The Utility of Force in a World of Scarcity

From the dawn of modern history to the mid-twentieth century, relations between states were conducted in an atmosphere darkened by the ever present possibility of violence. Although moral conceptions imposed some restraints on the actions of statesmen, in the absence of a world government and firm moral consensus, issues could rarely be settled solely by appeals to reason and justice. Coercion, not persuasion, was thus an all-too-frequent means of resolving disputes, and because the resort to force could never be completely precluded, organized violence became the most effective form of coercion and the ultimate arbiter in world politics. Even when disputes were ended through negotiation, the threat of force still lay in the background and shaped the results profoundly. As Nicholas Spykman concluded in the grim world of the early 1940s, world politics is power politics and the ultimate form of power in that domain is military force.¹

In the past five decades, however, the great powers have shown increasing reluctance to employ force overtly against one another or even against weaker states. Their apparent hesitation has led several sophisticated observers of international affairs to conclude that the once-central role of armed force is rapidly diminishing, perhaps soon to the point of irrelevance. The central assertion of these authors is that the costs, risks, and difficulties in applying force are rising while the benefits derived therefrom are declining.² This optimistic school has presented an impressive case with important implications for

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The future of international politics, the academic study of international relations, and the conduct of U.S. foreign and defense policy. It deserves a serious and systematic response. The aim of this article is to provide it. It commences with a critical review and synthesis of the arguments that have been offered to sustain the conclusion that force is declining in utility. The following three sections, which comprise the bulk of the article, then describe, explain, and analyze the consequences of three ongoing developments that may confound optimistic expectations by increasing the ease and value of territorial acquisition and thereby heighten the importance of military force in world politics. These trends are the revolution in military affairs (RMA), the coming surge in world population, and the spread of industrialization to the developing nations. The concluding section considers the prospect that, at some point in the next century, the international arena could return to a Hobbesian state of war.

Grounds for Optimism

Many observers have attributed the diminished visibility of military force above all else to the presence of nuclear weapons. Not only do these fearsome devices act as mutual deterrents, they maintain, but the prospect that even the most limited use of force could set in motion a process of unintended and uncontrollable escalation discourages the resort to violence at any level. The unprecedented destructiveness of the atomic bomb has compelled states to resolve conflicts through tests of will rather than overt violence. These contests are won by the side that conveys an image of superior credibility and determination. Because states are usually more committed to preserving their territory and independence than their opponents are to aggrandizement, the defender enjoys an enormous advantage. Furthermore, the victor in a nuclear war would find the radioactive “inheritance” in his possession afterward small recompense for the devastation the enemy could visit on his own land. Hence nuclear force is so “useful” for the defense of territory that it reduces conventional offensive forces to impotence, thereby eliminating the risk of attack and freezing the territorial status quo.  

Yet it is difficult to reject a priori the possibility that if nuclear weapons were generally perceived to be so destructive as to be unusable states would no
longer be intimidated from initiating conventional wars by the prospect of escalation. Although the “balance of interests” may indeed favor the defender in most instances, it is certainly conceivable that a leader with a high tolerance for risk, strong domestic support, or extraordinary thespian talent could create an all-too-credible impression among his opponents that he is more committed to altering the status quo than they are to preserving it, particularly if the defenders were attempting to extend deterrence beyond their borders. Had Britain and France possessed nuclear weapons in 1936, for example, would they have been able to deter a nuclear-armed Hitler from occupying the Rhineland, achieving Anschluss with Austria, or seizing the Sudetenland? In any case, nuclear powers have been challenged by conventional force frequently enough since 1945 to raise serious doubts about the reliability of nuclear deterrence. Consider the following anomalies: China’s attack on the United States, 1950; China’s on the Soviet Union, 1969; Vietnam’s on China, 1979; Argentina’s on Britain, 1981; and Pakistan’s on India or vice versa. For A.F.K. Organski and Jacek Kugler, to maintain that nuclear weapons deter conflict at all levels in light of such evidence is “to believe in magic.”

The absence of war between the Soviet Union and the United States, the “long peace” of the Cold War, has often been attributed to the presence of nuclear weapons. But the U.S. arsenal was too small in the late 1940s and too conspicuously unsuccessful in deterring Soviet encroachment on Eastern Europe to provide an entirely convincing explanation. It is often forgotten that the division of Europe stemming from the diplomatic deadlock at Yalta satisfied the basic security objectives of both the Soviet Union (protection against a renascent Germany) and the United States (preservation of a balance of power in Europe) simultaneously. Although both hoped for something better—the Soviets, for revolution in the West, and the Americans, for self-determination in the East—neither would have been strongly inclined to risk another conflict on the scale of World War II to improve the Yalta system, even if nuclear weapons had never been invented. The stability of Cold War Europe thus rested to an important degree on the weakness of any incentive to alter the status quo. Were nuclear weapons to be introduced into a situation where two rivals find it more difficult to achieve their fundamental objectives simultaneously, nuclear deterrence would be put to a much sterner test.

John Mueller believes that force soon will be obsolescent, but his conclusion does not stand or fall solely on the effects of the nuclear revolution. Atomic weapons, he contends, have served mainly to underscore what was already abundantly clear by 1945: conventional war as fought twice on the European continent had already become so destructive as to be virtually useless as an instrument of foreign policy. Fission bombs destroyed Hiroshima faster but no more thoroughly than conventional ordnance had leveled Dresden and Tokyo. Eliminating the bomb in order to fight total conventional war, Mueller reasons, would simply mean jumping from the fiftieth rather than the fifty-first story of a building.6

Even when the risks of escalation are deemed controllable or acceptable, the economic and political costs of battle appear to have increased. War not only requires costly expenditures on increasingly expensive weapons systems, but can also rupture mutually beneficial commercial relations. The strong, it is often said, can no longer effortlessly impose their will on the weak as in the nineteenth century. Advanced military powers now face more effectively organized peoples inspired by intense nationalism, such as those in Vietnam and Afghanistan, who are difficult to subdue by any morally acceptable means. Public opinion among the most advanced states has grown much more critical of the use of force, although there is not complete consensus as to why. Mueller asserts that human lives—and not only those of one's own soldiers but those of the enemy—are simply valued more highly than in the past.7 Some scholars contend that a "postmodern culture" of individualism, cosmopolitanism, and distrust of government has prevented potential great powers from developing and projecting military might as they once did. Others suggest that television has magnified the psychological impact of any loss of life, rendering democracies increasingly squeamish about casualties.8 In any case, the revulsion of the American public to the deaths of several U.S. soldiers on October 3, 1993, in Mogadishu and the long hesitation of the European powers to intervene in Bosnia demonstrate the low tolerance of democratic publics for casualties on distant (or even proximate) battlefields. In this climate of opinion, it is difficult for leaders to present a compelling rationale for the employment of force and to carry out the action without facing heavy political damage.

