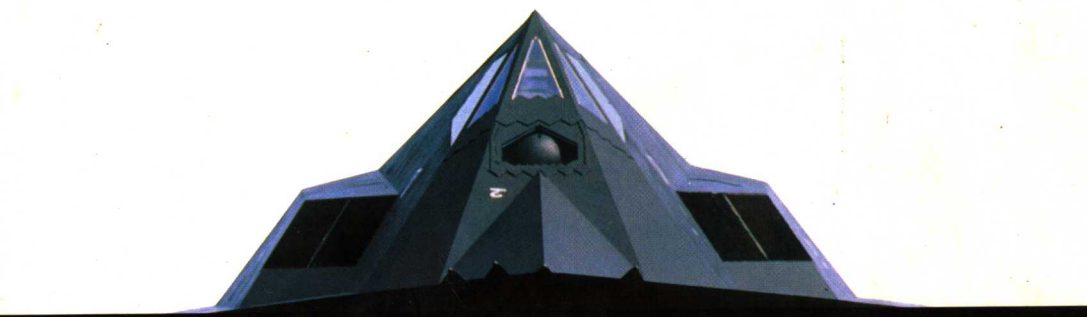
# THE FUTURE *of* WAR

## POWER, TECHNOLOGY & AMERICAN WORLD DOMINANCE IN THE 21st CENTURY



EORGE & MEREDITH FRIEDMAN

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# THE Future OF War

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George & Meredith Friedman

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First Edition

Dedicated to the memory of

NORMAN M. FINE

*Whose life was bound up with the revolution in warfare*

and to

1ST LT. MEREDITH M. LEBARD & CADET DAVID A. FRIEDMAN

United States Army United States Air Force ROTC

*Who have chosen to serve their country and participate in that revolution's future*

# Preface

We began this book in response to the euphoria of 1991–1992. In the wake of the collapse of the Soviet Union, several truths were commonplace: the American era was coming to an end because of the failures of the American economy; military power was less important than economic power; history had certainly taken a dramatic turn. There are, of course, many who continue to believe these things—but fewer than before. The American economy has proven far more robust than its critics believed, war remains ubiquitous, and nations continue to struggle with one another over moral and material issues.

We take a very traditional view of the international system. Wars will continue to be waged, military power will matter a great deal, the American economic miracle that defined the twentieth century will continue to define the twenty-first. We are also making a radical argument. While warfare will continue to dominate and define the international system, the manner in which wars are waged is undergoing a dramatic transformation, which will



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greatly enhance American power. Indeed, the twenty-first century will be defined by the overwhelming and persistent power of the United States. We are arguing that the rise of American power is not merely another moment in a global system spanning five hundred years but is actually the opening of an entirely new global system. We are in a profoundly new epoch in which the world that revolved around Europe is being replaced by a world revolving around North America.

Part of the reason for this historical transformation is rooted in geopolitics. The United States is the only major power native to both the Atlantic and Pacific Oceans—and the Pacific has come to rival the economic importance of the Atlantic. But part of our reasoning is strictly military in nature. Something extraordinary happened during Operation Desert Storm. The sheer one-sidedness of the victory, the devastation of the Iraqi Army compared to a handful of casualties on the American side, points to a qualitative shift in military power. On the surface, Iraq had a formidable force. By the standards of 1970 or even 1980, Iraq should have been able to inflict substantial casualties on allied forces. We have seen lopsided victories in the past—Poland in 1939 or Egypt in 1967—but never such low casualties on one side. In fact, the Iraqi Army, a reasonable force for the postwar world, had met an enemy from the post–Cold War world. A generational shift had taken place.

Like others, we focus on a new class of munitions that played a critical part in Desert Storm—precision-guided munitions (PGM). Precision-guided munitions differ from other munitions in one fundamental respect. Traditional munitions, once fired, were under the control of the laws of gravity and ballistics. In contrast, precision-guided munitions could correct their course after they were fired. Whether guided by their own sensors and computers or by human control, precision-guided munitions transformed the statistical foundations of war and with it the calculus of both military and political power. Where previously it would have been necessary to fire thousands of rounds to destroy a target, now it only took a handful.

