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Maureen Wigge

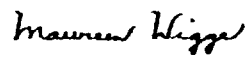
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14. ABSTRACT In late 2005 the Wargaming Department of the Naval War College asked CNA to help it develop a new approach to wargaming, one that provides structured and disciplined techniques for accommodating "Fourth-Generation Warfare" (4GW) and related new operational concepts. Even before the end of the Cold War there were claims that the established ways of making war were becoming obsolete. Since the collapse of the Soviet Union, these claims have become more widespread, influenced by the rush of events, the rise of new threats, and technological developments. The proponents of the 4GW concept have raised important issues that are complicating the debate as to what is the best way to prepare to defend ourselves. The purpose of this paper is to explore some of these ideas.						
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Summary

In late 2005 the Wargaming Department of the Naval War College asked CNA to help it develop a new approach to wargaming, one that provides structured and disciplined techniques for accommodating "Fourth-Generation Warfare" (4GW) and related new operational concepts.

Even before the end of the Cold War there were claims that the established ways of making war were becoming obsolete. Since the collapse of the Soviet Union, these claims have become more widespread, influenced by the rush of events, the rise of new threats, and technological developments. The proponents of the 4GW concept have raised important issues that are complicating the debate as to what is the best way to prepare to defend ourselves. The purpose of this paper is to explore some of these ideas.

Although the focus of this discussion is 4GW, this paper also examines several related ideas about how experts are projecting that the conduct of war may be changing at the start of the 21st century: Information Age Warfare, the Revolution in Military Affairs (RMA), and Effects-based Operations (EBO). We integrate these ideas with those of the proponents of 4GW proper in an attempt to elicit some insights applicable to the design of wargames exploring such issues in the future.

Our approach is to:

- Summarize the basic concepts of 4GW and related ideas
- Critique the validity of the sources and arguments of the proponents of these ideas
- Assess their applicability to recent and projected developments of warfare in order to sort out the essential value these ideas

may hold for understanding the conduct of war in the coming decades

- Describe some ways in which we can integrate these new concepts into future wargames.

Our exploration of these ideas takes the form of an academic inquiry. In essence, we are trying to determine how these concepts, stripped to their essentials, change the ways and means of war and, therefore, how they should affect the practice of wargaming.

We begin with a review of the literature to enable us to understand the nature of the ideas being proposed, and to try to explain how their proponents intend for them to fit within the dynamics of future conflict. We follow this review with a detailed critique to ascertain which elements of these ideas are genuinely new and innovative, and which can be seen as old ideas in new guises. Based on our understanding of these ideas and our critique of their propositions, we explore their implications for the conduct of war—in combination with existing concepts. We conclude by exploring some ideas derived from our investigation that may be useful in developing wargames that are effective in simulating future conflicts.

Our key findings are as follows:

- The conduct of war is changing; the proponents of 4GW have identified some of the most important changes, but they have also overstated others in ways that may be counterproductive to improving our understanding of what is going on.
- The real changes we are observing in the evolution of warfare are in part the result of an apparent decline in “conventional” warfare between states. This decline is attributable to the development of a globalized community, and to the devastating destructive potential of modern weaponry.
- As a result, although clashes of conventionally trained and equipped troops may still take place in this new environment, other forms of combat—information warfare, covert operations, asymmetric strategies—are becoming more prominent.

- The very same developments in technology, economics, culture, and communications that are enabling the rapid pace of globalization, are also enabling so-called “non-state” actors to assume a more visible—and potentially more deadly—role on the world stage than was possible for them to achieve in the past.
- The challenge to traditional powers is to find the appropriate balance between the “old” ways of conducting war and the “new.”
- Achieving this balance will require a restructuring of organizations, forces, and doctrines—and perhaps most importantly, a restructuring of “mind set”—in order to address the changing nature of the threats that are most likely to challenge those powers in the environment of 4GW.
- Wargames designed to explore 4GW-type threats and response to them must incorporate better an understanding of the asymmetries of worldview between the opponents, in order to incorporate into the game the why and the how of what each side thinks and the effects on what each side does.
- In particular, the most difficult part of designing a 4GW wargame—a wargame that reflects the realities of a conflict between opponents with genuinely asymmetric worldviews—will be to create the guidelines necessary to allow the game’s players to develop innovative capabilities and actions, and to implement and adjudicate them effectively during the play of the game.

Overview

Over the last 25 years or so, a number of new ideas have been advanced and discussed regarding ways in which the conduct of war is likely to change, and what can be done about these changes. The key ideas have been given various names, including:

- Information-age warfare
- The revolution in military affairs (RMA)
- Effects-based operations (EBO)
- Fourth-Generation Warfare (4GW).

In some of these concepts, and particularly 4GW, there are two implicit—often explicit—assertions. The first is that the “Clausewitzian” view of warfare, which has been influential, if not preeminent, in Western thinking about war for nearly 200 years, is now obsolete. The second is that the developed nations are likely to be incapable of coping with the new ways of war.

To explore the implications of these ideas, and to discuss their validity, this paper is organized in the following manner:

- *Basic ideas.* What are the ideas being proposed? What are their proponents saying about them? What evidence do they advance in support of these arguments?
- *A vision of war in the future.* How do these ideas fit together? How are they supposed to work in practice?
- *Critique.* Is there historical substance to the proposed ideas of revolutionary change in warfare? How do they compare with earlier innovations in warfare? Do they really represent revolutionary changes or are they indicative of evolutionary trends?

- *"Where's the beef?"* What conclusions can we draw from our critique? Have the proponents of 4GW and other concepts made real contributions to our understanding of the future directions of warfare? How can we separate the useful and insightful concepts from the merely ordinary?
- *Fighting the Fourth-Generation threat.* What is the nature of the threat? How can we cope with it? What changes may be required in the way we fight wars?
- *Conclusion.* A summary of the results of our inquiry and of its implications for future wargaming. How can we reflect the genuinely innovative aspects of these ideas in wargames? Will major adjustments to gaming techniques be required?

Basic ideas

Fourth-Generation warfare

Proponents of Fourth-Generation Warfare view it as the next stage in the history of modern war. The name derives from their assertion that modern war has unfolded in a series of phases, each of which was rooted in a particular combination of technologies, organizations, tactics, and strategies.¹ Their starting point is the idea that “modern war” is a little more than 350 years old, having developed as a result of the Peace of Westphalia (1648) that ended the Thirty Years' War. William S. Lind, Director of the Center for Cultural Conservatism at the Free Congress Foundation, the author of several books on military policy, and the man who coined the phrase 4GW, says that

before the Peace of Westphalia, many different entities waged wars. Families waged wars, as did clans and tribes. Ethnic groups and races waged war. Religions and cultures waged war. So did business enterprises and gangs. These wars were often many-sided, not two-sided, and alliances shifted constantly.²

Lind and his supporters contend that Westphalia gave the state a monopoly on “legitimate” organized violence, and that since the Westphalian dispensation, the conduct of war has passed through three phases, and is now entering a fourth.