7. Ibid., p. 9; and Rosecrance, Rise of the Trading State, p. 131.
The potential gains from the use of force also appear much less attractive than in the past. Many of the most important issues of the present and future do not depend on who occupies a given territory, but rather on what is done on that territory. In these cases, which would include such crucial matters as trade, monetary policy, environmental protection, and human rights, the threat of force would usually be implausible and in any case ineffective. The predominant form of conflict since 1945, according to Evan Luard, has been “low-intensity conflict” within (and not between) states. The aim in most of these situations is not to destroy the enemy, but rather to persuade the population of the merits of one’s system of government. “Even the most powerful states on earth, armed with all the vast array of modern weaponry, cannot easily convince by acts of force.” Rather, it is “political factors,” such as the effectiveness of governments and the strength of nationalist sentiment, that are decisive.9

The overriding objective of the most advanced states, in the eyes of Mueller and many other observers, is economic prosperity. Yet it is not immediately clear why the populations of advanced industrial societies, blessed with more material goods than at any time in human history, should focus so intently on wealth as their object. On closer examination, it appears that the importance of wealth as a motivation in foreign policy and in life more generally has increased not in absolute but only in relative terms. That is, other goals now matter less than before.10 This point has been developed much more explicitly by Francis Fukuyama, who maintains that the political strength of “atavistic” social classes injected an aristocratic urge for glory into the counsels of state in the otherwise bourgeois societies of nineteenth-century Europe. With the destruction of those classes and the rise of democracy, demands for “megalothymia” (recognition of oneself or one’s state as greater than others) have been largely eliminated from politics. Further, democracies satisfy the common man’s yearning for recognition more satisfactorily than any previous regime and are thus likely to proliferate. Perhaps because of this, democracies are not driven as other political regimes have been by a desire for collective honor. Only wealth remains as a goal.11

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The use of violence might still be conceivable under these conditions for economic motives, but in the view of Richard Rosecrance, force is unattractive even for this object. Violence on the scale of the world wars would ravage the property coveted by a rational aggressor so completely that it would scarcely be worth acquiring, and if anything other than extraction of basic resources were expected, the cooperation of the subject population would be nearly impossible to elicit. (Slaves can be compelled to dig for ore, but not to program computers.) War does not pay, not only because the costs of acquisition are so high, but also because the value of the conquest is so low.

Finally, the advantages of acquisition are much less apparent than in preceding epochs. Additional “living space” is no longer necessary, as settlement is now urbanized; nor required for farm land, now that such a small proportion of the population is employed in agriculture; nor for raw materials, because they constitute such a small percentage of the value added through manufacturing; nor for defense, as modern weaponry affords adequate protection. Most important, the alternatives to territorial expansion are now much more attractive. In the preindustrial past, rising population eventually produced diminishing returns to investment and stagnant standards of living. The only route to riches under these conditions was the acquisition of additional territory. The application of scientific and technical knowledge for the enhancement of productivity now provides societies an escape from the dilemma of diminishing returns. The expansion of production at home appears to be a much faster and safer path to prosperity than conquest abroad, and if all the requisites of an industrial economy are not present within one’s borders, trade is also a cheaper and easier method of acquiring them than imperialism. Military force has been, first and foremost, a means of taking and holding territory. The smaller the benefits that can be derived from the occupation of land, the smaller will be the reward to those who have invested in military might.

These arguments echo an observation offered long ago, at the beginning of the modern age, by Francis Bacon:

13. Ullman, Securing Europe, pp. 23–27. Ullman recognizes that this holds true for the industrialized states only.
It will, perhaps, be as well to distinguish three species and degrees of ambition. First, that of men who are anxious to enlarge their own power in their country, which is a vulgar and degenerate kind; next, that of men who strive to enlarge the power and empire of their country over mankind, which is more dignified but not less covetous; but if one were to endeavor to renew and enlarge the power and empire of mankind in general over the universe, such ambition (if it may be termed) is both more sound and more noble than the other two. Now the empire of man over things is founded on the arts and sciences alone, for nature is only to be commanded by obeying her.\textsuperscript{16}

For Bacon, the striving for wealth through the application of scientific knowledge to production alleviates scarcity and provides a peaceful alternative to the pursuit of wealth by means of force. Thus, in the words of Hans Morgenthau, “The empire of man over nature replaces the empire of man over man.”\textsuperscript{17}

Thomas Hobbes’s depiction of the state of nature in Part 1, Chapter 13 of \textit{Leviathan}\textsuperscript{18} is widely viewed as the foundation of modern realism. According to Hobbes, the fundamental interests of actors in a state of nature—“gain, safety, and reputation”—cannot be attained simultaneously by two different individuals, or, by extension, two different governments; hence a state of nature will always become a state of war. But if the yearning for glory has ceased to animate us, if wealth can be achieved without the exercise of military power, and if defense dominates offense on the battlefield, the range of issues over which conflict could arise has narrowed decisively. The anxieties that have fostered insecurity should then ease and the preoccupation with security diminish. The state of nature should no longer tend toward a state of war. In the past, military strength has afforded great powers influence not only over those they can coerce but also over those who needed their protection. The farther international affairs moves from Hobbesian anarchy, the less states will need this sort of protection and the weaker will be the influence enjoyed by states that can provide it.

Many will find this an attractive vision of the future. But is it a realistic one? The optimists have advanced a linear view of history. Secular forces are at work, they believe, that are bringing a permanent and irreversible decline in the efficacy of military force. But are there other forces in play that could hinder this transformation of the state of nature, halt the demilitarization of national defense?

\textsuperscript{16} Francis Bacon, \textit{Novum Organum}, First Book, Section 129.
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and international politics, and perhaps restore to military force its once central role in world affairs? In which direction, then, are the tides of history running? These are the questions to which I now turn.

The Revolution in Military Affairs

Many military analysts believe that the application of information technology is bringing about a change in the practice of warfare as profound as those resulting from gunpowder and nuclear weapons. The term "military revolution" was coined by historian Michael Roberts in 1955 to convey the importance of the changes in military organization and strategy conceived and implemented by Maurice of Nassau and Gustavus Adolphus between 1560 and 1660. Usage has since broadened to mean any epochal shift in military technique, organization, and strategy. The military revolutions of the past have had a profound impact on the evolution of domestic society, the balance of power, the conduct of war, and the prospects for peace. The revolutions initiated by Napoleon and the German high command of the 1930s, for example, shifted the balance decisively to the offense and made possible their grasp for dominance on a continental scale. The revolution in military affairs now in progress may be no less far-reaching in its consequences. The technological bases of the ongoing revolution are dramatic improvements in the accuracy and range of weaponry, the acuity of reconnaissance and surveillance, the ease of deception and suppression of the enemy's defenses, and the effectiveness of command and control. If exploited effectively by changes in organization and doctrine, these innovations promise both to ease the restraints against the use of force and to increase substantially its efficacy, particularly when applied against adversaries who have not mastered this way of war.


