

War Made New

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Course of History, 1500 to Today***

Although I'm going to talk mainly about my book in the next few minutes I've just come back from Iraq so I'm pretty up to date on what's going on over there and I'm going to get into that a little.

The book itself is a study of revolutions in military affairs—these major upheavals that occur when you have new technology combined with new doctrine, new tactics, and new organizational techniques that change what happens not only on the battlefield but also in the international balance of power. Now, the question that authors are often asked is “How did you get interested in this subject?” I suppose from your perspective the more germane question is “Why should you be interested in this subject?” Well, the answer is really the same, the reason I got interested and the reason you should be interested is because I think we're in the middle of a revolution in military affairs right now, the information revolution, which is something that became evident to a lot of people around the time of the Gulf War in 1991. There it showcased a lot of these amazing technologies made possible by the march of computer science essentially. Technologies like the first use of global positioning satellites that made the famous left-hook through the sands of Iraq and Kuwait possible, or the use of all these surveillance aircraft, like the JSTARS and AWACS or, in many ways the most amazing technology of all, precision-guided munitions, or “smart bombs.”

Back in World War II in 1944 when my wife's grandfather was flying B-17s over Europe they were lucky if they could get a bomb within half a mile of the target and so if you wanted to take out a target, let's say a German war plant, you had to send a thousand aircraft with 10,000 crewmen. You'd risk a lot of them—you'd probably lose a lot of them—and you still might not take out the target even as you were taking out the entire city around it because once the bomb left the airplane that was it—it was pretty much on its own. So, it was very hard to control where it was going to fall. It was very hard to get it on its target.

Well, thanks to advances in the last several decades with laser guidance, with satellite guidance, with all sorts of other systems, by the time of the Gulf War in 1991 one airplane, one bomb, and one pilot could achieve what had taken a thousand aircraft to achieve in 1944. You can get a bomb on target with a 95 degree probability of accuracy. That's the kind of thing that we take for granted these days but which is part of this revolution in warfare wrought today by information technology. In order to better understand the kind of challenges and the kind of shifts that we're going through today what I do in the book is look not only at this revolution of military affairs but at four revolutions of military affairs over the course of the last 500 years from the gunpowder revolution which began to transform warfare around 1500, then the first Industrial Revolution whose impact was felt from 1850 onward, from the Crimean War and the U.S. Civil War up

through World War I. Then the second Industrial Revolution, which is the term that I give for the airplane and internal combustion engine, radio, tank—that group of technologies whose impact was felt in World War II, and now, of course, the Information Revolution is driven by advances in microchip technology since the 1960s.

Obviously, this is a big chunk of history to bite off. To make it a little more digestible what I do in the book is I tell the story through a series of battles that illustrate the larger trends that were going on in the world at the time—beginning with the French invasion of Italy in 1494 and concluding with the American invasion of Iraq in 2003. I try to show different kinds of battles but also try to stress the human element because although this is a story about technology, it's really a story about the impact of technology and how people reacted to it. What I try to do is to focus on how soldiers and their commanders struggle to assimilate these new ways of war – whether it was a Frances Drake or John Hawkins in 1588 struggling to figure out how to take advantage of artillery mounted on sailing ships to defeat the Spanish Armada, or Curtis Lamaisse, struggling in 1944 to figure out how to take advantage of B29 long-range bombers to defeat Japan. It's really a story about the human element and how that's been changed in warfare through the application of technology. I've been very gratified to see that some of the reviews of the book have actually said it reads like a novel, which I take as a great compliment. I'm assuming that they mean that it's a good read—not that I simply made it all up. Whether it's a good read or not, and I hope it is, I think there's more here than simply of literary or historical interest, I think there's a lot here that we need to think about as we think about the future of America and, indeed, of global power. At the end of this book, after telling the tale of the last 500 years, I try to take a step back and in many ways the hardest part of the book is to say what does this mean? What are the lessons that we can draw out of this as we think about the future?

What I want to do is share just a few of the major things that I pulled out from the research and writing I've been doing over the last few years that produced this book. The one point that I want to stress which in some ways, I think, is obvious, but it isn't so obvious any more because we neglect the study of military history—at the high school and university or graduate levels, we tend to neglect the impact of military prowess on the making of history—one of those things that really jumped out at me as I was doing the research for this book is what a huge difference revolutions in military affairs have made and how much they've contributed to making the world look as it does today for both good and ill. Ask yourself “who were the most powerful military forces on the planet, who were the dominant military forces on the planet around 1400?” I asked this question at a military college that shall go unnamed and one of the answers I got back was Napoleon. See what I mean about not teaching military history, even at a military college? If I were summing up the international outlook in 1400 or so I would probably say either the Chinese or the Ottoman Turks or possibly the Tartars under Tamerlane, the remnants of the Mongol hordes, one of those would probably be the dominant military power around 1400 or so.