-
1. The literature on 4GW is voluminous. The “Ur” source is William S. Lind, Keith Nightengale, John F. Schmitt, Joseph W. Sutton, and Gary I. Wilson, “The Changing Face of War: Into the Fourth Generation,” *Marine Corps Gazette*, Oct 1989, pp. 22-26.
 2. William S. Lind, “FMFM 1 A: Fourth Generation War,” http://www.d-n-i.net/lind/4gw_manual_draft_3_revised_10_june_05.doc, p. 3, emphasis in the original.

As yet there is not a consensus as to precisely what 4GW means. The concept is more of an hypothesis than a demonstrable theory. As a result, there are differences in definition among the various proponents. Thus, Thomas X. Hammes, a retired Marine Corps colonel and one of the principal proponents of the idea, writes:

- The first generation of modern war was dominated by *massed manpower* and culminated in the Napoleonic Wars. The second generation, which was quickly adopted by the world's major powers, was dominated by *firepower* and ended in World War I. In relatively short order, during World War II the Germans introduced third-generation warfare, characterized by *maneuver*. . . . Fourth-generation wars have now evolved, taking advantage of the political, social, economic and technical changes since World War II.
- An evolved form of insurgency, fourth-generation war uses all available networks—political, economic, social, military—to convince the enemy's decision makers that their strategic goals are either unachievable or too costly for the perceived benefit.³

On the other hand, Lind, who first postulated the concept of 4GW and is among its most prominent proponents, characterizes the generations as follows:

- *First Generation*: Mid-17th to early 20th century. Characterized by a battlefield of order (i.e., line and column tactics), which created a bureaucratic military culture of order. This began to break down with the development of industrial age armies, as the military culture of order clashed with the increasingly disorderly battlefield, leading to a period of often bloody confusion.

3. Thomas X. Hammes, "4GW: Our Enemies Play to Their Strengths," *Armed Forces Journal*, Nov 2004, p. 40-41. See also, Thomas X. Hammes, *The Sling and the Stone: On War in the 21st Century* (St. Paul, WI: Zenith Press, 2004), pp. 2, 208; Thomas X. Hammes, "Insurgency: Modern Warfare Evolves into a Fourth Generation," *Strategic Forum*, No. 214, Jan 2005, <http://www.ndu.edu/inss/strforum/SF214/SF214.pdf>.

- *Second Generation:* Early to mid-20th century. During World War I a firepower-and-attrition model of warfare developed, most notably by the French, that relied on centralized decision-making within a controlling hierarchy, which produced decisive results while preserving the military culture of order.
- *Third Generation:* Mid- to late-20th century. Known as “maneuver warfare” or “blitzkrieg,” like Second Generation Warfare, this developed out of World War I, but was not fully realized until the early German campaigns of World War II, and was then picked up by other powers. Third Generation was characterized by great operational mobility, with decision making pushed down to the lowest levels, and great operational flexibility, with attrition less important than rapid, decisive maneuver to encircle enemy forces, innovations made possible by the development of the internal combustion engine and radio.
- *Fourth Generation:* Mid-20th century to the present. In response to the overwhelming capability of the modern conventional military force, weaker opponents began abandoning its use to resort to alternative ways of waging war, such as insurgency, “terrorism,” and other forms of “asymmetric” conflict.⁴

The argument made by Lind, Hammes, and others is that with the rise of these new Fourth-Generation forms of conflict, the state monopoly on the use of force—which they argue has existed since 1648—has been broken, and many other entities can now fight wars: sects, political parties, criminal cartels, “super-empowered individuals,” and so forth, and conventional armies—burdened by their culture of order—are helpless to respond.

Another prominent advocate of 4GW, John Robb, a former Air Force officer, journalist, and businessman, has a neat summary of what he views as the critical factors favoring this new way of war:

- *Global:* Modern technologies and economic integration enable global operations by small actors.

4. Summarized from William S. Lind, “The Four Generations of Modern War,” <http://www.lewrockwell.com/lind/lind26.html>, and Lind, FMFM, pp. 35-36.

- *Pervasive*: The decline of nation-state warfare has forced all open conflict into the 4GW mold.
- *Granularity*: Multiplication of many extremely small viable groups and a broad variety of reasons for conflict.
- *Vulnerability*: Open societies and economies offer many vulnerabilities and targets of opportunity, while allowing the free movement of individuals.
- *Technology*: New technologies—automatic weapons, cell phones, the internet, GPS, chembio weapons—have dramatically increased the capability of small groups of warriors.
- *Media*: Global media saturation—press, television, internet, cell phone—provides an extraordinary propaganda reach and lends itself to facile manipulation of public opinion.
- *Networked*: New organizational models made possible by improvements in technology are much better at learning, adapting, surviving, and acting.⁵

All of the proponents of 4GW argue that its principal objective is not the destruction of the enemy's force, but of his will to continue the fight.

Victory . . . is won in the moral sphere. The aim of 4GW is to destroy the moral bonds that allows the organic whole to exist—cohesion.⁶

Proponents of 4GW often argue that the “Clausewitzian Trinity” of war making—the ties among government, people, and armed forces—which they claim prevailed during the first three generations of modern war, is no longer valid.⁷ Marginalized during the first three generations, the non-state actors—tribes, sects, criminals, corporations—are once again able to engage in war. Thus, to some extent,

5. John Robb, “4GW,” *Global Guerrillas*, 8 May 2004, http://globalguerrillas.typepad.com/globalguerrillas/2004/05/4gw_fourth_gene.html.