Although the information revolution in warfare was only in its initial stages in 1991, the Gulf War provided ample evidence of the opportunities and dangers it may bring. The most impressive weapon in action during the Gulf conflict was the F-117A fighter-bomber. F-117As flew only 2 percent of U.S. sorties in the Gulf War but accounted for 40 percent of the damage done to strategic targets. Overall, more than 80 percent of the bombs dropped by F-117As are thought to have hit their target, and none of the aircraft was shot down. In a comparative case study of twenty-four sorties, the Gulf War Air Power Survey (GWAPS) found that F-111Es using unguided Mk-82 bombs destroyed two targets in twelve sorties with 168 bombs, while F-117As struck twenty-six targets successfully in their twelve sorties with only twenty-eight precision-guided bombs. These remarkable results were attained through a combination of stealth and precision. During the raids on Germany and Japan, the average error probable was measured at best in thousands of feet and sometimes in miles. F-16s have far better navigation systems than B-29s, but achieved an accuracy of only 200 feet dropping unguided bombs from 17,000 feet. Laser-guided munitions, on the other hand, attained an accuracy of one to two feet during the Gulf War, and 85 percent of the smart bombs dropped landed within ten feet of their target. As one U.S. Air Force officer remarked, the question was no longer which building to target but which room—or in some instances, which part of the room.

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Accuracy makes weapons more lethal to targets but less destructive to their surrounding communities. Iraq suffered remarkably few civilian casualties (1,500–2,000 dead according to U.S. estimates) in view of the intensity of the coalition raids. In the words of a Dutch human rights observer, “What struck me most was how little damage allied air raids had actually caused to civilian areas, relative to the amount of bombs said to have been dropped. Especially in Baghdad, the bombing was eerily precise.” One peace activist found the Iraqi capital to be “a city whose homes and offices were almost entirely intact,” but noted that some of her colleagues were lamenting that smart bombs do not “produce the kinds of images that mobilize peace movement.” The fateful correlation between military efficacy and random devastation that had increasingly characterized war over the past centuries has been decisively broken. War will not become antiseptic—it will still involve smashing things and hurting people—but it should be possible to wage it in the future without the massive damage to civilian life and property that has occurred in all major conflicts of the twentieth century, from the Great War to Vietnam.

The impressive improvements in the accuracy of weapons mean that more of what is seen can be destroyed, and with the expected enhancements in sensors, more of the enemy’s forces will be seen. During the Gulf War, systems such as JSTARS (joint surveillance target attack radar system) and AWACS (airborne warning and control system) provided the Coalition with an unprecedented understanding of developments on the battlefield. Because their target acquisition technology is radar based, they can provide real-time coverage over an extensive area in nearly all weather conditions. A state possessing RMA technology will begin a future war with superior sensors that permit its commander to see the enemy’s forces much better than his are seen. This “information dominance” should allow the commander to bring the enemy under threat while his own forces remain much less vulnerable. Once the RMA power has demonstrated the ability to kill nearly all of what it sees, simply communicating to the enemy that “we know where you are” may be enough...
to persuade them to surrender or withdraw. Even if the more visionary plans for nonlethal force cannot be brought to fruition, the advantages of information dominance, in combination with the enhanced protection afforded to civilians by smart weapons, may do much to diminish humanitarian and moral objections to the use of force.

Even the most humane of peoples are more concerned about the lives of their own soldiers than those of opposing civilians and combatants. Here, too, the results of the Gulf War suggest that restraints on the use of force are likely to ease. Early computer estimates projected 40,000 U.S. casualties, with 10,000 of them fatalities; in the event, U.S. forces suffered only 148 killed out of 540,000 participants. During the Vietnam War the United States lost one plane in every twenty-five sorties. Twenty-seven aircraft were lost in the Gulf War, one for every 750 sorties, against an opponent who had invested very heavily in air defense. Some observers contend that this astonishing outcome was an anomaly arising from unusual circumstances and thus provides no clear indication of future trends. The battlefield was a flat and featureless desert that was easily scanned and ideal for mobile warfare, and Saddam Hussein was an incompetent strategist and uninspiring leader who first exposed his forces to six weeks of bombardment, then failed to anticipate the main direction of the Coalition’s attack. The troops themselves, it is alleged, were poorly motivated, poorly led, and poorly trained. Stephen Biddle, for example, contends that if the Republican Guards had dug in their tanks more skillfully at the Battle of 73 Easting, they would have inflicted very heavy casualties on the Coalition. Smart weapons, it seems, are particularly lethal only to dumb opponents. In short, Iraq was the perfect battlefield and Saddam Hussein and his troops, “the perfect enemy.”

Although peculiarities of circumstance no doubt contributed to the disproportionate ratio of casualties, they alone cannot explain it. In point of fact, the weather during the Gulf conflict was the worst in the region in fifteen years, and identification of the enemy would have been very difficult under such conditions without the aid of JSTARS. Furthermore, the better Iraqi divisions,

unlike the Kurdish and Shi'ite conscripts entrenched on the border, displayed determination and courage on several occasions, though to no avail. The only Iraqi offensive of the war, the attack on al-Khafji on January 29–30, turned into a debacle for the 5th Mechanized Division. Although considered to be one of Iraq's finest, it proved incapable of coordinating complex maneuvers (some units ended up lost in the desert) and was pounded relentlessly from the air. In the pivotal tank confrontations at the end of the ground campaign on February 25–27, the Republican Guards were repeatedly surprised, in some instances caught eating lunch, or with their tanks facing the wrong direction, or even with their tanks' batteries removed to power heaters and lights. Incompetence alone cannot account for this. The Coalition's air campaign had disrupted the Iraqis' communications, blinded them, and stripped them of air cover. In a war of movement, they were desperately vulnerable. During these battles the unusually inclement weather sometimes grounded Coalition aircraft, but the crews of the United States' M1 tanks, possessing not only superior armor and longer-range guns but also thermal sights, were still able to peer through the rain and mist to locate and destroy enemy tanks. Even in encounters where Pentagon analysts judged their defensive positions to be well prepared, the hapless Iraqis were still routed.