The key point here is it wasn't Europeans. Europe was a pretty insignificant part of the world around 1400. In 1450 Europeans controlled about 14 percent of the world's land surface, not a whole heck of a lot. By 1914, Europeans controlled about 84 percent of the world's land surface, pretty much everything. In many ways, that was the big story of the last 500 years—the rise of the West. How was that possible? Well, in essence because Europeans were so much more successful than anybody else in taking advantage of, first the gunpowder revolution, and then the industrial revolution, including the Chinese who invented gun powder but for various cultural reasons couldn't harness it as effectively as the Europeans did. The Europeans took advantage of that technology which allowed them to go pretty much everywhere and to conquer pretty much everyone that they met. That was the story of the rise of the West.

But not everybody in the West was equally successful. Spain and Portugal were a couple of the early movers in harnessing gun powder technology for warfare and using it to carve out this vast empire in the New World in the 15th and 16th centuries. But by the 18th century, by the time industrialization was starting to get underway they had become also-rans. They had lost the race for military primacy and you saw the emergence of this northern European chair of great powers—Britain, France, Prussia, Austria, Russia—that were the great powers of Europe and of the world by the late 18th century.

Then industrialization gets going full steam ahead and some countries are able to industrialize effectively and others are not and those who are not pay a catastrophic price on the battlefields. By the end of World War I, the major conflict of the first industrial era, and you see the collapse of ancient dynasties—Ottoman, Romanoff, and various others who could not keep up with the pace of military innovation and at the same time you see the rise of new superpowers like Germany and Japan that are adept at waging industrialized warfare.

Then you come to World War II, the second major conflict of the second industrial era, and you see another major turn of the tide, you see pretty much all of the great powers of the past consigned to second or third tier status and the emergence of two new superpowers dividing the world between them. Jump ahead a few years and you come to the 1980s and the early 1990s. Why was it that the Soviet Union collapsed? I would argue that although there were huge inefficiencies within the communist system which had obviously been there all along, one of the precipitating factors was the information revolution—the fact that we had a Silicon Valley and they did not. They realized they were falling further and further behind the West in the application of computers, to the civil sector, but also to the military. They tried to catch up, they tried to reform the system—that’s what Gorbachev was trying to do—but he failed and instead that led to its collapse. As a result of that by the mid-1990s the United States was standing alone at the top of the world as this unchallenged hegemony of the global system. Now, with our military having shown its prowess in the Gulf War in 1991 and our major rival having collapsed in the years since then we’ve learned that being King of the Hill isn’t all it’s cracked up to be—with great power comes great discontent.

Let me pause and address one of the big questions that I ask in the book, what does it take to come out ahead in this struggle for global primacy? How do you become one of the victors and avoid becoming one of the vanquished? Now, you might think because this is a story about technology and warfare that the answer that I would give is that you have to have much better technology than your adversaries. That sounds logical and yet, oddly enough, that has seldom been the key to long-term success. What you see if you look at the history is that successful technology tends to spread around very, very quickly. It tends to get copied very, very quickly. The classic example, of course, being one of the most successful R&D projects of all times—the Manhattan Project, which did a tremendous job of delivering the atomic bomb by 1945 yet within four years the Soviets had exactly the same thing. And we’re seeing that process happening today. When you think back over the last several decades one of the key American advantages over just about any adversary has been our system of reconnaissance satellites. The imagery that we get from those satellites, going back to the Eisenhower administration, has been a multi-billion dollar investment for the United States to give us an edge on the battlefield. Well, guess what? That edge is dissipating because anybody in the world today has access to satellite reconnaissance imagery—all they have to do is go to Google Earth. It’s out there for anybody to use and our enemies realize that. There was a story I saw saying that insurgents in southern Iraq were using Google Earth to do reconnaissance work on British military installations which is

what you'd expect to happen because successful technology tends to spread very quickly. This is no longer an American monopoly. That's been very much the pattern of history.

So, if you're not going to get a long-term lasting advantage based on superior technology, what does it take? Well, the answer I came up with after four years of study is not terribly surprising and it's not terribly sexy but it does have the advantage, I think, of being true. It's organization, it's management, it's essentially who has a more effective governmental structure for harnessing commonly available technology.

