychology informed by evolutionary theory is not to be confused with the positing of innate, genetically determined violent behavior, a suspect pursuit that threatens to replicate the fallacies of sociobiologists or even eugenicists. A more responsible approach would be to emphasize how predatory strategies and techniques became more complex as universal human cerebral capabilities evolved. The emergence of more elaborate predatory strategies and techniques (or, conversely, to alternatives like trade

17 Richard Wrangham and Dale Peterson, *Demonic Males: Apes and the Origins of Human Violence* (Boston, 1996).

18 Jonathan Mack, *What It Means To Be 98% Chimpanzee* (Berkeley, 2003); Barton C. Hacker, “Fortunes of War: From Primitive Warfare to Nuclear Policy in Anthropological Thought,” in Myrdene Anderson (ed.), *Cultural Shaping of Violence: Victimization, Escalation, Response* (West Lafayette, 2004), 151, 153.

and exchange and flight or submission) depended on such environmental factors as competition for scarce resources and such cultural factors as the pursuit of wealth and status, revenge, or defense of honor. The nineteenth-century battlefield was a peculiarly complex context in which powerful human instincts for both self-preservation and aggression vied with the demands of political, social, and religious authorities, personal principle, and obligation to comrades (“primary group loyalties”) to create ambiguous attitudes toward killing.<sup>19</sup>

WEAPON TECHNOLOGY AND “MORAL FACTORS” Unsurprisingly, the battlefield was populated by both skulkers and killers—the two options often being a matter of tactical contingency for individual soldiers. Their experiences advise against Bourke’s easy dichotomy between dying and killing. Because combat, like any other human phenomenon, takes place under changing circumstances, its “characteristic acts” may not necessarily be constants. A consideration of the developing relationship between weapon technology and tactics during the latter half of the nineteenth century should serve to illustrate the point.

Much of the emphasis placed on “moral factors” at that time centered not on getting soldiers to kill repeatedly but on getting them to move forward while under fire, ignoring casualties and resisting the urge either to take cover or to stop and return fire. These qualities, which were as “characteristic” of battle as killing, account for the continued utility of apparently anachronistic technologies of low lethality—the bayonet, the lance, and the sabre. The term “shock action” referred as much to a psychological shock as to a physical collision; the speed and momentum of a regiment charging with edged weapons raised could have a powerful effect on the enemy. The actual number of casualties inflicted was often irrelevant to the tactical outcome. Consider, for example, the successful sabre charge launched by the Prussian 10th Magdeburg Hussars against the 3rd battalion of the 51st (Hungarian) Regiment at Benetek during the decisive battle of Königgrätz on

19 Ullica Segerstråle, “Evolutionary Explanation: Between Science and Values,” in Jerome H. Barkow (ed.), *Missing the Revolution: Darwinism for Social Scientists* (New York, 2006), 121–147; Jean Guilaine and Jean Zammit (trans. Melanie Hersey), *The Origins of War: Violence in Pre-history* (London, 2001); Anthony McGinnis, *Counting Coup and Cutting Horses: Intertribal Warfare on the Northern Plains 1738–1889* (Evergreen, Colo., 1990).

July 3, 1866. The 681 Hungarian soldiers, weary and almost out of ammunition, had just fought their way clear of a wooded area when the Hussar squadron of about 130 sabres charged them from a nearby hollow. The startled infantry simply laid down their arms and surrendered. No-one on either side was killed or injured during the charge.<sup>20</sup>

The bayonet had a similar power to embolden its bearers and intimidate those on the receiving end. Although it inflicted few casualties in combat, when carried forward in attack, its “moral effect” drove defenders from their positions (or caused them to surrender). Suggestions that its time had passed were quickly brushed aside by appeals to psychology: “The bayonet, indeed, can never be abolished, for it is the sole and exclusive embodiment of that mental tension and determination which alone attains its purpose,” wrote one highly regarded German tactician in the closing years of the nineteenth century. To maintain forward momentum, and thus give the charge its moral impact, soldiers assaulting a position in a bayonet charge could not pause to return fire at the defenders, though most soldiers felt a strong inclination to do so. De Forest, an American Civil War veteran, wrote that “to be boomed and volleyed at without answering is one of the most serious trials of battle,” and to be able to fire back was “wonderfully consoling and sustaining.” Yet if men did so, the attack inevitably broke down.<sup>21</sup>