Future opponents may be luckier or more competent than Iraq, but RMA powers will continue to enjoy decisive advantages over their adversaries. Three advantages merit emphasis here. First, accuracy means that pilots can accomplish much more with fewer missions and thus greatly reduced risk. Second, most of the "searching" during the Vietnam War was done by highly vulnerable ground forces and most of the "destroying" by less vulnerable air power. Improvements in sensors should make it much easier to locate the enemy without putting ground forces at risk in this way. Third, long-range precision strikes launched from stealthy platforms should make possible "disengaged combat" in which RMA forces will be able to inflict heavy damage.


on the enemy at minimal risk. By targeting the enemy's longest-range systems first, RMA forces should be able to close on the enemy gradually while remaining nearly invulnerable to counterattack. The military effectiveness and limited costs in life of these tactics should do much to overcome the reluctance of democratic publics to commit their forces to battle.

U.S. professional soldiers, as measured not only by their performance on the battlefield but also through reliable quantitative indices such as desertions, demonstrated vastly superior morale to the Iraqi conscripts facing them. Complex weapons systems require high levels of training that cannot easily be provided to draftees: "Smart weapons require smart soldiers." The more expensive the technology of war and the more difficult it is to master, the greater is the advantage of quality over quantity on the battlefield. Hence the day of the conscript soldier has passed. This, too, has important implications for the utility of force. Democracies will probably never cease to agonize over the resort to war, but in the event, it will be much easier to dispatch career soldiers who have voluntarily agreed to risk their lives than conscripts who are compelled to serve. Moreover, it may soon be possible to substitute military machines for soldiers in many tasks. Dozens of pilotless aircraft, or unmanned aerial vehicles, were deployed in the Gulf War for the purpose of surveillance, and they will probably dominate airborne reconnaissance in the future. Cruise missiles also played a vital role in the initial assault on Iraq's air defenses. Deep strikes of this sort, which achieve high levels of accuracy without putting at risk the lives of pilots, are expected to figure prominently in future war plans. The U.S. Army's STAR: 21 study predicts that its core military platform of the twenty-first century, analogous to the tank in this one, "may well be an unmanned system."

If the RMA does indeed fulfill the hopes of its proponents, not only will the moral and political restraints against the use of force ease, but the prospects for successful offensive action at reasonable cost will also improve, for several reasons. One of the most important sources of friction in the past has been the fog of battle, the literal or figurative obscurity of the events on the battlefield.

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to the military leadership, which has made it impossible for them to employ
their forces with complete effectiveness. At times, soldiers have roamed the
field of battle for all intents and purposes beyond the control of the com-
mander, and the issue was settled more by chance than strategy. One of the
most important of all aspects of the RMA is the promise that new sensors and
communication nodes will disperse the fog of war through quantum improve-
ment in the quality of intelligence and the effectiveness of communications.
Technologies such as the global positioning system, digital radios, defense
communications satellites, AWACS, and JSTARS afforded Coalition command-
ers unparalleled situational awareness during the Gulf War. Although friction
can never be reduced to zero, the results attained from a given force should
be greatly enhanced and the uncertainties that have made war “the province
of chance” much diminished. It may thus be possible to achieve decisive
military superiority over less sophisticated opponents without a quantitative
advantage or even with lesser numbers. Under such conditions, arms control
treaties that attempt to discourage aggression by equalizing force levels will
afford states much less protection.

It has always been necessary in the past for the offense to concentrate its
forces at one point in order to break through the defense. Such forces then
became vulnerable to counterattack, which is why defense has always in some
measure had the advantage over offense. Already, widely dispersed systems
can rain down fire at a specific point when effectively directed. With continued
improvements in the range and accuracy of weaponry and the effectiveness of
command and coordination, it will become increasingly possible for the offense
to concentrate fire but not forces before the enemy, which may shift the eternal
contest between offense and defense decisively in favor of the attacker.

If and when the time comes to concentrate force, this will happen at un-
precedented speed. Heavy armor will be increasingly vulnerable on future
battlefields. With further advances in materials technology and electronics,
however, it should be possible to decrease the weight of tanks and other
instruments of land warfare by eliminating some of the crew and reducing the
armor, relying instead on stealth and improved range for protection against
the enemy. This improvement in punch for pound will not only enhance the
survivability of major land platforms, but will also make possible much more
rapid engagement on the battlefield. As mobility increases, so too does the
attractiveness of offensive action.
Finally, stealth strengthens the attacker by restoring the prospects for surprise, perhaps close to the levels prevailing before the invention of radar, while accuracy radically diminishes the number of aircraft and tonnage of bombs needed to destroy a given set of targets. These capabilities may enable an RMA power to paralyze and demoralize the enemy without destroying his forces in detail by incapacitating key logistical, communications, and defense systems. The Gulf War provides impressive although perhaps not conclusive evidence of the effectiveness of strategic bombing when implemented with advanced technology. Skeptics correctly point out that strategic bombing alone did not compel Saddam Hussein to withdraw from Kuwait—only the imminent destruction of the Republican Guards accomplished that—but its indirect contribution was nonetheless substantial. F-117s, Tomahawk cruise missiles, and fighters equipped with radiation-seeking missiles neutralized Iraq's formidable air defenses in the first days of the war, guaranteeing the Coalition command of the air through the duration of the campaign. The attrition of Iraq's forces, by means such as the innovative and deadly "tank plinking" by F-111s, was thereby greatly facilitated. Coalition aircraft also destroyed fifty of Iraq's bridges, reduced its electricity generation to 15 percent of prewar capacity, and shut down its oil refineries altogether in a matter of weeks with only a small fraction of the sorties that were necessary for the same purposes against Nazi Germany or Vietnam. The loss of electrical power presented insurmountable difficulties for nearly every Iraqi military activity, and the resulting interdiction of the Kuwaiti Theater of Operations (KTO) gave rise to severe shortages that contributed heavily to the demoralization of the unfortunate conscripts whom Saddam Hussein positioned on the border. Iraq was by no means uniquely vulnerable in this respect. The number of key production targets is limited even in larger, more advanced societies, and most will remain highly vulnerable to strategic attack.