**Many noted this event. In our mind, however, this innovation ranks with the introduction of firearms, the phalanx, and the chariot as a defining moment in human history. The phalanx catapulted Greece to glory; the chariot gave us the Persian Empire. Europe conquered the world with the gun. Each weapon defined not only the manner in which wars were waged but the very texture of human history.**

For one thing, the new class of weapons hold open the possibility of an end to the age of total war. Total war was built on two characteristics of gun technology: inaccuracy and massed explosive power designed to

compensate for it. Masses of weapons had to be produced and fired or dropped together in order to hit elusive targets. This required the total mobilization of society to make war and made society as a whole the target of warriors. The result has been an unprecedented and unbearable slaughter. The accuracy of PGM promises to give us a very different age; perhaps even a more humane one. It is odd to speak favorably about the moral character of a weapon, but the image of a Tomahawk missile slamming precisely into its target when contrasted with the strategic bombardments of World War II does in fact contain a deep moral message and meaning. War may well be a ubiquitous and terrible part of the human condition, but war's permanence does not necessarily mean that the slaughters of the twentieth century are also permanent. It is possible that our situation is not hopeless.

We believe that we are entering a new epoch of war. But let us be emphatic that while the manner in which wars are waged is about to change dramatically, the eternal foundation of war remains unchanged. What was true for the Greek hoplite was true for the American GI. It will also be true in the epoch of precision-guided munitions. The warrior's trade will remain one of courage, dedication, and suffering. Precision-guided munitions will not render war antiseptic, any more than did the tank or crossbow or bronze armor. Technology changes how men fight and die, but it does not change the horror and glory of battle, nor does it change the reality of death.

This book, then, is about one part of the future of war. Another part, the eternal truth of warfare, is not discussed here. This is not because it is of no importance. Quite the contrary, it is probably more significant than the part we have selected to write about. We are content to address one part of the future of war—its technology. In a way, it is simpler to write about this than to explain why a soldier would choose to place himself between home and war's desolation. That is a matter that touches the depths of the human condition. We will content ourselves with a simpler theme—the manner in which the coming centuries are being shaped by a new, still primitive, technology.

The new generations of weapons are controversial. No radical new technology is ever uncontroversial, and nowhere are they as controversial as in the military. Both the tank and the airplane were denigrated by serious military thinkers in the decade after their introduction. It is therefore no surprise that the General Accounting Office, long noted for missing the forest while busily counting the trees, issued a report in July 1996 claiming to show that. "Many of DoDs and manufacturers' post-war claims about weapon system performance—particularly the F-117,

TLAM Tomahawk and laser guided bombs—were overstated, misleading, inconsistent with the best available data or unverifiable." The GAO particularly took issue with claims in advertisement that munitions had achieved one bomb, one hit accuracy. Obviously, this had not been achieved. Nevertheless, the worst case evaluations were extraordinary in shifting the statistics of warfare. Put simply: in Desert Storm, we saw the Model-Ts of precision-guided munitions. If these were the Model-Ts, then what will fully mature systems achieve? The forest is far more important than an accountant's trees.

We must bear in mind that it took centuries for firearms to move from the periphery of the battlefield to the core. There is a deep chasm between the advent of technology and its full implementation in doctrine and strategy. The process that began with the application of Star Wars technology to the tactical battlefield first showed itself in Desert Storm in a limited and immature way. In due course, the older technologies of armor, manned aircraft, and aircraft carriers will pass away. The key is in the term *in due course.* This process is under way, but the new technologies can only supplement and not yet supplant existing technologies.

It is important to us that our readers understand that we are speaking of a generational and even millennial shift. Aircraft carriers and tanks will be replaced, but nothing is available today that can replace them. To dismantle the existing forces of the United States in anticipation of the new technology would be nothing short of criminal folly. We are here examining the future measured in decades. Nothing will damage our national security more than thinking that the future, in its fullness, is here today.

Therefore, we ask the reader to bear three things in mind as he reads this book:

- This book focuses on the United States not only because we are Americans but also because we see America as the still-emerging center of gravity of the global system. The military America shapes will be the archetype of military power.
- This is a book about part of war—its technology—not the whole of war. Our focus on technology should not be mistaken for a belief on our part that the soul of the warrior and the brutality of war have been abolished by an antiseptic technology. At the same time, we harbor genuine hopes that the terrors of the twentieth century might be behind us.
- This book is not intended and must not be taken as a prescription for next year's defense budget. The United States is not in a

> position by any means to slash defense budgets and manpower in the hope that new technologies will do the job at lower costs. Quite the contrary. Prudent policies will require higher budgets as older forces are maintained and even modernized, while new technologies are prepared and matured.