At Fredericksburg, on December 13, 1862, the majority of Union assaults against the entrenched Confederate positions on the wooded heights above the town failed, but Colonel Adrian Root achieved a dramatic local success because he kept his regiment, the 94th New York Infantry, moving forward in spite of his soldiers’ strong instincts to fire at their enemies:

[T]he fire of the enemy became so incessant and galling and so many of my men fell killed or wounded that the front line of the brigade slackened its pace, and the men, without orders, commenced firing. A halt seemed imminent, and a halt in the face of the terrific fire to which the brigade was exposed would have been

20 Evelyn Wood, *Achievements of Cavalry with a Chapter on Mounted Infantry* (London, 1897), 163–174; Hohenlohe, *Letters on Cavalry*, 62.

21 Wilhelm Balck (trans. Louis Maxwell), *Modern European Tactics* (London, 1899), I, 277; John De Forest, *A Volunteer's Adventures: A Union Captain's Record of the Civil War* (New Haven, 1946), 111.

death; or worse, a disastrous repulse. . . . Colonel Bates, Twelfth Massachusetts Volunteers, whose ammunition had been exhausted, promptly complied with my request that his regiment unite with my brigade in a bayonet charge. By the strenuous exertions of the regimental commanders and other officers, the firing was nearly discontinued. The brigade resumed its advance, and as the men recognized the enemy their movement increased in rapidity until, with a shout and a run, the brigade leaped the ditches, charged across the railway and occupied the wood beyond, driving the enemy from their position, killing a number with the bayonet, and capturing upwards of 200 prisoners.<sup>22</sup>

This extract presents a striking example of the battlefield nexus of soldier agency, the authority of leadership, and the tactics associated with a particular weapon—all ultimately governed by a particular historical context. The American citizen-soldier of 1862 was often described by European commentators as poorly drilled and lacking in discipline but capable of a high degree of battlefield autonomy and initiative. Becke, a Victorian artillery officer, wrote that the Civil War “waged by volunteer soldiers of superior intelligence, is characterised by great freedom in formation and in movement.” This independence manifested itself in the “wonderfully consoling and sustaining” practice of halting to fire at defenders when attacking, often at great cost, until, almost as a last resort, one side or the other finally resorted to bayonet charges, which “when made resolutely and without slackening the gait . . . have succeeded in nine cases out of ten.” As the example of the 94th New York at Fredericksburg demonstrates, good officers were able to exert a countervailing authority over these autonomous citizen soldiers, because infantry formations were still dense enough to be controlled by energetic leaders.<sup>23</sup>

At Fredericksburg, the defending infantry was predominantly armed with smoothbores and rifle muskets. The latter, although traditionally heralded as having ushered in a “revolution” in infantry tactics, did not significantly extend the range of effective fire on the battlefield. Because of its low muzzle velocity, the ball traveled in a marked parabolic trajectory toward its target. In the

22 OR, report of Col. Adrian Root, December 11–15, 1862, Battle of Fredericksburg, Va., No. 226, Series I, Vol. 21, 486–487.

23 Becke, *Introduction to the History of Tactics*, 41; Francis J. Lippitt, *A Treatise on the Tactical Use of the Three Arms* (New York, 1865), 24–25.

hands of a skilled sharpshooter, with a clear view of his target and a practiced eye for judging range and adjusting his sights, it could be a dangerous weapon from distances greater than 600 yards. In the hands of excited line infantrymen, deafened by volleys, blinded by smoke, and poor at estimating distances by sight (as most humans are), it was generally employed at much closer quarters; at longer range, soldiers usually shot high. Aware of the weapon's limitations, Captain H. M. Johnstone concluded that the effective combat range ("the distance where, under ordinary conditions, the enemy's losses are sufficient to stop his advance") of the Civil War vintage Enfield or Springfield rifles was, at most, 250 yards. Furthermore, the muzzle-loading rifle musket fired only two or three rounds a minute. The rapid-firing breechloader caused the real tactical revolution.<sup>24</sup>