The strikes against Iraq's leadership, and command, control, and communications, and intelligence (C3I) did not eliminate Saddam Hussein and apparently did not completely sever communications between Baghdad and the

36. Perry, "Desert Storm and Deterrence," pp. 73–75; and Mazarr, Snider, and Blackwell, Desert Storm, pp. 93, 97, 107, 121–122.
KTO. They did, however, eliminate Iraq's capacity to coordinate complex ground-force operations in the Kuwaiti theater, as was evident from the confusion at al-Khafji. Although the damage to Iraq's C³I did not induce Saddam to yield, it left his forces nearly powerless to react effectively to the Coalition's massive flanking maneuver. Destruction of the enemy's means of gathering intelligence and controlling his forces generally produces a tremendous shock effect and it did so in the Gulf War, demoralizing and befuddling the Iraqi troops. Future opponents may judge continued resistance to be fruitless once they have been deprived of the ability to command their forces and to see the enemy. Quick and relatively bloodless victories would then be possible through the early elimination of the enemy's C³I and other strategic targets. The mere threat of destroying the enemy's armed forces piece by piece and inflicting pain on civilians may not be sufficient to compel surrender—it was not with Saddam—but, at the very least, successful strategic bombing substantially increases the prospects and lowers the costs of victory for an RMA power. One caveat is in order, however. Some analysts contend that the decentralization of telecommunications, proliferation of unmanned reconnaissance vehicles, and widening access to global positioning satellites will render other societies less vulnerable to attacks on C³I, making information dominance harder to achieve in the future than it was in the Gulf.

For Colonel John Warden, a leading advocate of strategic bombing, the upshot of these developments is that "offense again has clearly assumed the dominant position in warfare." For Jeffrey Cooper, they will make possible "the return of Clausewitzian decisive victories in place of attrition warfare." Would these assertions still hold true if an advanced RMA power were to confront a less advanced state armed with unconventional weapons, or a

38. Freedman and Karsh, Gulf Conflict, p. 324; Taylor and Blackwell, "The Ground War in the Gulf," pp. 234–235, 243; GWAPS, Vol. 2, pp. 224, 288–289, quotation on p. 343; Atkinson, Crusade, p. 465; and Scales, Certain Victory, p. 373. Coalition attacks on C³I were less than totally successful for three reasons. First, Iraq's communications system was hardened to withstand nuclear war (Warden, "Employing Air Power," p. 57). Second, the Iraqis took effective countermeasures, including the threat of death sentences for users of two-way radios in Kuwait. Reliance on underground cables, however, led to the "collapse" of their system when they were forced to move by Coalition forces (GWAPS, Vol. 2, pp. 223–234). Third, the Coalition may have opted to leave some lines of communication open in order to monitor the enemy or find its leadership (Pape, Bombing to Win, pp. 239–240).


technological peer? It is possible, although admittedly this is a strong claim—that the current RMA will at least partially reverse the consequences of the nuclear revolution. U.S. Army Lieutenant General William Odom (ret.), for example, has suggested that “the Gulf War, if it has implications for nuclear war, would seem to reinforce the view that nuclear weapons are being transcended in their importance to modern warfare by new weapons technologies.” Modern conventional munitions should be capable of assuming many of the missions heretofore assigned to nuclear weapons, including the demanding task of countering an enemy’s atomic arsenal. One aim of the “Defense Counterproliferation Initiative,” announced by the Clinton administration on December 7, 1993, is to enable the United States to disarm an enemy possessing weapons of mass destruction by means of a preemptive strike with conventional ordnance. Technology such as precision-guided weapons, earth-penetrating warheads and sensors, and special munitions designed to destroy unconventional weapons could make this possible. As a last resort, nuclear deterrence may suffice. The United States faced an opponent in the Gulf War, after all, who possessed chemical weapons, and not only were these weapons not used, they were not even distributed to field commanders, apparently because Saddam had been warned explicitly by then-Secretary of State James Baker. Eventually, the combination of a conventional first strike, theater ballistic missile defense, and nuclear deterrence may effectively negate the importance of a small or medium-sized nuclear force.

The RMA should weaken resistance to the use of force by limiting the damage done to the enemy’s society, eliminating reliance on conscripts, and improving the prospects for early victory at reasonable cost. The possession of these capabilities by a power strongly committed to the international status quo should discourage conventional aggression and exert a profoundly stabilizing influence on world politics. Aggressors may seek to challenge the United States with asymmetrical strategies, but the most obvious of these—guerrilla war and terrorism—are not well adapted for the seizure of territory. Conven-

tional force will remain useful as long as these conditions obtain precisely because it will not have to be used very frequently. The United States’ monopoly of the RMA cannot last indefinitely, however, given that the civilian technologies on which it is based are already spreading rapidly. (Twenty nations can already produce precision-guided munitions.) The uneven progress of military technology and organization invariably gives rise to large inequalities of power between states. When such improvements have also strengthened offensive force against defense, the ability of leading states to seize territory has been decisively enhanced. The same technologies that permitted the United States to regain Kuwait at low cost would also allow a future revisionist power to inflict a rapid and decisive defeat on an adversary without destroying its economy. Hence, the diffusion of the information-based RMA should increase the utility of force for offensive purposes and widen opportunities for territorial expansion, provided of course that other RMA powers are willing to stand aside.

If, on the other hand, the United States or some other defender of the status quo were to intervene against a technological peer, what would be the result? The possible course and outcome of a war between two RMA powers is obviously difficult to predict, but it is an issue that must eventually be faced. Presumably the accuracy of weapons would mean that losses to civilians would remain modest as long as mutual restraint were to hold. Improvements in intelligence and in the lethality of weaponry, however, could make such an engagement as sanguinary for soldiers as the trenches of the Western front. The potentially high rates of attrition could lead to a gruesome stalemate on the battlefield or, alternatively, induce a degree of caution on both sides that would preclude a decisive result. Furthermore, in a battlespace where nearly everything that is seen is destroyed, remaining invisible to the enemy would become the key to survival. Because forces on the move generate much more data for the opponent’s sensors and offense is impossible without movement, taking territory could be much more difficult than holding it. Hence, Martin

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219–220. According to the Director of Defense Research’s report, sensors may soon be capable of penetrating foliage, which may alter the view that the U.S. military “does not do jungles.” Defense Science and Technology Strategy, p. II-16.
46. Gilpin, War and Change in International Politics, pp. 61–63.
Libicki maintains, defense would dominate offense if two RMA powers faced each other. Libicki assumes that sensors will improve faster than will stealth, however, and this may not prove to be the case. Further development of stealth or countersensor technology, including improvements by adversaries of the United States, is certainly conceivable. Even a temporary advantage in concealment over detection could shift the advantage swiftly to the attacker. Thus far, according to Richard Hallion, there appears to be no truly effective countermeasure to the stealth fighter and there may never be. Eighty years after the invention of the submarine, he notes, it still remains difficult to detect. Other factors will also favor the aggressor. The enhanced mobility of land forces and the capacity to concentrate fire without concentrating force, as aforementioned, should strengthen the offense; but most important of all, the initiator may hope that a preemptive attack on the opponent’s C3I systems and air defenses will yield early information dominance and a quick and relatively easy victory. Indeed, the fear that the opponent might launch such an attack first could be a persuasive argument for preemption.