6. Robb, “4GW.” But isn't the object of all war to destroy the enemy's will? We will return to this question below.

7. Lind, FMFM, p. 41.

4GW is a return to the pre-Westphalian politico-military environment, and that given this “decline of the state,” there “can be no purely military solution to Fourth Generation threats.”⁸

Some critical elements of 4GW are:

- There is no distinction between “war” and “peace,” nor “lawful” and “unlawful” activity in the conduct of conflict.
- Concepts such as “civilian” and “military” or “combatant” and “non-combatant” have no real meaning.
- The “front” and the “rear” are the same.
- Asymmetric approaches are the default mode of combat.⁹

One of the main selling points of 4GW theory is that, in the words of Colonel Hammes, “Not only is 4GW the only kind of war America has ever lost, we have done so three times: Vietnam, Lebanon, and Somalia.”¹⁰

Information-age warfare

The notion of information -age warfare has several roots. One of the more important is the work of the “Futurists” Alvin and Heidi Toffler, embodied in books such as *The Third Wave*¹¹ and *War and Anti-war*:

-
8. Lind, FMFM, p. 4. The notion that the “nation-state” is a dying entity is explored in Martin van Creveld's *The Rise and Decline of the State*. (New York: Cambridge University Press, 1999).
 9. These are summarized neatly in an article that has been widely circulated and republished often, by Harold A. Gould and Franklin C. Spinney, “4GW is Here!,” *Center for South Asian Studies Newsletter* (University of Virginia, Fall 2001), www.virginia.edu/soasia/newsletter/Fall01/warfare.html. For republication, see, for example, *Small Wars Journal*, <http://www.smallwarsjournal.com/documents/4gw.htm>, and *The Hindu* (New Delhi), 9 Oct 2001.
 10. Hammes, *Sling & Stone*, p. 3. Oddly, Hammes seems to miss the fact that while the U.S. may have “lost” the Vietnam War, it very certainly “won” the Cold War, of which Vietnam was at best a major campaign. We will return briefly to this point later.
 11. Alvin Toffler, *The Third Wave* (New York: William Morrow, 1980).

Survival at the Dawn of the 21st Century.¹² *The Third Wave* postulates that there have been three great eras in human history:¹³

- *The agricultural age*. Beginning about 10,000 years ago, which initiated the rise of civilization. It was an age based on muscle power and the control of agricultural production.
- *The industrial age*. From about the beginning of the 18th century increasing scientific and technological progress ultimately turned peasants into industrial workers, leading to an age based on mechanical power, characterized by mass production, mass surpluses, and mass culture.
- *The information age*. Just beginning, this age is rooted not in the control of physical power, whether by muscle or machine, but in the control of information. Made possible by the development of electronic media and the means to process data, it will be an age marked by more specialization and greater diversity of forces and actors.

In *War and Anti-war* the Tofflers describe how each age was characterized by a particular way of making war. During the agriculture age, their argument goes, the food surplus allowed us to create and maintain armies, but these were normally small, because the demands of production meant we couldn't spare much manpower from agricultural pursuits. In the industrial age, new crops and technologies led to vastly increased production, both agricultural and industrial, which permitted the release of much larger numbers of men for military service, in turn giving rise to the huge armies and increasingly bloody wars that culminated in the mass slaughter of the 20th century. Now that the information age is upon us, however, the old ways of war are obsolete; mass armies and the contingent investment in vast amounts of equipment will be replaced by leveraging sophisticated information and information technologies. Wars will be fought in new ways by small numbers of highly trained specialists wielding

12. Alvin and Heidi Toffler. *War and Anti-war: Survival at the Dawn of the 21st Century* (Boston: Little, Brown, 1993).

13. For some favorable views of the Tofflers arguments see, "A Third Wave Primer," http://www.thirdwave-websites.com/ind_primer.htm.

ultra-precise weaponry, often against very critical targets, raising the question of whether it may even be possible, as one chapter asks, that there could be "War Without Blood?" And, of course, wars may not necessarily be fought between states, or by warriors, which is an essential feature of 4GW as well.¹⁴

The revolution in military affairs

The notion of three previous generations of modern war and of information-age warfare fit well with the idea that we are on the verge of what a number of theorists believe is a new RMA.¹⁵ Proponents of the RMA argue that through the ages there have been periodic revolutionary changes in the conduct of war that have totally overturned all prior experience, and that we are in the midst of one such today.

The RMA is actually the Western version of an idea first developed by Soviet military theorists, that of the *military technical revolution*. The Soviets argued that during the 20th century there had been two periods of revolutionary change in military affairs: the emergence of the airplane, the submarine, and mechanized warfare during World War I; and the development of guided missiles, rudimentary computers, and nuclear weapons during World War II. During the mid-1980s, Soviet military thinkers suggested that another new era in warfare was looming, based on precision guided conventional ordnance, ubiquitous sensors, and stealth technologies. Some Western thinkers in strategy and military policy, such as Michael O'Hanlon of the Brookings Institution, picked up on the idea, packaged it with the reasonably well-established idea that there had been a "military revolution" in Early Modern European history, and gave us the RMA.¹⁶

14. A thoughtful work on information-age warfare is David S. Alberts, John J. Garstka, Richard E. Hayes, and David A. Signori, *Understanding Information Age Warfare* (Washington: Department of Defense Command and Control Research Program, 2001).

15. This is not to say that the proponents of 4GW and those of an RMA would agree on this point. Nevertheless, like fascism and communism, window dressing aside, there's a great deal of overlap between the two concepts. On this, see below, with regard to the "Vulnerability School."

The adherents of RMA view developments such as the introduction of gunpowder, the rise of mass armies, or the development of maneuver warfare as examples of revolutionary changes in the way war is conducted.

For a good working definition, consider

... an RMA occurs when technological change makes possible the introduction of new matériel that when combined with organizational and operational change, results in fundamental change in the conduct of warfare. What is important is not the speed with which a revolution takes place, but rather the magnitude of the change itself.¹⁷

We can summarize the principal elements of this RMA as:¹⁸

- Improvements in computers and electronics making possible major advances in weapons and warfare, such as the network-

16. On “*the military revolution*,” that is, the institutional, organizational, tactical, and technological innovations that gave rise to standing national armies and navies among the European states in early modern times, see Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800* (Cambridge: Cambridge University Press, 1996) and Clifford J. Rogers, ed. *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe* (Boulder, CO.: Westview Press, 1995), as well as Jeremy Black's *A Military Revolution? Military Change and European Society, 1500-1800* (London: Macmillan, 1991), which provides a contrarian voice, observing that the changes were as much “evolutionary” across the same period. For the modern concept, see, for example, Michael O'Hanlon, *Technological Change and the Future of Warfare: Understanding the RMA* (Washington: Brookings Institution, 2000), www.brookings.edu/press/books/future_of_warfare.htm.

17. Thomas J. Welch, “RMA: One Perspective,” *Strength Through Cooperation: Military Forces in the Asia-Pacific Region* (Washington: National Defense University Press, no date), <http://www.ndu.edu/inss/books/Books%20-%201997Strength%20Through%20Cooperation%201997/stcch6.html>, emphasis in the original.