The first 60,000 breech-loading Dreyse "needle guns" ordered by the Prussian government, in 1840, saw limited use in combat during the revolutions of 1848. Outside Prussia, however, military authorities were initially sceptical. In careless hands, the needle gun could be fragile. Furthermore, it had relatively poor ballistic performance, fired on an irregular trajectory, and had slightly less range than the rifle musket. Military authorities feared that its rate of fire, seven or eight rounds a minute, would lead to the wasteful expenditure of ammunition. Indeed, some commentators predicted that regiments would expend all of their ammunition so quickly in battle that they would become defenseless. The Prussian campaign against Austria in 1866, however, proved the value of the breechloader to Europe's soldiers.<sup>25</sup>

The breechloader's rapid rate of fire, its capacity to load quickly, and its ability to be fired from a prone position all inspired confidence in soldiers, demonstrating how tightly psychological and technological factors were bound on the battlefield. Those who carried the needle gun proved more aggressive in combat and more willing to shoot than those armed with muskets. Rapid fire at short range inflicted heavy casualties against men advancing in

24 Henry M. Johnstone, *A History of Tactics* (London, 1906), 47. See also Earl Hess, *The Rifle Musket in Civil War Combat: Reality and Myth* (Lawrence, 2008); Brent Nosworthy, *The Bloody Crucible of Courage* (London, 2005), 571–593; Griffith, *Rally Once Again: Battle Tactics of the American Civil War* (Ramsbury, U.K., 1989), 73–90.

25 Dennis E. Showalter, "Infantry Weapons, Infantry Tactics, and the Armies of Germany," *European Studies Review*, IV (1974), 119–140.

formations and men holding a position while struggling to load and fire muskets.

Hozier, an English war correspondent, who walked the battlefield at Podol after the Prussians forced the passage of the Iser River commented on the overwhelming preponderance of slain soldiers wearing the white coats of Austria lying wherever the rival infantries had exchanged fire: “On one part of the railway line three Prussian corpses opposite nineteen Austrian formed a grisly trophy of the superiority of the needle-gun.” Austrian prisoners complained of the unnerving situation of standing, exposed to fire, as they re-loaded, while their enemy calmly and quickly re-loaded kneeling or lying in tall grass, hidden from sight. This new efficiency did not, as traditionalists had feared, lead to wild and wasteful firing; it gave Prussian infantrymen a sense of security, even in combat, regardless of the gun’s ballistic weaknesses. The Prussians shot more deliberately than the frantic Austrians, who struggled with their muzzle loaders, standing tall and exposed to the enemy. Hozier described the fire from the Austrian riflemen as “whizzing over the heads of the opposite ranks.” All the while, the soldier armed with a breechloader “[kept] his muzzle down, and if in haste he [fired] it off without raising the butt to his shoulder, his shot still [took] effect, though often low, and a proof of this is that very many of the Austrian prisoners were wounded in the legs.”<sup>26</sup>

Even though the new weapon promoted confidence, perhaps even aggression, in individual soldiers, it also caused a tactical reform that threatened to sever further the bonds of battlefield leadership by physically dispersing troops. Fighting in open, “skirmish” mode had a long history; during the French Revolutionary Wars and the Napoleonic conflicts, light infantry, riflemen, *jägers*, and *tirailleurs*, fought in fluid clouds or swarms, taking cover to aim their shots, and withdrawing or advancing to disrupt enemy formations. Yet these troops formed a relatively small proportion of infantrymen, essentially an auxiliary to the fighting line, carefully selected for their personal initiative and trained for their specialist role. The mass of infantry fought in denser, close-order for-

26 Henry M. Hozier, *The Seven Weeks’ War* (London, 1872), 166–168; George J. R. Glünicke, 1866: *The Campaign in Bohemia* (London, 1907), 94.



mations (lines, columns, and squares), drawing reassurance from the physical proximity of their comrades and the close supervision of their officers.<sup>27</sup>

In 1866, partly because of successful French bayonet charges in Italy seven years earlier and partly because of a lack of confidence in the abilities of their heterogeneous, polyglot, and poorly educated peasant soldiers, the officers of the Hapsburg Empire elected to storm the Prussian battlefield positions in Bohemia with dense columns of soldiers (in contrast with the more open formations that described contemporary American battlefields, providing a stark reminder of how social and cultural factors could shape military tactics). The rapid-firing needle gun decimated the dense Hapsburg formations at close range. Understandably, Hohenlohe proclaimed that “shock tactics in mass formation” had “lost all use and value.” Instead, in the wake of the conflict, he reasoned, “The essential point of infantry action will always be the individual action in the fire-fight, and that infantry will gain a decisive superiority which has understood how to train each individual man so that he can make the best possible use of his rifle.”<sup>28</sup>