**Population Growth and Its Consequences**

The RMA can be expected to ease the restraints, reduce the costs, and increase the effectiveness of the use of force for some purposes, and may shift the strategic advantage from the defender to the attacker. If so, large-scale conventional warfare will become more feasible than it has been at any time since the advent of blitzkrieg. The attractiveness of war, however, depends not only on the productivity of military capabilities but also on the ends for which they are employed. Mueller and Fukuyama maintain that the yearning for honor through conquest has vanished; while the descendants of Francis Bacon and Adam Smith believe that war is "irrational" because trade and industrialization are more effective means of achieving prosperity. Will there, then, be anything to fight about in the future? A second trend in contemporary history, the enormous expansion of world population now in process, suggests that we have no grounds for complacency.

The world's inhabitants now number approximately 5.6 billion. Because of the comparative youth of much of the current population, even if replacement fertility were achieved immediately, the expansion would not cease until 2050, when it would reach 8.5 billion. Estimates of the ultimate peak population vary widely, of course, but the United Nations' medium projection is 10 billion by 2050, nearly double the current total. The earth's population is increasingly concentrated in cities. By 2025, Latin America is expected to be 85 percent urban and Africa will have an urban majority. Unless nearly miraculous rates of economic development are achieved, much of this urban population will remain impoverished. Half of the residents of cities such as Delhi, Nairobi, and Manila are already living in slums. These developments may hold profound significance for international security.

Mueller has concluded that the reluctance to employ force has its origins in a higher valuation of human life, but provides no clear explanation for this occurrence. It is possible, of course, that this shift in moral thinking has no material cause at all and has evolved through a gradual process of moral enlightenment over the centuries. If so, one wonders why it took an entire millennium after the introduction of the humanitarian ideals of the New Testament into Western societies for this increased valuation of human life to take root. Edward Luttwak has provided a simple but compelling answer. As long as women bore six or seven children and usually lost several to disease or malnutrition, he says, adults were inured to death and could bear with some equanimity the loss of one or two of their sons in battle. Once societies achieved replacement levels of fertility, the death of a child became a shocking abnormality and an irreplaceable loss. More than any other factor, this may explain why advanced industrial societies have been reluctant to suffer casualties recently on the battlefield. In the developing world outside China, however, the average number of children per family is still 4.4, and replacement levels of fertility are not expected to occur in India until 2030 and in Africa until 2050. If Luttwak's hypothesis is correct, these societies should remain more prone to violence until that stage is reached.

51. Ibid., pp. 29-32.
Rapid population growth and urbanization have been associated throughout the modern era with violent upheavals in domestic politics that have brought to power belligerent autocracies hostile to the prevailing international order. William McNeill contends that the 44 percent rise in population between 1715 and 1789 first destabilized France’s old regime by filling the cities and countryside with desperate men, then provided its successor with both the means and the motive for expansion. Because the *grande armée* was raised by conscription and fed by foraging off the land, Napoleon quite literally exported France’s population problem and in so doing created a force that was not only larger but much more mobile than that of his enemies. In the years after the French Revolution, peasant rebellion demolished the old order and prepared the way for totalitarian regimes in Russia, China, and elsewhere. Eric Wolf’s research has shown that one common thread in all of these revolutionary situations was the explosive growth of population leading to immiseration of the rural poor. In European Russia, for example, the population rose from 36 million in 1796 to 129 million in 1900. In China the numbers swelled from the already enormous figure of 265 million in 1775 to 430 million in 1850 and then to 600 million during the 1940s. According to Jack Goldstone, all of the major upheavals in modern Chinese history (the collapse of the Ming dynasty, the Taiping rebellion, and the revolutions of 1911 and 1949) were preceded by a sharp deterioration in the land to labor ratio.

The threat of peasant rebellion may remain with us for some time, as the recent uprising in Chiapas, Mexico, suggests, but the most dangerous class of the next century will probably be the urban poor of the less developed countries. It is they who formed the shock troops of the Iranian Revolution and who now provide the mass base of support for Islamist movements in the Arab world. Their existence calls into question the optimistic predictions of Fukuyama and others that the end of history and the universal spread of democracy are at hand. The prospects for democracy must remain highly

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uncertain in countries whose capitals are ringed by wretched, importunate mobs. The more pertinent question may not be whether democracy can be sustained in such unfavorable circumstances, but rather whether these states will collapse into chaos or successfully mobilize and channel the discontent of the urban poor through extremist ideologies for a program of foreign aggression.  

Since the defeat of Hitler and Imperial Japan, the conquest of nature has provided a surer and safer path to enrichment than the conquest of territory. How much farther can the conquest of nature proceed? The harvest from the oceans is already at its limit; if more fish were removed than at present, stocks would diminish to the point where future catches would fall. On land, the outlook is more ambiguous, but recent statistics are not encouraging: the production of cereals dropped from 342 kilograms in 1984 to 326 kilograms per capita in 1990. The causes of this decline are manifold and will not be easily remedied. The amount of land under cultivation peaked in 1981 and has since fallen 8.5 percent. The speed of urbanization makes it likely that this trend will continue. Yields also appear to be reaching their limits. From 1950 to 1984, they doubled; but in the 1990s the global rate of improvement has slowed to 0.5 percent, which is less than one-third the rate of increase of population. Heavier fertilizer application has functioned as a substitute for land in the past, but its use also declined between 1989 and 1993, in part because of changes in government policy but also because after a point yields simply do not seem to respond much to additional fertilization. Irrigation, another crucial input, peaked in 1978 and has since declined 6 percent. The inflation-adjusted cost of the large-scale engineering projects needed to expand irrigation (i.e., dams, canals, and reservoirs) doubled in India from 1950 to 1980, which suggests that investment in irrigation is also strongly subject to diminishing returns. A repetition of the “green revolution” does not appear to be in prospect.

The situation in China is particularly worrisome. China has one-fifth of the world’s population but only 7 percent of its farmland (only Egypt and Bang-

Pakistan have less arable land per inhabitant, and much of this is of poor quality. Its share of the world’s fresh water is also 7 percent, most of it in the south. These resources are already under heavy stress. By 1993, 100 of China’s cities were experiencing severe water shortages, and in 1995 the Yellow River dried up 385 miles from the Pacific Ocean. The water table is falling at a rate of one meter per year in parts of northern China, including Beijing, where one-third of the wells are said to be dry. Two Chinese scholars, having reviewed the studies of their country’s carrying capacity conducted since the 1950s, concluded in 1988 that “the long-term strategic goal of China’s population policy should be to limit the population below one billion, or ideally, below 700 million.”

