THE NEW ATLANTIS
A JOURNAL OF TECHNOLOGY & SOCIETY

Military Technology and American Culture

Victor Davis Hanson

War reflects culture. Weaponry, tactics, notions of discipline, command, logistics—all such elements of battle arise from the nature of a society's economy, politics, and sociology. This is as true for the American military today as it was in ancient and medieval times, and as true for non-Western as for Western civilizations. For example, the files of the ancient Greek phalanx and the preference of its heavy-armored hoplites for quick, decisive, shock battles over farmland grew out of a society of free-holding agrarians. Hoplites purchased their own armor, worked farms of roughly equal size, and voted in land-owning assemblies on the condition of their own military service. Compare this to the rapid mounted onslaughts of nomadic horse-peoples of the steppes, or the huge imperial, multicultural, and bureaucratic armies of autocratic and palatial Egypt and Persia.

Western warfare in general over two-and-a-half millennia has shown a singular dynamism, a propensity to exercise military power abroad that is not explained by the rather small population and territory of Europe. Why is this so? To generalize broadly: reliance on group discipline, confidence in a greater degree of personal freedom and individualism, a faith in rationalism more likely to be divorced from cultural or religious stricture, open markets, civic militarism arising out of consensual government, and civic audit of military operations. All these traditions filtered down to the battlefield, embodying both the contradictions and unique achievements of Western civilization. Such advantages—sometimes nearly lost or vastly altered over 2,500 years—allowed Western armies from Alexander the Great and the Crusaders to colonialists and present-day European and American militaries to trump the usual criteria that explained tactical victory or defeat: weather, numbers, location, individual genius and bravery, and simple chance.

Paramount has been the role of military technology. Westerners did not invent triremes, stirrups, or gunpowder. But their greater propensity to encourage unfettered research and profit through free exchange and markets ensured that Europeans soon improved on such inventions in a way impossible elsewhere. European navies and armies went to Tenochtitlán, Zululand, and China rather than vice versa because of singular ocean-going ships, superior guns, and better

---

Victor Davis Hanson *is visiting Shifrin Professor of Military History at the United States Naval Academy, a professor of classics at California State University, Fresno, and a research fellow at the Hoover Institution at Stanford University.*

supply. It is not that the West did not suffer occasional battle defeats or learn from other illustrious military traditions or steal military inventions from abroad. But Westerners were able to fashion a flexible military culture that could overcome setbacks and spread influence well beyond the shores of an often divided and warring Europe.

While American military practice is inexplicable apart from this larger Western tradition, the American character and the peculiar history of the United States make its military force effective in ways that transcend the nation's large territory, plentiful resources, and population. This military power is unmatched by contemporary Europe—a fact that suggests, as many have written, that America and Europe may be heading in different cultural directions. This exceptionalism has much to do with both America's origins and recent past—both our democratic culture and frontier history, but also our unique role in World War II and the Cold War that followed it. In general, the United States has taken preexisting Western notions of political and economic freedom, the culture of individualism, and the commitment to constant self-critique and change, and advanced these practices nearly to their theoretical limits. And while there is much to say about the divide between America's military and civilian cultures, the shared dynamism of both is far more significant for understanding the future of American military power.

Why We Fight As We Do

Without a national religion or a common race or ethnic culture, Americans are united primarily by shared ideas and commitments, such as equal opportunity and individual merit, as well as the history and legends that give these ideas concrete meaning. Our military functions as a reflection of our national meritocracy, where wealth and breeding do not necessarily guarantee rank and privilege. In theory, this meant a gifted but shabby-looking general like Ulysses S. Grant—a failure in both earlier civilian and military life—rather than the aristocratic ex-railroad president George McClellan, could successfully lead the Army of the Potomac. We admire the uncouth George Patton for his often crude genius, despite, not because of, his aristocratic roots—in the same manner that the plebian background of an Omar Bradley or Dwight Eisenhower often seemed to work to their advantage. This reliance on merit rather than class has usually given us singular commanders who were swash-buckling and unseemly—a Nathan Bedford Forrest, William Tecumseh Sherman, or Curtis LeMay—who might otherwise have found little opportunity in more aristocratic or tribal militaries.

Second, the frontier experience on such a vast continent made Americans intent on conquering time and space, explaining why European inventions in transportation and communication came into their own in America on a scale undreamed of elsewhere. America's role as a "receptacle of the unwanted"—an

arena where audacious individuals, fleeing from poverty or discrimination, were in a hurry to start over and succeed rapidly—only added to the restless fascination with machines that were so disruptive of the traditions and tranquility of the past. If the Civil War started off with flintlocks, it ended a mere four years later with the coming of dreadful new weapons, such as repeating rifles (lever-action Spencers spitting 7 shots in 12 seconds), Gatling guns (200 shots per minute), and ironclad warships with 11-inch guns.