Officers with combat experience called for an unprecedented extension of conventional skirmish tactics, transforming open-order, dispersed action from a mere supporting tactic to the principal form of infantry action and demanding that all infantrymen have the personal qualities of the previously elite skirmisher. In the Franco-Prussian War, the lesson was reinforced as the bolt-action French *chassepot* rifle took a fearful toll of any Prussian unit that manoeuvred within range in close order. In response, individual soldiers began to determine their own tactical styles in combat; “when the Prussian columns were struck by the enemy’s fire they instinctively scattered.” In some instances, common soldiers even took the lead in deciding both the form and timing of an assault. According to the official history of the Franco-Prussian War, during the closing stages of the battle of St. Privat, “in many instances

27 For the development of skirmish tactics, see Griffith, *The Art of War in Revolutionary France* (London, 1998), 207–213.

28 Geoffrey Wawro, “An ‘Army of Pigs’: The Technical, Social and Political Basis of Austrian Shock Tactics, 1859–1866,” *The Journal of Military History*, LIX (1995), 407–434; Hohenlohe, *Letters on Infantry*, 47–49.

of their own motion, the Prussian and Saxon infantry hurled themselves, as the sun was setting, on the position which had been so long and so obstinately defended by the enemy.”<sup>29</sup>

As Hohenlohe noted, “a combination of discipline and individual action” had become necessary to establish battlefield superiority. Von Scherff, a highly influential German tactician, asserted, “We may affirm that individual order has actually become the only battle-formation for infantry.” Across Europe, military authorities were in agreement. In Britain, Mayne’s introduction to his authoritative textbook on fire tactics noted the “deadliness of fire,” “the consequence of [which was] to replace the shock tactics of closed bodies by the fire of extended ones as the ruling principle on battle.”<sup>30</sup>

SKIRMISHERS, STRAGGLERS, AND SKULKERS The proliferation of skirmishers also led to the proliferation of stragglers who drifted back from the firing line and skulkers who played little role in the fighting, remaining out of their officer’s sight behind a wall or in a ditch, as well as those “indolent” men who succumbed to “the natural desire of self-preservation,” avoiding combat altogether. In his diary of military service, Nichols, a private in the Union army during the American Civil War, repeatedly recorded how he spent days of combat “laid in the woods, while the rest were fighting.”<sup>31</sup>

Many of the line infantrymen struggling to find a personal strategy to preserve both body and honor could easily have fallen into the straggler category. As David Thompson, another Union veteran, put it, “[W]hen bullets are whacking against tree-trunks and solid shot are cracking skulls like egg-shells, the consuming passion in the breast of the average man is to get out of the way. Between the physical fear of going forward and the moral fear of turning back, there is a predicament of exceptional awkwardness

29 C. M. DeGruyther, *Tactics for Beginners* (Aldershot, 1904), 127; Balck, *Modern European Tactics*, 270–271.

30 Hohenlohe, *Letters on Infantry*, 49–50; Wilhelm von Scherff (trans. Lumley Graham), *The New Tactics of Infantry* (London, 1873), 17; Charles B. Mayne, *Infantry Fire Tactics* (Chatham, Kent, 1888), 1.

31 Norman K. Nichols (ed. T. H. Williams), “The Reluctant Warrior: The Diary of N. K. Nichols,” *Civil War History*, III (1957), 36.

from which a hidden hole in the ground would be a wonderfully welcome outlet.”<sup>32</sup>

The paradox facing military establishments, as the infantry’s “arms of precision” came into their own during the final decades of the nineteenth century, was that the emphasis on taking proper cover while skirmishing actually encouraged soldiers to seek such “hidden holes in the ground.” In a sense, this kind of training legitimized straggling and skulking. As Hohenlohe put it after observing troop manoeuvres in 1876, “It was impossible to help the feeling creeping over one that in this case a general ‘skedaddle’ was being elevated into a system.” In an influential polemic of 1888, entitled “A Summer Night’s Dream,” Meckel, another German officer, frankly described his first battle in France in 1870 as a “field . . . literally strewn with men who had left the ranks, and were doing nothing. Whole battalions could have been formed from them. . . . Some were lying down, their rifles pointing to the front, as if they were still in the firing line. . . . These had evidently remained behind lying down, when the more courageous had advanced. Others had squatted like hares in the furrow. Wherever a bush or ditch gave shelter, there were men to be seen, who in some cases had made themselves very comfortable.”<sup>33</sup>