18. Gary Chapman, “An Introduction to the RMA,” XV Amaldi Conference on Problems in Global Security, Helsinki, Sep 2003, pp. 3-8; O'Hanlon, pp. 2-3.

ing of information, communications, platforms, weapons, warriors, and more, to permit greater speed of decision-making

- Radically more capable sensors, making the battlefield “transparent”
- Platforms—whether land, sea, or air—becoming lighter, more fuel efficient, faster, and stealthier, and capable of very rapid deployment and enormous lethality
- Technologically different types of weaponry becoming available, such as space-based systems, directed energy weapons, and advanced biochemical agents.

In many ways, this RMA is essentially the operationalization of the notion of information-age warfare.¹⁹ There is, however, some debate about the precise nature of the RMA. O'Hanlon concludes that there are four schools of thought:²⁰

- System of Systems. The integration of all of warfighting capability, including Political, Military, Economic, Social, Information, and Infrastructure.
- Dominant Battlespace Dominance. Technology will make future battlefields transparent, thus favoring the most technologically sophisticated force.
- Global Reach, Global Power. Advanced technologies will enable us to destroy a target, or any combination of targets, with great precision anywhere, on short notice.²¹
- The Vulnerability School. Technologies that support the RMA will not be a monopoly on advanced nations, but will be lever-

19. William T. Johnsen, Douglas V. Johnson II, James O. Kievit, Douglas C. Lovelace, Jr., and Steven Metz, *The Principles of War in the 21st Century: Strategic Considerations*, Strategic Studies Institute, U.S. Army War College, Carlisle Barracks, PA, 1 Aug 1995, p. 1.

20. Per Chapman, pp. 7-10.

21. This is essentially a more radical version of the Dominant Battlespace Dominance school.

aged by less capable opponents, including non-traditional belligerents.

While the proponents of an imminent new RMA and those of 4GW are not the same, the Vulnerability School version of the RMA looks a great deal like 4GW.²²

Effects-based operations

The concept of effects-based operations (EBO) is rooted in the notion that societies are “systems of systems,” and that if we can understand the interrelationships among these systems, we may be able to focus our attention on attacking the nodes that offer the greatest possible payoffs in terms of collapsing the system. EBO is the Air Force's contribution to the RMA.²³ At its core it is a modern version of the traditional airman's view that “strategic bombardment” can bring swift victory by directly attacking critical nodes of the enemy's war-making capabilities, albeit enabled by advances in technology. The greater precision in modern weaponry, combined with the access enabled by stealth, along with the more rapid collection, integration, and dissemination of information and intelligence by modern data processing systems, permit strikes to be far more focused, thereby precisely striking the most critical nodes and yielding maximum potential effect. A recent Rand study defines EBO as operations

conceived and planned in a systems framework that considers the full range of direct, indirect, and cascading effects—effects that may, with different degrees of probability, be achieved by the application of military, diplomatic, psychological, and economic instruments.²⁴

22. With thanks to Chris Weuve for this observation, May 2006.

23. “Information Operations,” Air Force Doctrine Document 2-5, 11 Jan 2005, available online at http://www.dtic.mil/doctrine/jel/service_pubs/afdd2_5.pdf; “EBO: Application of New Concepts, Tactics, and Software Tools Support the Air Force Vision for EBO,” *AFRL Horizons* (Jun 2001), <http://www.afrlhorizons.com/Briefs/June01/IF00015.html>.

24. Paul Davis, *EBO: A Grand Challenge for the Analytical Community*, 2002 (Rand Report, MR-1477-USJFCOM/AF).

A critical factor in EBO is that we develop an understanding of what the nodes in a system are, how they are interconnected, and which are particularly critical, so that destroying them will lead to the collapse of the system by initiating "cascading" failure.²⁵

David A. Deptula, an Air Force general and strong proponent of EBO, argues that modern planners can take advantage of the extreme precision of current weapons, the unique capabilities of stealth technologies, and rapid communications and data transmission systems to develop highly adaptive attack plans designed to paralyze an enemy by striking multiple critical objectives simultaneously and with great accuracy, leading to "cascading failure" of his systems. In effect, we can "short circuit" the enemy's ability to make war, not so much for the purpose of destroying him but in pursuit of "the ultimate purpose of war—to compel a positive political outcome."²⁶

In the past, the technologies available to us limited our ability to achieve this "short circuiting." To interfere in the enemy's ability to make war, we had to engage the enemy's force directly with equivalent force. Because a "political entity can be thought of as a system consisting of a number of subsystems . . . a system of systems," EBO is thus the use of special technologies that permit us "to achieve specific effects against portions of a system that render the entire system ineffective."²⁷

25. Compare this to, "It appears that nations are susceptible to defeat by the interruption of their economic web. It is possible that the morale collapse brought about by the breaking of this closely knit web will be sufficient, but closely connected therewith is the industrial fabric which is absolutely essential for modern war," Maj. Gen. Harold George, Air Corps Tactical School, 1936, cited in R. Cargill Hall, ed., *Case Studies in Strategic Bombardment* (Washington: Air Force History and Museums Program, 1998), pp. 11-12, https://www.airforcehistory.hq.af.mil/Publications/fulltext/case_studies_strategic_bombardment.pdf

26. Summarized from David A. Deptula, *EBO: Change in the Nature of Warfare* (Arlington, VA.: Aerospace Education Foundation, 2001), pp. 2-5.

27. Deptula, pp. 5-6.

The argument for EBO essentially comes down to a matter of investing in precision weaponry and information gathering and processing capabilities that will enable us to fight wars at lower cost in blood and treasure, by being able to apply highly precise force against the enemy's most critical vulnerabilities. In many ways, EBO looks much like information-age warfare, with small numbers of highly trained specialists wielding ultra-precise weaponry against very critical targets. And although it is primarily concerned with conventional military operations—that is, kinetic strike against critical targets—EBO also fits well with the concept of 4GW. After all, an insurgent focuses his attacks on those vital nodes that are most likely to short circuit the enemy's will to continue.

Throw it all out?

One of the characteristics of many of the more extreme advocates of these supposedly revolutionary ideas about war is their argument that the lessons of the past no longer apply. Several military thinkers have adopted this notion. For example, in his book *The Transformation of War*, Martin van Creveld concludes that “the demise of conventional war will cause strategy in its traditional, Clausewitzian sense to disappear.”²⁸

Similarly, Robert R. Leonhard, in his book *The Principles of War for the Information Age*,²⁹ argues that we need a whole new set of principles of war, and that the proper way to use these principles is to treat them as guidelines to help develop our thinking on the military problems that we face.