Taken together, there was a breakneck quality to American life where immigrants sought to find immediate status and economic security—often through an embrace of modernism and a rejection of tradition and custom. In reaction, American militaries have always reflected just that emphasis on impatient mobility and mass production—made easier because our youth are intimately acquainted with equipment of all sorts, from Model Ts to video games. American 16-year-olds drive, own, fix, and customize cars. We entrust them at an early age with expensive and sometimes dangerous machines, whether pick-up trucks, tractors, or forklifts, perhaps explaining why 20-year-olds drive 70-ton Abrams tanks and wave in $50 million jets to the decks of $5 billion carriers.

Those who "rolled with Patton" across France were at home with tank, truck, and jeep engines; they were eager and able to fix broken equipment. Unlike modern Arab armies, Patton's problem was not an inability to keep his motorized fleet in good repair, but rather the shortage of gasoline and the ensuing boredom when thousands of restless GIs ground to a halt in September 1944. It was no accident that American divisions in the Second World War were the most mechanized of all those in the conflict—almost 4,000 vehicles in each division, allowing 16,000 men to move at almost 50 miles per day across poor roads. Americans move hundreds of thousands of troops to new Persian Gulf quarters in the same way they build housing tracts here at home—rapidly, en masse, and with an eye to the next project even before the job is done.

Unlike the craftsmanship of Hitler's tanks and machine guns, which were qualitatively superior but harder to maintain and not easily mass produced, Americans sought to turn out almost limitless supplies of easily accessible weaponry—Sherman tanks, B-24 bombers, and M1 assault rifles—to achieve quantitative advantage. True, a ponderous 56-ton German Tiger tank could blow apart dozens of Shermans. But there was no guarantee that it would be around when hordes of the latter swarmed German rifle brigades. By 1942, U.S. industry was turning out more warplanes annually than Germany, Japan, and Britain combined, despite America's virtual disarmament until the late 1930s.

If German technical and engineering genius at war's end had produced the world's first guided missile (the V-2), the first jet fighter (the Me-262), and the first surface-to-air missile (the Waterfall), it was the American propensity for mass production, coupled with constant debate about the mission and nature of

such weapons, that made their successors appear in such great numbers in the Cold War arsenal of the United States. And despite the wizardry involved in crafting guided missiles and jet fighters, we should remember that neither weapon in World War II did a fraction of the damage done by thousands of B-17 bombers and P-51 fighters, which were mass-produced, reliable, easily piloted, and constantly improved. Hitler's madcap directives for V-2 production—without American-style audit and consensus—cost as much money as the Manhattan Project, but one atomic bomb had more firepower than all the German V-2s put together.

In addition, unlike the Soviet experience or even modern European practice, Americans tended to distrust central government and state-run industries. A nation of citizens with the constitutional right to bear firearms has kept most of the American arms industry outside state arsenals or at least in the hands of private subcontractors. Such companies usually operated more on free market principles, guaranteeing a greater propensity to produce cheaper and more plentiful weaponry. Since 1945, it is hard to think of other militaries that have produced better or more numerous carriers, jet fighters, or tanks. For nearly thirty years, the Soviets achieved theoretical military superiority in central Europe, but the Warsaw Pact's advantages in the numbers of tanks and artillery were explained by its favorable location and Russia's spending 30 to 40 percent of its GNP on defense versus 4 to 6 percent allotted by the United States. In the end, as we learned, this "superiority" was unsustainable.

In short, the culture of the United States—characterized by an emphasis on youth, individualism, and restlessness—is evident in our manner of making war. The controversial practice of widespread gun ownership in the United States has meant that American youth do not grow up afraid of or inexperienced with firearms. Young people with guns do not arouse the suspicions of the state police or incur social ostracism. And from the pensions of the Grand Army of the Republic to the GI Bill, the American military has been closely integrated with American society, whether as a source of income in old age or subsidies for continuing education. The result is that military service and the idea of using weapons are not seen as strange or antithetical to our society at large—as is true in contemporary Europe. Rather, shooting guns in uniform is accepted as not only central to the defense of our country but as a legitimate avenue for career advancement—all in a democratic climate deeply suspicious of militarism. American ideas of muscular independence are deeply embedded in our frontier experience, when guns and the willingness to use them were a means to feed one's family, enforce justice when the "law" was a three-day's ride away, and form ad hoc militias to hunt down organized intruders, rather than serving in a centralized and permanent army.