Meckel’s tactical theory took the form of a dialogue between himself and “Colonel Hallen.” In his pamphlet, Meckel reveals himself to be shocked at first by Hallen’s suggestion that the army embrace “rejuvenated linear tactics” in which “handy single ranks” delivered the “regulated mass-fire of lines in close order.” Hallen explains that he seeks not to revive the mass close-order formations of the past but to base his tactics around the “Züg,” a unit of about sixty men fighting in a line, like links in a chain, under close supervision of an officer. After a dream about Hallen storming a stronghold at the head of his regiment of close-order “Zügs,” dashing past possible cover without pause—the heavy casualties constantly replaced by fresh reserves—Meckel awoke “thoroughly convinced of the truth” of Hallen’s words. This fan-

32 David L. Thompson, “With Burnside at Antietam,” in Robert U. Johnson and Clarence C. Buel (eds.), *Battles and Leaders of the Civil War* (New York, 1884), II, 662.

33 Hohenlohe quoted in Home and Pratt, *A Précis of Modern Tactics*, 25; Jacob Meckel (trans. Captain Gawne), “A Summer Night’s Dream,” *United Services Magazine* (1890), Pt. 2, No. 740, 357.

tactical vision led many recent historians, such as Jackman, to dismiss Meckel as a reactionary whose commitment to old-fashioned “shoulder to shoulder tactics” was born of a conservative ideology that ignored the domination of the modern battlefield by firepower.<sup>34</sup>

In fact, the years immediately following the publication of Meckel’s work witnessed most European infantries re-equipped with magazine-fed, bolt-action rifles that would seem to have militated against the use of any Meckel-style close-order formations, even handy single ranks of less than 100 men. Rapid-firing and accurate, they were theoretically effective to a distance of 2,000 yards. The British drill book of 1889 considered 800 yards to be the limit of aimed fire, though fewer than 400 yards was preferable. The 1896 drill book re-defined long range to be 1,500 yards and “decisive range” to be within 500 yards. By 1902, the figures were 2,000 yards and 600 yards. Whether such ranges were actually meaningful under combat conditions (except in remarkably open country such as the South African veldt) was debatable but, broadly speaking, the enhanced effectiveness of the modern infantry rifle was unquestioned. Furthermore, the introduction of smokeless powder allowed soldiers to fire without revealing their position. Added to the new weapon’s advantages in firing rate, range, accuracy, and penetrative power, this facility of concealment helped to create what Balck called “the void of the battlefield,” as combatants could now fight, dispersed and hidden.<sup>35</sup>

The fully automated machine gun was also perfected during this era, superseding the mechanical, hand-cranked guns, such as the Gatling. The British army adopted the Maxim in 1891 and the French army, the Hotchkiss in 1897. Attacking troops would now face, as British Lieutenant-Colonel Sisson Pratt put it, “not bullets but veritable chains of lead,” mowing down men “not before the sickle, but the scythe.” The most dramatic progress, however, attended artillery arms. Improvements in metallurgy, munitions, and powder increased the effective range of field guns twofold—to

34 Meckel, “Summer Night’s Dream,” Pt. 1, No. 739, 205–229; Pt. 2, No. 740, 356–376; Pt. 3, No. 741, 385–402; Steven D. Jackman, “Shoulder to Shoulder: Close Control and ‘Old Prussian Drill’ in German Offensive Infantry Tactics, 1871–1914,” *Journal of Military History*, LXVIII (2004), 94–95.