But China’s population is expected to increase another 490 million by 2030 to reach 1.6–1.7 billion, while prosperity is enabling its inhabitants to “move up the food chain” and consume more meat, eggs, and beer. Lester Brown reckons that the combination of these trends will nearly double China’s demand for grain by the year 2030. The prospects for meeting this demand from domestic sources he judges to be extremely unfavorable. He estimates that China’s grain deficit will total some 207 million tons if there is no further increase in consumption of eggs, meat, and beer, and will rise to 369 million tons if grain consumption per capita increases to 400 kilograms yearly. This figure is nearly double the 200 million tons of grain that was available on world markets in 1994.

Other observers are more sanguine. The International Food Policy Research Institute expects China’s production of wheat, corn, and rice to rise 90 percent, 80 percent, and 54 percent by 2020, while the U.S. Department of Agriculture (USDA) projects 1 percent growth per year to 2020 in Chinese grain production. But even if China is able to meet the USDA’s projection, it will still fall well short of the 33 percent rise in demand projected by Mei Fungquan of the Chinese Academy of Agricultural Science by 2010. Chinese government experts remain optimistic publicly about the long run but concede that grain

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imports, perhaps 70 million tons by the year 2000, will be needed to bridge the gap in the near future.\footnote{Mei estimates that demand for grain in China will increase from 450 million tons in 1993 to 600 million in 2010, a 33 percent increase. One percent compounds to about 18.4 percent in seventeen years. Mei Fungquan, “Sustainable Food Production and Food Security in China,” in \textit{Food for All} (Bangkok: Food and Agriculture Organization Regional Office for Asia and the Pacific, 1995), p. 34; Margit Adam, “Can China Feed Its People? The Answer May Be No, then Yes,” \textit{FAO Review}, Vol. 27, No. 5 (September/October 1995), pp. 26-29.} Even if exporters prove capable of meeting the rising demand from China and other developing world importers, this will not necessarily produce a calming effect on world politics. Interdependence has in some instances intensified rather than moderated the conflicts between states. Japan’s desire to escape dependence on the United States, for example, led to the attack on Pearl Harbor in 1941. Were the Chinese to become heavily dependent on the United States for grain, they would, at the very least, bid up the price of food and exacerbate poverty and food insecurity elsewhere. China would be compelled to pay the bill for the imports of grain by releasing a torrent of labor-intensive exports on world markets. Taiwan’s exports average about $3,800 per capita. For China to gain only $500 per capita, its exports would have to rise from $85 billion (in 1994) to $750 billion, which is twice Japan’s current total. It is not obvious that China’s trading partners could absorb exports on such a scale without being besieged by demands for protection.\footnote{Walker, “China and the New Era of Resource Scarcity,” p. 11; Paul Kennedy, \textit{Preparing for the Twenty-first Century} (New York: Random House, 1993), pp. 176-177. Export estimates from Goldstone, “The Coming Chinese Collapse,” pp. 49-50.} One may doubt, however, whether the current Chinese leadership or any future one would choose to place their country in a position where one dry month in Kansas could create shortages in Chinese cities or where they would be vulnerable to political pressure enforced with the threat of embargoes by grain exporters. The Chinese will not soon forget that 30 million died of starvation as a consequence of Mao Zedong’s reckless social engineering in the late 1950s. China’s minister of agriculture, Liu Jiang, stated emphatically in 1995 that “grain is an important product, which . . . is of great significance to social stability and national security. . . . China must not be dependent on the world market for grain.”\footnote{Brown, \textit{Who Will Feed China?} pp. 38, 102-104, 117, 122-123, 133; quoted in Adam, “Can China Feed Its People?” p. 28.} 

The more fundamental problem is that even if the Chinese are willing to accept dependence on the global market, the grain may simply not be available. The United Nations’ Food and Agricultural Organization (FAO), whose analysts are much less Malthusian than Brown, expects a slowdown in the
expansion of grain output among developing countries from the 3.0 percent annual growth of the 1960s to 1.8 percent up to 2010 and 1.3 percent thereafter. Output per capita may not increase at all. Land is being lost not only to urbanization but also to soil degradation (principally through erosion), which has already damaged 15 percent of the world’s agricultural land severely and is continuing at an alarming pace. Improvements in productivity will probably also slow. Biotechnology may increase the resistance of plants to pests or permit wheat to be grown in salty soils, but it is not expected to generate quantum increases in yields. Undesirable side effects of the green revolution such as waterlogged soils, salinization, and resistance to pesticides continue to threaten the progress of the past generation. For these reasons, both the FAO and the International Food Policy Research Institute expect the developing countries’ demand for food to outstrip their supply, necessitating an increase in food imports from 90 million metric tons today to between 160 and 180 tons by 2010. The FAO remains confident, however, that there is sufficient slack capacity in the developed economies to meet this demand, particularly if former communist countries succeed in reforming agriculture and become net exporters.66

This confidence may be misplaced. Global water utilization has tripled since 1950 to reach 4,340 cubic kilometers, two-thirds of which goes for irrigation. Assuming constant consumption per capita (which is optimistic), an additional 780 cubic kilometers will have to be tapped to meet projected demand by 2025. It is not altogether clear where this water will be found. China, India, Iran, Libya, Pakistan, and Saudi Arabia are all withdrawing groundwater faster than it is replenished by rainfall, and U.S. farmers have also been drawing water from the aquifers under the Great Plains and the Central Valley of California at rates that are unsustainable. The expected doubling of the world’s urban population will sharpen the competition among agriculture, industry, and

residential use, most likely to the detriment of agriculture. Water tables are already falling rapidly under developing world metropolises such as Mexico City and Bangkok. Because 60 percent of the water drawn for irrigation is thought to be wasted, there is ample scope for conservation, but at some point, water will pose an inescapable constraint on the expansion of population and the enhancement of human welfare.67

Plants release large amounts of water in the process of photosynthesis, and little can be done to reduce the rate of transpiration. A minimum of approximately 200 tons of water is thus required each year to produce a daily diet of 2,000 calories of wheat. Plausible estimates of the total amount of fresh water available for human use vary from 9,000 to 14,000 cubic kilometers. If the higher figure proves to be correct, then, according to the calculations of Joel Cohen, 2,000 calories daily can be supplied to about 12 billion people. If the world holds 9,000 cubic kilometers, as the FAO estimates, then, according to Cohen's model, the world's fresh water will support at most 2 billion people at the current United States level of consumption (10,000 calories per day directly and indirectly) and will provide little more than an average of 1,500 daily calories per capita to a population of 10 billion, a level of subsistence close to starvation.68 Recall that the United Nations' medium estimate for global population is 10 billion by 2050 and a maximum of 11.5 billion at some point in the twenty-second century.69