Rising Expectations and Modern War

American thinking about military strategy reflects these larger restless imperatives and thus puts a premium on employing overwhelming firepower to end wars quickly—as in Grant's bloody hammer blows at the Wilderness and Cold Harbor, Pershing's insistence on keeping a cohesive American army for massive assaults on German lines, and the Overlord strategy of simply blasting a path through Normandy across the Rhine. Even our most skilled and successful commanders, who sought to avoid casualties by the employment of flank attacks or deep penetrations into the enemy heartland, always labored against the charge that they were afraid of head-on assaults that might more quickly batter the enemy and end the war. With such vast reservoirs of men and materiel, conventional American doctrine asked: Why not use them to win quickly and go home?

Aircraft carriers are perhaps the best symbols of the contradictory American desire to be mobile, independent, and yet overwhelmingly powerful. They have now evolved into a virtual American institution. France has one, England three—all four together possess less offensive power than any one of our twelve. Indeed, an American carrier's flight deck of almost five acres possesses more lethal planes than the entire air force of most other nations. These 90,000-ton homes to 5,000 men appear to the untrained eye as clumsy behemoths, but they can cruise 500 miles in a day, at clips of 35 knots, without seeking the permission of nearby countries or granting concessions to hosts for landing rights.

But this American restlessness has also meant that political pressure can quickly mount against wars that get bogged down with high casualties and little progress. For example, given the meat-grinder in Northern Virginia in late 1864, if Sherman had not taken Atlanta in that same autumn, Lincoln might well have lost the November election to McClellan and the Copperheads. By late 1951 the United States had essentially stopped North Korean and Chinese aggression, and was poised to retake the North. Yet public opinion was tired with a conflict that did not seem to ensure decisive and immediate victory and so settled for stalemate. Despite the establishment of a viable South Vietnamese government by 1973, the American public, after nearly a decade of fighting, was in no mood to continue bombing to repel the communist invasions of late 1974 and 1975 that violated the armistice. And so we lost the peace, not the war.

More recently, this American proclivity to demand immediate results in short wars has intensified under the forces of rising affluence, increasing leisure, and the suburbanization of the population. Our critics (mostly a mix of tough-talking hawks at home and left-wing elites in Europe) complain of a prevalent American "body bag syndrome," or the reluctance of the United States military to suffer casualties, and thus the tendency to rely more on aerial bombardment—as in Gulf War I, Serbia, and Afghanistan—rather than on complex and often messy infantry assaults.

Despite the American tendency to use military force far more readily than our European allies, we still find it difficult to ask for real sacrifices for military action from our populace—a citizenry that has achieved a level of personal security and comfort unprecedented in the history of civilization. Much American support for the war in Iraq comes with the expectation of few casualties and quick success. And our new defense culture takes shape within these twin parameters of personal safety and reliance on high-technology—so that we can inflict many, but not incur any, losses, and so that we can kill with greater precision from ever further away.

American culture and military technology have also shaped our approach to multilateralism, or the desirability of using force only under the auspices of international authorities. In fact, America's deep-rooted individualism, coupled with our distance from Europe and Asia, has never made us very comfortable with fighting in coalitions. For the first 130 years of our history, we conducted no major wars outside our own continent; and while we intervened constantly in South America, Asia, and North Africa, nineteenth-century American marines and gunboats usually did so solely under the direction of the President. We came into both World War I and World War II late, and were always somewhat uneasy with our allies, preferring to work mostly alone in the Pacific war from 1942 to 1945. NATO was not involved in Vietnam, a war that remained for good or evil mostly an American unilateral affair. And looking back to the first Gulf War, the chief criticism of the first Bush administration was the failure to invade Baghdad and remove Saddam Hussein. This unfortunate lapse is usually attributed to the fear of losing Arab support and dividing our U.N.-mandated coalition—a restraining multilateralism not repeated against Milosevic or in the current campaign against Saddam Hussein.

This spirit of military independence has grown with our increasing confidence in the unrivaled capability of our military power, as well as our growing sense of being the only force on the world scene capable of ensuring order in the post-Cold War, post-September 11 world. Our long commitment to a blue-water navy, multi-stage guided missiles, long-range bombers, ABM systems, Mach 2 interceptors, star wars, and airborne divisions reflects this desire to project military power abroad, with minimum reliance on other nations, while keeping the battlefield away from the continental United States.