35 “Experiments at Spandau to Illustrate the Penetration of German Rifles,” *Journal of the Royal United Services Institute*, XXXVI (1892), 925; T. Miller Maguire, *The Development of Tactics* (London, 1904), 94–100. Balck quoted in Echevarria II, *After Clausewitz*, 70.

more than 7,000 yards—and the development of recoil mechanisms that kept guns in place after firing significantly increased the rate of fire. The French 75mm gun of 1897 could fire more than twenty rounds per minute. In 1892, Colonel H. M. Bengough thought that “the importance of artillery in the battlefields of the future will . . . be found to have increased in a greater ratio than that of any of the three arms. So vast indeed is the difference in training and material between the artillery of to-day . . . and that of quarter of a century ago, that it would be impossible to foretell its effect in the next century.”<sup>36</sup>

Neither Meckel nor his numerous admirers were blind to these developments. However unrealistic “the summer night’s dream” seems, the tactical conundrum of how to ensure that soldiers did their duty without exposing them to devastating fire was real: “Our desire for discipline and our love of dispersed order pull us in opposite directions.” This contradiction would bring the question of “moral factors” to the fore once more, since the choices made by soldiers on the dispersed battlefield could often make the difference between victory and defeat. Far from taking the obedience of their soldiers for granted, or assuming that battalion officers could maintain discipline in battle, senior officers viewed knowing the temper of their men as an essential component of modern combat leadership.<sup>37</sup>

A Russian general’s explanation of modern command to an American military observer during Russia’s war against the Ottoman Empire in 1877/78 acknowledged the importance of understanding the psychology of soldiers in battle:

The only formation in which troops can successfully assault intrenched [sic] positions is in successive lines of skirmishers. . . . There are in every command a small percentage of cowards who will slink away at the first opportunity, a certain number of men of rash bravery who will go too far forward and get killed, and the great majority of men of ordinary courage, but liable to waver as the fight gets hot. The reserves must be sent in at the moment when the reasonably brave men have been long enough engaged and met with resistance to begin to feel nervous, but before they have actually begun to retreat; and it is in deciding upon the oppor-

36 Sisson Pratt quoted in Echevarria II, *After Clausewitz*, 71; Harcourt M. Bengough, “Combined Tactics,” *Journal of the Royal United Services Institute*, XXXVI (1892), 798.

37 Meckel, “Summer Night’s Dream,” Pt.1, 206.

tune moment for sending forward his reserves that the art of a divisional commander consists.<sup>38</sup>

**CASUALTIES AND MILITARY OBJECTIVES** Besides emphasizing the centrality of moral factors in command decisions, the Russian general's lesson in command is a reminder that maintaining the will to fight and holding ground or physically advancing was as significant as inflicting casualties. The recent historiographical trend that focuses on aggression and the act of killing obscures what soldiers were expected to do in combat. The emphasis on killing as the "characteristic" act, and ultimate rationale, for soldiers in war owes much to the priority given to body counts and kill ratios as measures of tactical efficiency during the late twentieth century. Dupuy's analysis of Germany's military effectiveness in the two World Wars was highly instrumental in establishing this position. By comparing casualty statistics from selected engagements (and calculating a scale on the basis of respective army strengths and battle duration, adjusting for such factors as the influence of field fortifications), Dupuy argued that during World War I, the Germans consistently inflicted losses upon the Western allies at the favorable ratio of three-to-two, thereby demonstrating their tactical superiority. Dupuy's methods reduced military activity to a simple statistical equation, judging tactical performance solely by casualty rates while paying no heed to the achievement of such wider objectives as the seizure of a height, the forcing of a river line, or the defense of a wood or village.<sup>39</sup>

For Meckel's generation, the achievement of field objectives in spite of casualties was the mark of military efficiency. Understanding fully the devastating potential of modern weapons, they expected soldiers, first and foremost, to endure: "Have not Prussian lines . . . held together and closed-up until two-thirds of their number lay on the ground? A well-seasoned company will certainly not fall to pieces till its fighting power is completely shat-

38 Francis V. Greene, *The Russian Army and Its Campaigns in Turkey in 1877–1878* (London, 1879), 450–451.

39 Dupuy, *A Genius for War: The German Army and General Staff 1807–1945* (Fairfax, 1984), 178, 328–332. In addition to the fundamental dubiousness of reducing history to a simple numeric equation, the other great flaw in Dupuy's work was its statistical database. His analysis of comparative losses on the Western Front made no mention of how reliable the respective casualty figures were; the precise figures that Dupuy chose seemed calculated to demonstrate a casualty ratio favorable to the Germans.