This book, therefore, is about one part of the future of war. It is not about the whole of war, and it is not really about war today. It is not about the art of soldiering and it is not about the problems of budgets. It is about the end of a five-hundred-year epoch—the epoch of Europe and guns—and about the beginning of a new epoch—the epoch of America and precision-guided munitions.

We are, of course, indebted to the many people who, over the past years, helped us in writing this book and in thinking about war. We are grateful to those at Louisiana State University and elsewhere who helped us along, particularly Leonard Hochberg, Matt Baker, Tim Reynolds, and the many who helped with editing—Laurel, Becky, Amanda, Amy, and others. We are also grateful to Kitty Ross for her help in reshaping this manuscript. Above all, we are grateful to our editor, Michael Denneny, who stuck by us with patience above and beyond the call of duty, and to his assistant, John Clark.

Finally, we would like to thank two people, dear friends who were indispensable in writing this book but who passed away from the same terrible disease before this work could be finished. Bob Oskam, our first literary agent, started us on our way and helps us still, if only through memory. Paul Olsen, our dear friend of many years, helped shape many of the ideas in this book. We hope he would be pleased. We will always be indebted to him. To these and all the others who aided us, our thanks.

Finally, we would like to thank our children, Memi, David, Edward, and Jonathan, and pray that we will never again have to hear their sweet voices declaim, "Are you guys ever gonna finish that book?"

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# Introduction

## THE DAWN OF THE AMERICAN EPOCH

The twenty-first century will be the American century. This may seem an odd thing to say, since it is commonly believed that the twentieth century was the American century and that, with its end, American preeminence is drawing to a close. But the period since American intervention determined the outcome of World War I to the present was merely a prologue. Only the rough outlines of American power have become visible in the last hundred years, not fully formed and always cloaked by transitory problems and trivial challenges—Sputnik, Vietnam, Iran, Japan. In retrospect, it will be clear that America's clumsiness and failures were little more than an adolescent's stumbling—of passing significance and little note. With the dismantling of the Soviet Union, the American Century truly begins, as the patterns of economic and military life make the United States the center of gravity of the international system. The year 2000 brings to a close the first global geopolitical epoch and opens the door to the second, an epoch that was developing for almost a century before it burst into the open on the streets of Moscow.

The great event for which the twentieth century will be remembered was the collapse of the European imperial system, the result of the Old World's disastrous civil wars, which began with the disputes between Spain and Portugal during the fifteenth century and ended with the two world conflicts. Nearly five hundred years of history—a history written by European warriors and merchants—came to a close. This collapse also created a short and intense competition between the great Eurasian power that had managed for the first time to unite eastern and central Europe under a single rule and the great Western Hemispheric power that ruled the world's oceans more completely than they had ever been ruled before.

Now the struggle is over. The Soviet Union, unable to break out of its encirclement and mired in economic inefficiency, broke apart, and the dream of a united Eurasia shattered. Only one great power has survived—the United States—suddenly and quite unexpectedly alone and victorious. It dominates North America completely. The American Navy goes where it wants and does what it wants, and American troops land in Eurasia and brush aside enemy armies and they intervene in Latin America at will, for reasons as trivial as arresting drug dealers. Other nations may temporarily produce and sell things more efficiently than America, but only with American sufferance.

The collapse of the Soviet Union and the end of the Cold War came almost exactly five hundred years after Columbus's great voyage of discovery. As unlikely as it may seem, these two events were intimately connected. Columbus's encounter with the Western Hemisphere, along with the voyages of men like Vasco da Gama and Magellan, opened an unprecedented era in human history. Under Europe's rule humanity became fully aware of itself for the first time. The fall of the Soviet Union, five hundred years after the founding of the first global system, represents the close of that epoch. The world built on Europe's domination has ended; a new global order founded on American power has begun.

A decade before the collapse of the Soviet Union, an extraordinary event took place, almost unnoticed. In 1980, for the first time in history, the value of transpacific trade equaled the value of transatlantic trade.[1] This meant that control of the Atlantic, by itself, was no longer the key to global wealth; domination of both oceans was now necessary. While a nation that is native to either ocean has a natural advantage over nations that are far away, a nation that is native to both the Atlantic and Pacific is, at least geographically, in a position of unparalleled superiority, assuming, of course, that it is politically and militarily capable of taking advantage of its geography.