Let me give you an example of that from one of the most famous revolutions in military affairs of all time, the blitzkrieg. How was it that the Germans were so successful in the early years of World War II in overrunning such a vast portion of Europe? It wasn't because they invented the tank or airplane, it wasn't because they had more tanks and airplanes than the allies, it wasn't even because they had better tanks and airplanes. The French actually had better tanks than the Germans so why was it that France fell as quickly as it did? Well, there were a lot of reasons, but if there was any technological edge that the Germans had it was from the fact that most of their tanks and airplanes had two-way radios and that wasn't the case for the allies. Now, again the radio was not a German invention it was invented by Marconi, an Anglo-Italian. Everybody in the world had radios in 1940 but only the Germans realized how incredibly important radios could be for enabling this fast-moving war of maneuvers. You could communicate with your units in the field, tell them what to do, change tactics on a day-to-day basis and punch very rapidly through enemy lines, whereas the allies didn't realize this was going to be so important because they were still locked in the static, trench warfare, mindset of World War I. They were preparing to fight another defense battle where it didn't matter if you could communicate with your forces in the field because you weren't going anywhere.

The essence of the German victory wasn't better technology; it was the fact that they were able to out-think their adversaries and, therefore, to outfight them and if you were looking for the German secret weapon, if there was one, I would argue it wasn't the Panzer or the radio, it was the German general staff, which was an extremely successful instrument of military organization going back to the early 19th century. The German general staff pioneered many of the instruments of military planning which are still in use by every military in the world, such as war games. They were this group of intellectuals in uniform who planned for war in peace time and did it much more successfully than anybody else and, therefore, made their enemies pay a heavy cost when fighting broke out.

Now there were limits to what even a very successful general staff could do as seen from the fact that Germany wound up losing World War I and World War II. But keep in mind that it only lost after the end of many years of fighting which took a very heavy toll and the allies had to pay a huge, huge cost in blood and treasure to defeat the Germans after the initial gains that had been made in both wars. And that, I think, is an indication of the superior planning process that went into utilizing new inventions and integrating them into the German war machine. That's an example of what I'm talking about – about the importance of organization as being a key determinant of military success or failure.

Now, the kind of organization you need has changed over the course of the last 500 years from the dawn of the gunpowder age. Up until pretty recently the impact of the battlefield has been to lead government to become bigger and more centralized in order to harness the resources of society and mobilize it for war instead of marching off into battle. In fact, the gun powder revolution was a major impetus for the formation of the first nation-states because feudal lords

didn't have the resources to compete on the gun powder battlefield and this led to the rise of super lords, the absolute monarchs who could field these large armies and navies equipped with guns. The two industrial revolutions led to the rise of these giant, welfare and warfare states that could send millions of men marching off into battle and get millions of people killed but also pay pensions to those who survived.

That's been the story of most of the last 500 years. But as many people have pointed out the trend has been going the other way for the last several decades, because, whereas the previous revolutions in warfare were powerful forces of centralization the information revolution is a powerful force of decentralization. Again, this is not news; this is something that has been evident for a number of years now, the fact that the monopoly of information once held by a few large hierarchical organizations has been broken. For the high school students in the audience it must seem like science fiction to imagine a time when you had to wait until 6:30 p.m. in the evening to get your news from one of three network newscasts. That seems fantastic to contemplate when right now we're bombarded with news 24/7 from a variety of sources and we get all sorts of viewpoints beamed into us all the time.

But that's just a microcosm of what's been going on. That decentralization of information technology has radically altered the playing field in all sorts of ways. You see it in business where all sorts of large vertically integrated corporations which were once very successful in the industrial age aren't so successful today. Companies like U.S. Steel and Ford and GM and many others which had once looked like world beaters no longer are. And you see the rise of so many new competitors whether it's Toyota, or Wal-Mart, or eBay, or Microsoft, Dell and so many others who have been much more nimble and quicker to react to the forces shaping our world today. I would argue their advantages do not come from superior technology per se, but really from superior management techniques, from the way that they utilize technology better than the other guy.

Well, exactly the same thing is happening in the realm of international security affairs. When I look at what's going on in the world today, sadly I have to conclude that in many ways our enemies have been doing a better job of harnessing information technology than we are. Even though we invented this stuff, our enemies are taking advantage of it. All you have to do is look at the way Al Qaeda and other groups harnessed the Internet or satellites, television or cell phones, DVDs, jumbo jets, and all these other technologies to conduct their jihad around the world. And we're having a hard time keeping up because in many ways Al Qaeda is this organization that is perfectly set up for this information age because it's not a vertical hierarchy, it doesn't have an order that we recognize, it doesn't have a CEO or a vice president, it doesn't have a president and generals, it's much more defused than that. It's this network, not a hierarchy. And as many business theorists have argued these kinds of networks are much more effective in the information age, they're able to move much more nimbly than we are. There are many examples I could cite but let me just cite a couple from Iraq which just happen to be in my mind because I was there not long ago. What used to be known as psychological operations is obviously a huge aspect of this war because it's a struggle for hearts and minds, not only in Iraq but also in the United States and in other countries and in many ways we're getting our clock cleaned by these adversaries who are much more nimble in taking advantage of information technology to get their message out. In Iraq today sometimes one insurgent will set off a big bomb and they will have cameramen standing by to film the carnage and within hours they're uploading videos to cell phones all across Iraq. And what do we do? Well, two or three days later we may issue a press release. We're behind the curve and why are we behind the curve? Well, because under the system as it's currently set up, what does it take to issue a press release—