tered.” By the end of the nineteenth century, conventional military wisdom held that an effective fighting formation would not consider withdrawal until it had suffered savage losses and that in an infantry assault, the attacking troops must continue to move forward while their comrades fell around them. The point applied equally well to the mounted arm. As Gough wrote to Lord Frederick Roberts, his former commander-in-chief, in 1910, “[where] infantry can run, cavalry can gallop,” so long as they were prepared “to stand a 25% loss quite as much as their comrades of the other arms.”<sup>40</sup>

The often scathing criticism of how British troops performed in South Africa from 1899 to 1902 was redolent of this same attitude. The German official account sneered that after the “fruitless yet by no means especially costly attacks on Paardeberg” in February 1900, resulting in 1,300 casualties, “there began to spread a nervousness of suffering loss. . . . [O]ne substantial reason for the long duration of the war was, undoubtedly, the timorous avoidance of striking any crushing blow at the Boers.” After the mauling that many of their infantry formations had suffered on the veldt, the British placed their faith in extending battle lines, with little depth to formation, relying on sudden rushes covered by fire to move forward on the battlefield. Continental European observers, however, frequently criticized such casualty-averse tactics as lacking the necessary weight to carry a position. Denser formations would have suffered far greater losses, but an efficient infantry would have had the fortitude to continue their advance.<sup>41</sup>

Strikingly, the new attention that the military establishment paid to the psychology of soldiers left behind the idea that rigid discipline and the threat of severe, physical punishment was necessary to keep men in the line of battle while all around them fell. Meckel, for one, was confident that in a maturing, industrial soci-

40 Meckel, “Summer Night’s Dream,” Pt.1, 221; Hubert Gough to Roberts, letter, February 10, 1910, *The Papers of Lord Frederick Roberts*, ms 7101-23-223-11, National Army Museum, London.

41 German General Staff (trans. W. H. H. Walters), *The German Official Account of the War in South Africa* (London, 1907), 226. For immediate British responses to the South African War, see Arthur W. A. Pollock, *Simple Lectures for Company Field Training with An Epitome of Tactics and Lessons from the Boer War* (London, 1900), 34-40; Charles E. Callwell, *Tactics of To-Day* (Edinburgh, 1903), 52-84. For a useful contemporary summary of French and German critiques, see Colonel Beca (trans. A. F. Custance), *A Study of the Development of Infantry Tactics* (London, 1911), 60-70.

ety, well-educated conscripts could be conditioned ideologically to do their duty: “Universal service gives now a better metal than the iron of which [Frederick the Great’s] warriors were composed. . . . [C]areful attention to the individual . . . may convert this metal into the best steel . . . Nowadays a sense of honour nobly replaces the stick.”<sup>42</sup>

Europe’s theoreticians found the perfect model of successful assault in the Japanese infantry, which, seemingly heedless of loss, stormed through Russian entrenchments and fortifications at bayonet point during the Manchurian conflict of 1904/05. It might be tempting to dismiss Japan’s achievement in Manchuria as merely an indication that its commanders were willing to smother the enemy in human flesh (the 50,000 Russian defenders claimed to have inflicted 60,000 casualties on the besiegers of Port Arthur before they finally surrendered). But contemporaries were well aware of the advantage that modern technology and tactical sophistication gave to the Japanese soldiers. European soldiers particularly lauded how the Japanese used machine guns: “On the battlefield the guns were used not only on the defensive but were also boldly pushed forward with the attacking infantry. Towards the end of the war there was the disposition to use the guns in masses [and] they were also used to good effect in securing a captured position from a counter-attack.”<sup>43</sup>

Yet commentators were most impressed with the “moral” qualities that Japanese soldiers displayed—their innate “fighting power” and their willingness to endure heavy casualties—often citing them as the decisive factor in the war. As Becke, late of the Royal Artillery, put it, “The Japanese success appears to have been largely due to the excellent quality of their troops, whose training, courage, intelligence, self-reliance, and patriotism were of a high order. . . . [T]he Japanese soldier also had been taught how to die, and his country expected him to die victorious.”<sup>44</sup>

Meckel was the man responsible for training this formidable army. The triumph of his methods in that seminal conflict (the first between two major powers in the twentieth century) serves as reminder that he, and those of his fellow officers who stressed the