Only one nation is both native to the Atlantic and Pacific *and* capable of exploiting that advantage—the United States of America. With the collapse of the Soviet Union, the only power capable of challenging American politico-military might, the focus of the international system has finally and definitively shifted from Europe to the United States.

Great geopolitical transformations are always accompanied by radical shifts in the way of making war. Geography dictates the nature of military technology and culture by determining the type of force required for armed combat. Landlocked nations conduct wars differently than do island nations, and countries whose enemies are nearby fight differently from those whose enemies are far away. The military needs of European powers were wildly different from those of the Mongol hordes.

Because the United States is separated from Europe and Asia, military interventions in Eurasia will always be at long distances, with U.S. forces necessarily smaller than indigenous forces. Force multipliers, weapons that multiply the effectiveness of a smaller number of troops—ours or our allies—have been the foundation of American grand strategy. Therefore, one of the keys to America's power has been a revolution in weaponry.

For the past five centuries, firearms have dominated warfare. All firearms are ballistic in nature—once fired, their projectiles cannot be controlled. And because they are inherently inaccurate, many weapons have to be fired at the same time to have effect. This has meant large armies, large industrial plants, large merchant marines. During the last decades, with the invention of highly accurate weapons whose projectiles' path can be directed *after* being fired, the United States has laid the groundwork for eliminating ballistic weapons. As we saw in Desert Storm, these new weapons made it possible for the United States and its allies to overwhelm the numerically superior Iraqi troops.

This book is about the new epoch in warfare that has been ushered in by the new geopolitical epoch. However, before we can deal with the way future wars will be fought, we must consider whether war has a future at all. This seems an odd way to begin, since the history of mankind has been the history of war. Yet some serious people today contend that war has become obsolete and others contend that the advent of nuclear weapons has made war unthinkable. Still others contend that the end of the Cold War has made political and military considerations far less important than economic ones. **We are truly living in the giddy springtime of the bourgeoisie, in which the radicalism underlying bourgeois ideology has come irresistibly to the fore. Money and personal ambition are seen as having corroded every other human institution—**

**including the nation-state—thereby making war irrelevant.** Indeed, in the endless, earnest discussions of economies without borders, of capital flowing without consideration of politics, sober businessmen have made pronouncements that sound as extreme as those of Marxists, who for a century had predicted the end of the nation-state and the creation of an era of universal peace based on economic development.

Robert Reich, currently a key adviser to President Clinton, put it powerfully: "We are living through a transformation that will rearrange the politics and economics of the coming century. There will be no national products or technologies, no national corporations, no national industries. All that will remain rooted within national borders are the people who comprise a nation."[2]

This belief in the declining importance of nations is not confined to businessmen or economists, or even to Americans, but is shared by leaders as diverse as former secretary of state George Shultz, former French president Valéry Giscard d'Estaing, and former Israeli prime minister Shimon Peres.[3]

The most compelling argument against war's having a future goes roughly like this: The great powers—the United States, Europe, and Japan—are economically interconnected, and war would disrupt vitally important relationships among them. All of these nations enjoy a sufficiently great advantage from the international economic system that the risk of disruption far outweighs any possible advantages that war might provide. It follows, therefore, that there will be no systemic war—that is, no war between the great powers. There might be conflicts between and within lesser nations—and at times the great powers might join forces in limiting these conflicts—but the great conflicts of the past will not occur in the future.

This is not a preposterous argument. On the contrary, it is persuasive and reasonable. Its sole defect is that it is wrong. Economic cooperation breeds economic interdependence. Interdependence breeds friction. The search for economic advantage is a desperate game that causes nations to undertake desperate actions, a fact that can be demonstrated historically. Far greater levels of international economic interdependence existed earlier in this century, and, far from preventing war, helped cause it.

Also, bear in mind that this is not the first time the bourgeoisie has decided war is obsolete. They did the same thing in 1913, on the eve of World War I. In an enormously influential book, *The Great Illusion*, published in 1910, Norman Angell argued that, because of economic factors, war among the great powers was genuinely impossible.