Even military historian John Keegan argues that Clausewitz is wrong when he asserts that war is a rational pursuit, since “those who make war an end in itself are likely to be more successful than those who seek to moderate its character for political purposes,” adding that

28. Martin van Creveld, *The Transformation of War* (New York: The Free Press, 1991), p. 225.

29. Robert R. Leonhard, *The Principles of War for the Information Age* (Novato, CA.: Presidio Press, 1998).

“they must be fought by men whose values and skills are not those of politicians and diplomats.”³⁰ These comments call to mind similar statements made by some proponents of the RMA who argue that we can eliminate “the fog of war” and other “Clausewitzian” concepts.³¹

30. John Keegan, *A History of Warfare* (New York, Knopf, 1993), p. 56. See the critique in John Bassford, “John Keegan and the Grand Tradition of Trashing Clausewitz: A Polemic,” *War and History*, Vol. 1, no.3 (Nov 1994), <http://www.clausewitz.com/CWZHOME/Keegan/KEEGWHOL.htm>, consulted 1 Aug 2006.

31. Chapman, p. 5

A vision of war in the future

Although the details are unclear, proponents of all these various new ways of war have developed a general idea of how warfare will look in the future.

To begin with, the three traditional levels of war—strategic, operational, and tactical—will continue to exist. But they will be changed in various ways. What happens on the tactical level may have unprecedented effects strategically and operationally, and many actions will very likely have effects across all three levels.

Thus,³²

- At the strategic level, “... victories are accomplished through the superior use of all available networks to directly defeat the will of the enemy leaders.”
- Operationally, “campaigns must structure tactical events toward that goal.”
- “... the Fourth Generation gives us the 'strategic corporal.' Especially when video cameras are rolling, a single enlisted Marine may take an action that has strategic effect.”
- “... all three levels may be local. A Marine unit may have a 'beat,' much as police do—an area where they are responsible for maintaining order and perhaps delivering other vital services as well. The unit must harmonize its local, tactical actions with higher strategic and operational goals, both of which must be pursued consistently on the local level.”
- “...what succeeds on the tactical level can easily be counter productive at the operational and, especially, strategic levels.”

32. This is distilled from Lind, FMFM, pp. 5-6; and Hammes, *Sling and Stone*, pp. 208-21.

- “A Fourth Generation conflict will usually have many different independent power centers not only at the grand strategic level but down all the way to the tactical level. The game of connection and isolation will be central to tactics and operational art as well as to strategy and grand strategy. It will be important to ensure that what you are doing at the tactical level does not alienate independent power centers you need to connect with at the operational or strategic levels. Similarly, you will need to be careful not to isolate yourself today from independent power centers you will need to connect to tomorrow.”
- “Fourth Generation...is difficult to operationalize. Often, Fourth Generation opponents' strategic centers of gravity are intangible. ...Because operational art is the art of focusing tactical actions on enemy strategic centers of gravity, operational art becomes difficult or even impossible in such situations.”
- “...4GW wars will be long.”

It's also important to understand that in 4GW there are new “levels” to war. To strategy, operations, and tactics, the proponents of 4GW stress the need to distinguish the physical, the mental, and the moral levels. And,

This leads to the central dilemma of Fourth Generation war: what works for you on the physical (and sometimes mental) level often works against you at the moral level. It is therefore very easy in a Fourth Generation conflict to win all the tactical engagements yet lose the war. To the degree you win at the physical level by pouring on firepower that causes casualties and property damage to the local population, every physical victory may move you closer to moral defeat. And the moral level is decisive.³³

Having made a case that 4GW is something radical, the proponents of 4GW then fail to say what we can do about it. In fact, they seem to lose heart. Colonel Hammes believes that 4GWs are “the only kind of war America has ever lost,” implying that we will do so again.³⁴ Martin

33. Lind, FMFM, p. 6, emphasis in the original.

34. Hammes, *Sling & Stone*, p. 3.

Van Creveld goes further, expressing the view that a 4GW is essentially unwinnable by a conventional power. Referring specifically to the problems Israel has had in coping with the "Second Intifada," he said,

The problem is that you cannot prove yourself against someone who is much weaker than yourself. They are in a lose/lose situation. If you are strong and fighting the weak, then if you kill your opponent then you are a scoundrel. If you let him kill you, then you are an idiot. So here is a dilemma which others have suffered before us, and for which as far as I can see there is simply no escape.³⁵

We will return to this issue later.

35. Jennifer Byrne, "Interview with Martin van Creveld," ABC News, 20 Mar 2002, <http://www.abc.net.au/foreign/stories/s511530.htm>.

Critique

Ideas such as 4GW, information-age warfare, EBO, the RMA, and the like do have merit. But they also should not be oversold. There is no question but that the nature and conduct of war is changing. But then again, it always has. Some of the coming changes may be revolutionary. Most are more likely to prove to be evolutionary.

Revolution or evolution?

It's important to keep in mind that throughout history there have been many so-called revolutionary developments, asymmetric approaches, information operations, effects-based operations, non-traditional actors, and so forth. These are not phenomena restricted to recent decades. What is happening today is not necessarily that radical new ways of fighting wars are developing, but rather that certain traditional ways of making war are becoming more prominent than they were in the recent past.

Becoming more prominent does not mean that these "new" types of wars are becoming more common. Perhaps they are merely more noticeable.

Since the end of the Cold War, "major armed conflict," conventional state-on-state wars or major civil wars, have been declining precipitously. This decline in the frequency of conventional war makes non-state conflicts more noticeable. But non-state conflicts have also been declining.