The Future of American Warfare

So what is the future of American military practice, both technological and strategic? Will it conform to these general cultural traits so deeply embedded in our past? Technologically, we will continue to seek ways of conducting small-scale wars rapidly with few casualties—along the lines of employing current GPS bombs and cruise missiles that can be accurately guided by a few highly

trained ground operatives with laptops, cell phones, and radios. For larger theater conflicts, we may return to the past practice of "more not just better," as the costs of high-tech weaponry and training reach astronomic levels. In World War II, America produced tens of thousands of durably built and simply operated fighters and bombers; we may see a similar reliance on mass-produced and inexpensive weapons in wars to come. The exorbitant expense of individual aircraft—B-2 bombers, for example, cost over $1 billion each, older B-1 bombers cost $250 million—coupled with the idea of the inviolability of our pilots' lives, is already turning our attention to the mass-production of drones. Sending a fleet of 100 Predator drones with Hellfire missiles against a target might be as cheap and effective as a couple of multimillion-dollar Air Force F-22 strike fighters with high-priced cruise missiles.

We are, in short, on the horns of a dilemma. We spend too much money on too few weapons, thus raising constant worries over the catastrophic financial consequences of losing a B-2 or F-17—even as we see spectacular one-sided victories precisely because of the qualitative superiority of these assets. Drawing on the entrepreneurial genius of Silicon Valley and its peers, coupled with the engineering and technological savvy of our universities, has ensured space-age weaponry far in advance of anything seen abroad. But the very temptation constantly to evolve and improve this technology has meant that we are now caught in the position of having ever fewer near-perfect arms rather than a plethora of very good weapons that will do.

Emphasis on defense—from body armor to anti-ballistic missile systems—will become an ever higher priority as ever more affluent Americans, like Greek hoplites of old, grow increasingly sensitive to the casualties of war. The current weight of 60 to 80 pounds of gear that so burdens individual soldiers is not so much to provide them with additional offensive power as to ensure better communications, body protection, and survivability. This effort to ensure the absolute minimum of casualties may ultimately lead to the removal of the human agent whenever possible: after all, there is no strategic reason why the robots we now see in the sky will not soon descend to the battlefield itself.

At the same time, America's latent suspicion of the costs of military service abroad may reassert itself in the century to come. With the demise of the Soviet Union and disappointments with our allies in the present conflicts, we may see a gradual tendency to return to pre-Cold War characteristics of muscular independence, including the development of new technologies that explicitly serve this purpose. We are often criticized as interventionist, but in fact America's traditional propensity has been more isolationist—willing to act forcefully in the world when absolutely necessary, but preferring to be unencumbered. Over time, the United States may look for ways—strategic and technological—to keep the global peace without involving ourselves in the political and cultural quagmires

abroad that we usually associate with traditional alliances and bases.

American planners will probably seek not merely alternate bases in Eastern Europe, but greater reliance on lightly-manned military depots, multifaceted sea- and land-based anti-ballistic missile systems, renewed commitment to carrier forces, and novel technologies that might provide floating, mobile airfields, rapid ship transport, and increased airlift capacity. America's tendency toward isolationism will never really disappear even as our global responsibilities increase. We will seek new technologies that would allow Americans to serve abroad in ways that require the least amount of political concessions and obligations to foreign hosts while preserving a wide range of military options.

For example, if we believe that North Korea means to blackmail the United States by holding Los Angeles hostage or threatening to shell our troops in the DMZ, the way of facing such a crisis will not likely be to bully an appeasing Seoul or rally a confused Tokyo in the hope of creating a united front built around a conventional coalition of ground troops. Instead, we might prefer to encircle the peninsula quickly and unilaterally with stealthy submarine-based ABM systems that could hit Pyongyang's nukes in their nascent trajectory, keep our forces at sea ready but uncommitted, and then let the concerned powers ask us for advice and support rather than the reverse. A small air base, with fortified and subterranean hangars in little populated areas far to the south in Korea, might be more advantageous to our national interest than exposing conventional forces right on the DMZ.

It is, of course, always a fool's errand to predict too far into the future. The most dangerous tendency of military planners is the arrogant belief that all of war's age-old rules and characteristics are rendered obsolete under the mind-boggling technological advances or social revolutions of the present. Tactics alter, and the respective roles of defense and offense each enter long periods of superiority vis-à-vis each other. The acceptance of casualties is predicated on domestic levels of affluence and leisure. But ultimately the rules of war and culture, like water, stay the same—even as their forms and their pumps change. If robotics removes more and more humans away from the battlefield, it is still likely that the people who pilot, direct, and make such machines will become targets—however far away they are ensconced from the frontline killing. And if in our moral repugnance for war we develop more discriminating weapons that stun rather than kill our adversaries, we may be confronted with the dilemma of letting those with evil pasts and bloody hands escape, only to inflict more deadly misery on the innocent.

Americans will always remain deeply ambiguous about, but very good at, fighting wars abroad. They will be restless, impatient, and intolerant of delays and losses, and seek to find ways through overwhelming firepower to win quickly without incurring fatalities. Our weapons and strategies will continue to reflect just those unchanging realities.