**The Spread of Industrialization**

The pressure of population on global food supplies coincides with a third secular trend, the spread of industrialization to the late-developing south, especially East Asia. Together, the two are placing ever greater demands on the earth and its resources. In view of this, one may well ask, as does Martin Walker, whether "the vast majority of the planet will ever be able to realize the levels of food and energy consumption that have become routine in North

America, Western Europe, and Japan over the past 50 years? petroleum may soon present a serious bottleneck. In 1994 China consumed five barrels of oil per capita each day; the United States, fifty-three. China's need for oil is certain to increase as its industrialization proceeds and the Chinese begin to acquire the trappings of Western consumerism, especially the automobile. If China's demand for oil doubles in ten years—a conservative assumption—its total consumption will equal that of the United States. China has extensive domestic reserves in the Tarim Basin, but these are remote and will be difficult to develop. To meet this rising demand, China will probably have to import 16 million barrels per day, which is twice the current production of Saudi Arabia. India's demand is also rising rapidly and will probably match that of Western Europe by the same year. At a minimum, the Asian giants' thirst for petroleum is likely to drive up the price of energy and set in motion the inflationary forces that have been contained so successfully in Europe and America in the last decade. It may pose strategic dangers as well. The great majority of China's oil will be derived from the Persian Gulf. To safeguard this supply, Kent Calder speculates, China will deploy a blue water navy to patrol the sea-lanes and will seek strategic partnership with two of the countries with the greatest reserves—Iran and Iraq—policies with "unsettling implications" for Japan, the United States, and the rest of Asia.

Even more significant, potentially, are the recent findings of the Intergovernmental Panel on Climate Change (IPCC). The body, which was founded under United Nations auspices and includes 2,500 scientists from around the world, released a report in 1995 stating that global temperatures have been rising over the past 100 years, that human activity is probably responsible for some of this increase, and (certainly by implication) that global temperature may continue to rise to the point where it will present serious risks to human life if no action is taken to forestall it. The panel predicted that temperatures will rise 1.44–6.3 degrees Fahrenheit if no further measures are implemented to slow greenhouse emissions, and added that human-induced warming might represent only 50–70 percent of the actual increase in temperature. Plenty of evidence to the contrary can be adduced; but even if the likelihood of catastrophic warming

is not large, it would be imprudent to dismiss these warnings and abandon efforts to stem the accumulation of greenhouse gases in the atmosphere. Here, too, China’s role will be crucial. The IPCC estimates that if China continues to burn coal at current rates, by 2025 it will be emitting more greenhouse gases than Canada, Japan, and the United States combined. Persuading the Chinese and other long-impoverished peoples to curtail their industrial development while North Americans, Europeans, and Japanese continue to enjoy their accustomed standard of living will be no easy task.

The State of War

Predictions of the imminent obsolescence of force appear to be premature. Whether the twenty-first century will witness a revival in the desire for military glory is not clear, but it is conceivable that the world will enter a post-Baconian age in which economic growth no longer provides a solvent to conflicts within and between states. Even if the consequences of the accumulation of greenhouse gases prove to be relatively mild, cheap energy, fertile land, and fresh water will not be obtainable in endless abundance in the coming decades. The combination of environmental threats and resource constraints may eventually bring a fundamental alteration in the basic conditions of international politics. When the empire of man over nature can no longer be easily extended, then the only way for one people to increase its standard of living is by redistributing the sources or fruits of industry from others to themselves. The surest way to do so is by extending man’s empire over man. If the population surge continues to outpace improvements in agricultural productivity and if industrialization drives up the cost of resources or presses the world’s capacity to absorb pollution beyond its limits, additional land will become desirable and perhaps, for some states, indispensable. As the value of land increases, so too does the value of the primary means of taking and holding it: diminishing returns in the economy implies increasing returns to the military.

The information revolution in warfare will simultaneously evolve and disperse across the planet at a pace and in a manner that are unforeseeable, in all likelihood widening the disparities in power between states and perhaps in some instances strengthening the initiator of war decisively against the defender. The next two generations may thus be fated to live in an era where the technology of destruction is progressing much faster than the technology of
production. Under circumstances such as these, it is likely that the premises of the “trading state” policy of nations such as Japan and Germany will come under serious reexamination. Trade offers a viable substitute for political control over markets and sources of raw materials only as long as the international economy remains open and physical threats do not impede the flow of goods. Even if disruption were initially confined to a “zone of turmoil,” it is difficult to believe, for example, that Japan, South Korea, Italy, and France would remain unconcerned if China or North Africa lapsed into chaos or militarism. If developed countries in the “zone of peace” do not attempt to achieve security by unilateral measures but continue to rely on protection by others, the value of that protection will increase proportionately to the degree of danger to their economic interests, as will the diplomatic and economic “return” to military power.

The hunger for resources, by one count, has set states on the path of expansion at least twelve times in this century. Will statesmen of the future seek to enlarge their territories in order to alleviate the economic distress of their peoples? The most ominous scenario would clearly be a conjunction of the capability and need to seize territory in one state, most likely one of the larger and more successful developing countries. Much, of course, is contingent. If the overall impact of the RMA has been overstated or if improvements in sensor capabilities outpace stealth, the dominance of defense may persist indefinitely; if Chinese statistics are completely fallacious, if water and soil conservation efforts succeed, or if biotechnology produces some pleasant surprises, many more mouths may be fed than at present; and if oil reserves are more plentiful and the effects of greenhouse emissions less severe than is now feared, the empire of man over nature may be extended further. One condition is unalterable, however. There is only so much fresh water on the planet, and hence there must eventually be a limit to the amount food available to nourish the human species.

The state of nature does not tend to a state of war if the fundamental motives of those in it do not drive them into conflict. But “if any two men desire the same thing, which nevertheless they cannot both enjoy,” Hobbes observed coldly, “they become enemies.” Whether this irreducible struggle obtains de-

75. The terms are from Singer and Wildavsky, The Real World Order, chapters 1–3.
77. If energy were to become cheap enough to permit massive desalinization of sea water, even this constraint could be escaped, but this is not likely soon. Postel, Last Oasis, p. 45.
pends not only on the wisdom and virtue of the actors but also on factors beyond their immediate control. If we or our descendants live in a world where offense holds the advantage over defense, where a swelling population is exceeding its means of comfortable subsistence, and where industry is pressing against natural constraints, such “enemies” will abound. Life for many will be poor, nasty, brutish, and short, though, alas, not solitary. Realism will remain our best guide and, as Hobbes warned, clubs will be trumps. The affairs of nations and the collisions of interests, passions, and ideals between peoples will be decided, as they have been so often in the past, by the implements of war and those who wield them.