Over the past 15 years or so, the annual number of "major armed conflicts" in progress somewhere in the world has fallen from about 32 a year during 1989-1991 to about 19 in 2004, all of which were

intra-state. During the same period, the number of smaller wars—the 4GWs—has also declined, from 43 to 19.³⁶

On the other hand, during the same period, the number of *peacekeeping* operations actually grew. From the end of World War II through the end of the Cold War in 1989, there had been only 24 multinational peacekeeping operations, whereas in 2004 there were 56 multinational peace missions.³⁷

Perhaps peace operations by members of the international community are actually another type of war. Certainly international peace enforcement operations seem virtually indistinguishable from war.³⁸ Internationally sanctioned peace operations in the Democratic Republic of Congo (1960–1964 and 2000–present), as well as in Bosnia (1995–2002), Sierra Leone (1999–2005), Kosovo (1999–present), and East Timor (1999–2002), among others, often involved

36. A “major armed conflict” involves the use of “armed force between the military forces of two or more governments, or of one government and at least one organized armed group, resulting in the battle-related deaths of at least 1,000 people in any single calendar year and in which the incompatibility concerns control of government and/or territory.” Renata Dwan and Caroline Holmqvist, “Patterns of Major Armed Conflicts,” Stockholm International Peace Research Institute (SIPRI), http://www.sipri.org/contents/conflict/MAC_patterns.html; see also, *SIPRI Yearbook 2003 Armaments, Disarmament and International Security* (Oxford University Press: Oxford, 2004), pp. 110–20, 127–41, and *SIPRI Yearbook 2004* (Oxford University Press: Oxford, 2005), pp. 134ff, 166–76; *SIPRI Yearbook 2005* (Oxford University Press: Oxford, 2005), pp. 121ff. Note that there is always uncertainty over how many “wars” there are in progress at any particular time, whether “major” or otherwise, given problems of definition.

37. Figures for peacekeeping operations include those conducted by regional organizations as well as the U.N. For numbers, see *SIPRI Yearbook 2004*, pp. 139ff. Some of the missions are small, consisting of just a handful of observers.

38. Peacekeeping operations fall under the provisions of Chapter VI of the U.N. Charter, “peace enforcement” operations are authorized under Chapter VII; for what is probably the most thoughtful analysis of the development of peace operations, see *Peace Operations: Between War and Peace*, ed. Erwin A. Schmidl (London: Frank Cass, 2000).

combat, sometimes on a relatively large scale, and of late have resulted in what can only be described as “military occupation” by international forces.³⁹ Regarding the Bosnia operation, one observer has noted that “the presence of large numbers of foreign troops, an international war crimes process, and summary dismissal of Bosnian politicians by an international administrator... bore more than a passing resemblance to occupied Germany in 1945–1949.”⁴⁰

Let's consider some of these “revolutionary” concepts.

Some historical revolutions in military affairs

There certainly have been various revolutions in military affairs down through the ages. But many of the advocates of the imminence of a new RMA have tended to stress the technological side. This is perhaps a matter of historical myopia, since the RMAs most frequently cited in the literature involve technologies that have inspired innovative organizational and operational concepts, such as “*Blitzkrieg*” or carrier operations. Nevertheless, despite the pundits, RMAs are not necessarily about technology.⁴¹ Indeed, they are at least as much about the cultural, social, political, historical, and economic environment within which they occur as they are about new technology. Moreover,

39. While most of these operations are too recent to have received serious historical examination, some good work has been done on the Congo operation; Ernest W. Lefever, *Uncertain Mandate: Politics of the U.N. Congo Operation* (Baltimore: Johns Hopkins University Press, 1967) provides a very good analysis of the complexities of the Congo mission, while Georges Abi-Saab, *The United Nations Operation in the Congo, 1960-1964* (New York: Oxford University Press, 1978) provides an operational treatment. For the more recent operations, see the brief official accounts on the U.N. Peacekeeping website, <http://www.un.org/Depts/dpko/dpko/index.asp>, and the entries at GlobalSecurity.com for “Former Yugoslavia and Kosovo,” <http://www.globalsecurity.org/military/ops/yugo-ops.htm>.

40. Simon Chesterman, “Occupation as Liberation: International Law and Regime Change,” *Ethics of International Law*, 2004 (Vol. 18, No. 3), pp. 51–2. For a discussion of the applicability of the law of war to peace operations sanctioned by the international community; see the full article, pp. 51–64.

they are not always easy to understand or to identify.⁴² Think about the Romans; what innovations turned their armies into unstoppable world conquerors for some seven centuries during the great age of the Republic and the Empire (c. 390 B.C–A.D. 200)?

The Romans

Despite their reputation as a great warrior people and their centuries of military supremacy, the Romans were not notable innovators in military technology. The Romans borrowed much of their military hardware from their enemies. Even casual readers of military history have become familiar with the standard kit of the Roman soldier: the cheeked helmet, chain mail, flexible breast plate, short sword, rectangular shield, and heavy javelin. All of these were borrowed from Rome's enemies: the helmet, chain mail, and breastplate from the Gauls; the sword from the Celtiberians; the shield from the Samnites; and the javelin from other Italiote peoples. Apparently even the Roman practice of erecting entrenched camps each night while on the march may have been borrowed from Pyrrhus of Epirus.⁴³

41. In *The Future of War: Organizations as Weapons* (Washington: Potomac Books, 2005), Mark D. Mandeles criticizes the overstress on technology that characterizes many of the advocates of an RMA (pp. 1ff), before going on to discuss the far more important organizational aspects of successful RMAs.

42. For a discussion of this see Andrew N. Liaropoulos, "Revolution in Warfare: Theoretical Paradigms and Historical Evidence—The Napoleonic and First World War Revolutions in Military Affairs," *Journal of Military History*, vol. 70, no. 2 (Apr 2006), pp. 363–84; Williamson Murray, "May 1940: The Contingency and Fragility of the German RMA," in *The Dynamics of Military Revolution, 1300-2050*, MacGregor Knox and Williamson Murray, eds. (New York: Cambridge University Press, 2001), pp. 175–193. Proponents of the RMA often rely on superficial historical treatments; when they provide documentation (and often they do not), one frequently finds references to other works in the RMA canon, or to general references such as R. Ernest & Trevor N. Dupuy, *The Harper Encyclopedia of Military History: From 3500 BC to the Present* (New York: HarperCollins, 1993).

43. Thus, Livy, 35.14, citing Hannibal.

The innovations that most clearly distinguished the Romans from their enemies lay in their military policy, rooted in a universal service obligation by all male citizens, and their skill at organization and tactics, which they continuously refined, modifying their techniques and equipment to suit the enemy, and adopting the "best practices" and technologies of their foes. Thus, when speaking about "the Roman Army" one has to be very specific about the period. The Roman Army periodically underwent a series of significant changes, from the original primitive tribal levy through a hoplite array that led to a phalanx-like formation, which became the manipular legion, which was followed by the introduction of the cohort-based legion, which matured in the final generations of the Republic into the Marian legion. This evolution continued under the Empire, as the legion underwent several more somewhat less dramatic reorganizations over the next couple of centuries. These changes can be dated with considerable accuracy.