42 Meckel, “Summer Night’s Dream,” Pt. I, 218.

43 A. Hilliard Atteridge and F. V. Longstaff, *The Book of the Machine Gun* (London, 1917), 52–53.

44 Becke, *Introduction to the History of Tactics*, 95



continued significance of moral factors in war, were not simply military conservatives but progressive figures whose interest in the psychology of the soldier was as modern as their appreciation for the effectiveness of the new weaponry. Indeed, they saw the technological and the psychological as intertwined: The autonomous soldier's state of mind on a battlefield swept by modern firepower could be the difference between victory or defeat.<sup>45</sup>

In the final analysis, however, Japan's victory in Manchuria was not a vindication of Meckel's "rejuvenated" form of close-order tactics. Contemporary propaganda notwithstanding, the bloodied Japanese army was close to breaking point when it finally won in 1905. In 1914, when many European field officers strangely broke with accepted tactics to employ close-order formations in Lorraine, the Ardennes, and Flanders and on the banks of the Sambre, the scale of casualties proved prohibitive. As the war progressed, they returned to dispersed formations, achieving control of their soldiers on the battlefield through the radical devolution of authority to junior and noncommissioned officers. The flexible platoon of sixty soldiers, fighting in sections of eight to twelve men, became the basic tactical unit of "fire and manoeuvre"; soldiers were free to create and exploit battlefield opportunities on their own initiative. The principles of modern tactics took account not only of the lethality of modern weapons but also of the moral factors that shaped men's actions in battle.<sup>46</sup>

The darker legacy of this new psychological and ideological orientation, which was of profound significance in the history of the twentieth century's unconstrained and brutal "total wars," was the invigorated interest in conditioning a nation's manhood for war—to make men of "steel," in Meckel's phrase. Although total-

45 Echevarria II, *After Clausewitz*, 41.

46 For evidence of the gap between tactical doctrine and practice in 1914, see Echevarria II, *After Clausewitz*, 213–215; Jonathan M. House, "The Decisive Attack: A New Look at French Tactics on the Eve of World War I," *Military Affairs*, XL (1976), 164–169. For descriptions of the flexible platoon, see Ivor Maxe, "The 'Soft Spot': An Example of Minor Tactics," in *Hints on Training and Training Leaflets* (Cologne, 1919), 65–73; S.S.143: *The Training and Employment of Platoons, 1918* (1918); U.S. Army War College, *Instructions on the Offensive Conduct of Small Units* (Washington, D.C., 1917; orig. pub. in French 1916). For secondary analysis of this tactic, see Bruce Gudmundsson, *Stormtroop Tactics: Innovation in the German Army 1914–1918* (New York, 1989); Griffith, *Battle Tactics of the Western Front* (New Haven, 1994); Hubert Johnson, *Breakthrough! Tactics, Technology and the Search for Victory on the Western Front in World War I* (Novato, Calif., 1994).

itarian regimes were the major villains in this regard, the widespread propagation of military values into civilian life had become apparent even in liberal societies by the late nineteenth and early twentieth centuries. The popularity of quasimilitary training for children, through such organizations as the Boy Scouts, is one example. The dissemination of a once-elitist “public school ethos”—stressing muscular Christianity, patriotism, and duty—to all members of society via juvenile literature, popular songs, or theatrical productions is another. Yet the ultimate manifestation of the nineteenth-century military theorists’ emphasis on the “moral factor” in war was neither the spread of the military ethic into democratic public life nor the doomed heroism of frontline soldiers in World War I. Military morality reached its peak in the indoctrination and propaganda of the Nazi and Soviet regimes, becoming most visible in the fanaticism of the Soviet commissar and the “political soldiers” of the SS and the *Einsatzgruppen* in World War II.<sup>47</sup>

47 For dissemination of the public-school ethos, see W. J. Reader, *At Duty's Call: A Study in Obsolete Patriotism* (Manchester, 1988); Peter Parker, *The Old Lie: The Great War and the Public School Ethos* (London, 1987). For the ultimate manifestation of the moral factor, see Omer Bartov, *The Eastern Front 1941–1945: German Troops and the Barbarisation of Warfare* (Basingstoke, 1985); Jürgen Förster, “Ludendorff and Hitler in Perspective: The Battle for the German Soldier’s Mind, 1917–1944,” *War in History*, X (2003), 321–334; Edward B. Westermann, *Hitler's Police Battalions: Enforcing Racial War in the East* (Lawrence, 2005).