> Even if we could annihilate Germany we should annihilate such an important section of our debtors as to create hopeless panic in London. Such panic would so react on our own trade that it would be in no sort of condition to take the place which Germany had previously occupied in neutral markets, aside from the question that by such annihilation, a market equal to that of Canada and South Africa combined would be destroyed.[4]

Four years later, Angell was proven utterly wrong.

The new radical internationalists are asserting, as their pre–World War I predecessors had done, that the global integration of national and regional economies makes the cost of war so high that no rational nation would undertake it. So they envision the coming age as an extremely peaceful one, in which economic competition will be the dominant theme, political competition secondary, and war unthinkable. Accordingly, the great nations of the world will send salesmen forth with order books rather than soldiers with weapons. Businessmen are seen as more important than soldiers, economists as more insightful than political scientists, and corporations as more powerful than states.

But is the basic assertion true?—Is the current level of interdependence actually unprecedented? We can roughly calculate the degree to which nations have been economically interdependent. We can also determine whether or not conflict was possible at that level of interdependence, simply because we know whether or not wars broke out. For example, we know how much trade took place among the great European powers prior to 1914, and we also know that it was not sufficient to prevent the outbreak of a terrible war. Therefore, if the argument for the declining significance of military power and the declining risk of war is to be taken seriously, it is necessary to demonstrate that international trade and finance today are at much higher levels than they were in 1913, just prior to World War I.

**The extraordinary fact is that, in terms of trade and investment, global economic activity has not surged ahead during the twentieth century but has stayed at roughly the same level as had been attained by the beginning of World War I. Moreover, the minimal increase in international economic activity has been less global than regional, pointing to stronger rather than weaker barriers to international economic integration.**

For example, in 1913, Britain derived one-third of her national income from exports; in 1993, exports yielded less than one-fifth of British Gross Domestic Product (GDP). Taken as a whole, total world

MERCHANDISE EXPORTS AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT (GDP)[5]

| | UK | FRA | GER | BEL | ITA | JAP | US | AUS |
|---|---|---|---|---|---|---|---|---|
| 1913 | 33.9% | 13.8% | 19.2% | 57.1% | 12.4% | 14.2% | 7.2% | 42.2% |
| 1929 | 23.3 | 17.3 | 16.9 | 47.8 | 10.2 | 15.9 | 6.7 | 36.4 |
| 1956 | 22.3 | 14.5 | 15.5 | 32.6 | 8.1 | 9.2 | 5.5 | 14.2 |
| 1975 | 26.0 | 19.0 | 20.7 | 45.2 | 16.4 | 11.1 | 6.9 | 12.3 |
| 1993 | 19.4 | 16.5 | 23.1 | 52.6 | 18.5 | 8.4 | 7.2 | 15.0 |

exports as a percentage of the world's GDP in 1993 were only 12.2 percent—hardly a record-shattering amount. Even if we were to include service exports, little would change. On a global basis, service exports have never accounted for more than 4.3 percent of global GDP (in 1992) and were as low as 1.8 percent in 1988. In 1993, Japan's exports of nonfactor services equaled only 2 percent of GDP.[6] Thus, even assuming that there were no service exports whatsoever in 1913—clearly untrue—global international trade has not broken out beyond levels achieved in 1913.

The only countries whose dependence on trade has surged are the Europeans, particularly those who belong to the European Community.[7] As the European Community unites, it resembles more and more a single nation, or at least a single economic entity. Counting trade between Belgium and France as international trade today is about as reasonable as regarding California-Illinois business as international trade. Thus, if we exclude trade between members of the European Community, we find that reliance on exports falls to only 8.6 percent, a bit higher than the United States and much lower than Japan.

**In short, net exports, even including services, are a small percentage of total world economic activity; moreover, they have not been growing in the past generation but have fallen to below 1913 levels.** Claims for the increasing importance of international investment are similarly off the mark.

In 1913, leading nations exported about 4 to 8 percent of their GNP to other countries. Today, no country invests more than 2.3 percent of its GNP overseas, and the average is well below 2 percent. It is therefore extraordinary to hear people talk about the high levels of interdependence in the world today and how this will prevent war. Increased interdependence and globalization are an illusion. There was certainly a surge in global activity in the immediate postwar period, but this was an aberration. As the devastation wrought by war was cleared, economic activity in

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