So efficient were Roman organization and tactics, that their enemies often adopted them; Hannibal, Jugurtha, Mithradates, Spartacus, and Tacfarinas all organized their armies into legions armed, equipped, and trained on the Roman model.⁴⁴

The real key to Roman success was their systematic approach to evaluating the effectiveness of their army and implementing necessary changes. In essence, the Roman RMA was their development of an analytical process. We can catch occasional glimpses of this process in

44. For the periodic changes to the Roman Army through the early empire, see T. J. Cornell, *The Beginnings of Rome: Italy and Rome from the Bronze Age to the Punic Wars, c. 100-264 B.C.* (London/New York: Routledge, 1995), pp. 179-94; Peter A. Brunt, *Italian Manpower, 225 BC-AD 14* (London: Oxford, 1971); Martin P. Nilson, "The Introduction of Hoplite Tactics at Rome," *Journal of Roman Studies*, vol. 19 (1921), pp. 1-11; K.W. Meiklejohn, "Roman Strategy and Tactics, from 509 to 202 B.C.," *Greece & Rome*, vol. 7, no. 21 (May 1938), pp. 170-78, and vol. 8, no. 22 (Oct 1938), pp. 8-19; F. E. Adcock, *The Roman Art of War Under the Republic* (Cambridge, MA.: Harvard, 1940); Emilio Gabba, *Republican Rome: the Army & the Allies* (Berkeley: University of California Press, 1976.); Lawrence Keppie, *The Making of the Roman Army* (New York: Barnes & Noble, 1994).

action, as in the story of the creation of the Roman Navy, during the First Punic War (264-241 B.C.).⁴⁵

While Rome was the preeminent land power of the age, Carthage was the supreme maritime power.⁴⁶ Moreover, the sea, which prevented the Romans from attacking Carthage, in North Africa, permitted the Carthaginians to ravage the coasts of Italy. So, in the words of Polybius, the Romans "became eager to get upon the sea and meet the Carthaginians there." To accomplish this, the Romans had to build a navy.

The Romans had little maritime experience.⁴⁷ So they decided to copy the design of a Carthaginian ship (a *quinquereme*, with 90 oars to a side, arranged in three tiers of oars, the top two of which were worked by two men each and the bottom by one man) that had run aground and been captured. The Romans began building 120 warships on this model. In addition, since they had few experienced oarsmen, they began training about 44,000 men as rowers, on land, by erecting mockups of ships' interiors, complete with benches and oars; certainly the earliest use of training simulators in recorded history. By the time the ships were beginning to enter service, the oarsmen were sufficiently trained to be able to take them to sea for more training.

45. On the war, see J. F. Lazenby, *The First Punic War: A Military History* (Stanford: Stanford University Press, 1996). On the naval tactics of the age, see John Ledyard Rogers, *Greek and Roman Naval Warfare; A Study of Strategy, Tactics, and Ship Design from Salamis to Actium* (Annapolis: Naval Institute Press, 1964) and Lionel Casson, *The Ancient Mariners* (New York: Macmillan, 1959), pp. 81-115. On the Roman fleet in the period, see J. H. Thiel, *A History of Roman Sea-Power before the Second Punic War* (Amsterdam: North Holland Publishing, 1954) and W. W. Tarn, "The Fleets of the First Punic War," *The Journal of Hellenic Studies*, vol. 27 (1907), pp. 48-60.

46. This discussion is based on the evidence of Polybius, 1.20-23, and the analyses of various aspects of the problem of building and manning the fleet in Tarn and in Rogers, pp. 270-303, plus the observations in Lazenby, *First Punic War*, pp. 62-65.

47. Rome did have a navy, but only of 20 light warships, which were primarily used for coastal patrol to prevent piracy. Even in peace Carthage maintained no less than 130 warships. See Tarn, p. 49.

Meanwhile, the Romans also realized that merely having lots of ships and oarsmen would not be sufficient to defeat Carthage. The Carthaginians had generations of experience in naval warfare, and their sailors were masters of the complex maneuvers required for the ramming tactics in use at the time, "a most delicate maneuver" requiring "a skilled crew and a commander of fine judgment and keen sense of timing."⁴⁸ Since there was no way the Romans could quickly overcome their lack of experience in conventional naval tactics, they developed "asymmetric" tactics. Rather than fight battles of maneuver and ramming, they turned sea battles into "land" battles, by inventing the *corvus*, a form of boarding platform—or perhaps an innovative type of grapnel—that could be dropped on enemy ships and over which Roman infantry could then storm. In a boarding contest, the superior Roman troops were most likely to win.⁴⁹

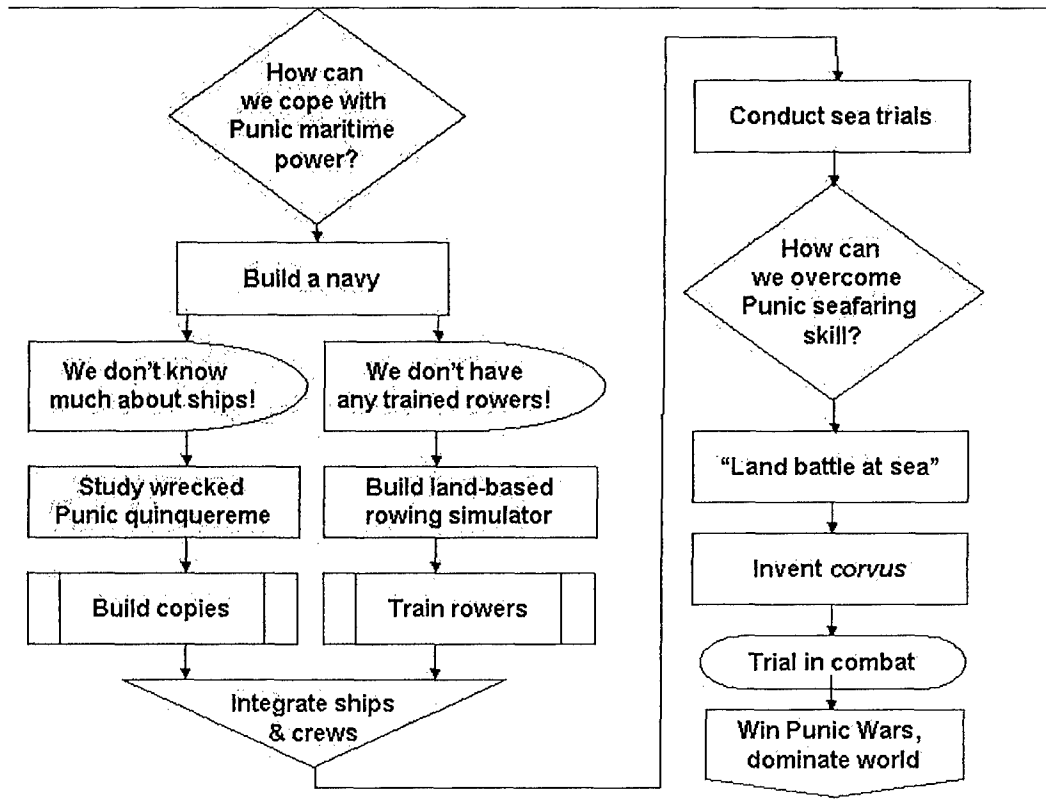
Thus prepared, the Romans went to sea. They lost their first battle. So they reassessed what they had done wrong, made some changes, and went back to sea again. They didn't lose very often after that. And as time passed, they became skilled in the conventional naval tactics of maneuver and ramming.