which would not seem like one of the most earth shattering things that a military could do—but what does it take to issue a press release? Well, it can't be issued by a platoon, it can't be issued by a company, it can't be issued by a battalion or by a brigade or by a division, it has to be issued by a corps-level commander. A three-star commander in Iraq has to sign off any press release that goes out and you know what? It takes a little while when you need approval from that many layers of authority to issue a mere press release to get the information out there whereas Al Qaeda doesn't have to go through 20 layers of bureaucracy, they just go ahead and do it and they know a very simple technique for figuring out what works and what doesn't in this war that they're waging. They go out and try it, and if it doesn't work they die and that's the end of it, and if it does work, well, unfortunately the Americans and Iraqis or somebody else dies, and then they replicate that very, very quickly across the entire country and, indeed across the entire world using satellite TV, the Internet and all these other media at their disposal. We're usually at least half a step behind them unfortunately.

When we look, for example, at the issue of IEDs, Improved Explosive Devices, which have been the number one killers of American troops over the last four years of the war, this is very simple technology but we have not been able to stop the damage that it does. Part of the reason is that it's much harder to defend than it is to attack, but also part of the reason why is that we're always a little behind the curve. Back in 2003-2004 you may remember the big controversy was about getting armored Humvees to Iraq, we didn't have enough to begin with but eventually we got them and so now we go to Iraq and everyone has armored Humvees. We've been getting armored Humvees but at the same time the insurgents have been increasing the power of their explosives, so that now they have explosives that punch through armored Humvees. So now the call is to get these V-shaped hulls out there for these armored vehicles. They're available and they are being purchased in small numbers, but do you know how long it will take to get enough of these specially shaped armored vehicles out there? It will take years because this is the way the procurement bureaucracy works. It takes years to procure anything. You have to get the appropriations, you have to go through the multiple layers of command, you have to go through the testing, you have to get out in the field. All of these layers of bureaucracy which slowing down our response that our enemy doesn't have to deal with.

There are many different aspects of the struggle against Al Qaeda but one of the central issues that we face is can we react as quickly and can we be as agile as our enemies? Can we adapt this industrial age bureaucracy that is the U.S. government to meet the demands of information age of warfare? In the 1990s there was an assumption that if there was an information revolution it was going to read down to our benefit—that we would be the only power building stealth aircraft, we were the only power building precision-guided munitions, we would be the only power building JSTARS and AWACS and Predators and all these amazing systems. We still have a monopoly on a lot of these high-end systems, but our enemies are figuring out how to fight in ways that negate and go around our firepower advantage. They're using guerilla and terrorist tactics very, very successfully and we have to figure out can we adapt to meet those challenges. That's essentially going to be the story of the next few years, I think, in terms of the global war on terror and what goes on in Iraq and Afghanistan. There's a learning race going on and the question is are we going to learn faster or are they going to learn faster? Unfortunately, up until now I think they've been learning faster. But I think there are some positive signs and I think we are making changes. You see it just in the fact that the army and marine corps just this last year issued a new counter-insurgency field manual which I wish we'd had four or five years ago, but better late than never. We're making those adjustments and especially the personnel out in the field at the lower levels—the lieutenants, the captains, the majors, the lieutenant colonels—they're making adjustments all the time because they're on the front lines, they're the ones who are dealing with

these changing enemy tactics. Unfortunately what I see too often is that the higher level bureaucracy, both in the military and the civilian side of government, is more a hindrance than a help to them. That's what I think we need to be thinking about—how can we make it so that our government is structured so that it actually helps the fighters on the front lines, that helps those who are waging these battles to be more effective instead of hindering them with too many layers of bureaucracy?

I don't have a ten-point program for how to achieve this feat. That's very hard to do and I didn't write the book because I have the answers. The reason I wrote the book was merely to frame the problem in the broadest possible historical perspective and to spark some discussions, some dialogue about what we do to address these very real issues that are really matters of life and death.

Thank you.

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This is a "first draft" transcript. A more fully edited version will be posted
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