48. Casson, p. 100.

49. The exact nature of the *corvus* is uncertain. Aside from permitting the Romans to turn sea battles into land battles, another advantage of the *corvus*, was that it led to the capture of enemy ships, rather than their sinking. Thus, each time the Romans won a sea battle, they were able to make good their losses and even enlarge their fleet. During the Battle of Mylae (260 B.C.), their first victory at sea in the war, the Romans, who had about 140 ships, lost perhaps 10 to the Carthaginians, captured or sunk. But they themselves managed to sink about 19 of the enemy's ships and capture about 30 more. Of these, perhaps 20 were put into service. Thus the Romans realized a net increase to their fleet of about double the number of vessels that they had lost; see Tarn, p. 51. Despite the advantages the *corvus* brought them, as they gained experience in seamanship the Romans quickly abandoned it in favor of the ram. Its use seems to have made ships somewhat unstable, which may account for very serious Roman losses to the hazards of the sea during the First Punic War. See H. T. Wallinga, *The Boarding-Bridge of the Romans* (The Hague: Nijhoff/London: Batsford, 1956), and Tarn, p. 51, note 19, for some interesting observations.

In short, the Romans did the analysis and applied the results. The analytical process that the Romans used in this and other instances was certainly revolutionary. Figure 1 shows how we can illustrate this process graphically.

Figure 1. The Roman analytical process



This analytic process was certainly revolutionary, and helped sustain Roman military power for centuries. But it was hardly technological. So precisely what constitutes a "revolution" in military affairs is not necessarily easy to determine. And at times, what appears to be an RMA may actually be more the result of a very long evolutionary process. Consider the "Gunpowder Revolution."

The Gunpowder Revolution

Certainly gunpowder led to significant changes in the conduct of war. But how revolutionary were they?

Gunpowder first entered European armories in the early 14th century.⁵⁰ But it had little more than a novelty effect on warfare for many years.

During the middle decades of the 14th-century, cannon had come to be of great value in sieges. At first the power of the guns was limited to battering down the gates of castles; by the century's end the heavy bombards were capable of smashing down walls as well. This process of technical evolution initiated a Darwinian contest between gun makers and fortification engineers that endured into the 20th century.⁵¹

But the use of gunpowder on the battlefield itself (rather than in sieges) only became important at the end of the 15th century, with Gonzalvo de Cordoba's campaigns in Italy (1494-1505). Over the following generation or so gunpowder weapons had developed sufficiently to spark an era of "gunpowder empires." The Portuguese in Africa and the Indian Ocean, the Spanish in Mexico and Peru, the Muscovites in Russia, the Ottoman Turks in the Middle East, the Safavids in Persia, the Mughals in Central Asia and India, and the Saadi

50. For some works that touch on the early history of gunpowder, an extremely obscure subject, see Wayne Cocroft, *Dangerous Energy: The Archaeology of Gunpowder and Military Explosives Manufacture* (London: Swindon, 2000); Jack Kelly, *Gunpowder: Alchemy, Bombards, and Pyrotechnics, the History of the Explosive that Changed the World* (New York: Basic Books, 2004); Donald J. Kagay and L. J. Andrew Villalon, eds. *Crusaders, Condottieri, and Cannon: Medieval Warfare in Societies Around the Mediterranean* (Leiden/Boston: Brill, 2003); Stephen Turnbull, *The Art of Renaissance Warfare: From the Fall of Constantinople to the Thirty Years' War* (London: Greenhill, 2006); Ivy A. Corfis and Michael Wolfe, eds. *The Medieval City Under Siege* (Woodbridge, Suffolk/Rochester, NY: Boydell Press, 1995); Jim Bradbury, *The Medieval Siege* (Woodbridge, Suffolk/Rochester, NY: Boydell Press, 1992).

51. The best short treatment of the history of fortifications and sieges through the early 20th century remains "Fortification and Siegecraft," *Encyclopaedia Britannica*, Eleventh Edition (1911).

Moroccans in the Sahel, all used the firearms of their day, in combination with more traditional arms, against foes lacking gunpowder to create extensive empires.⁵²

Despite this, gunpowder weapons did not become the sole arbiter on the battlefield until the mid-18th century. This slow process was the result of the need to develop various technologies, techniques, and tactics, coupled with the difficulty of procuring materials and very high production costs.

Edged weapons—swords, lances, battleaxes, pikes—still competed with firearms for dominance on the battlefield during the Thirty Years War (1618-1648). Particularly important and ubiquitous was the pike, which existed in a kind of symbiosis with the musket.

Musketeers were most effective when deployed in relatively thin formations that allowed them to develop the maximum amount of firepower. But such thin lines of only four to eight ranks could be vulnerable to swift and overwhelming attack by sword-armed cavalry. Pikemen, on the other hand, deployed in very deep blocks, while

52. The first known appearance of cannon on a European battlefield was at Crécy (1346), with no reported effects. At the Battle of Castagnaro (1387), the Condottiero John Hawkwood secured what was probably the first victory on the battlefield using cannon, firing from a fixed defensive position. At Agincourt (1415), the French bombards that opened the battle apparently killed only one Englishman before his countrymen won the battle. During the Hussite Wars (1420-1437), gunpowder small arms began to be used in field defenses with good effect. Nevertheless, it was not until Gonzalvo de Cordoba's campaigns in Italy that gunpowder small arms had developed sufficiently to have a decisive effect offensively as well as defensively, and even then the crossbow remained competitive for a decade or more. See, Andrew Ayton and Philip Preston, *The Battle of Crécy, 1346* (Woodbridge, Suffolk: Boydell Press, 2005); Mario Tabanelli, *Giovanni Acuto, Capitano di Ventura* (Faenza: Stab. grafico F.lli Lega, 1975); Juliet Barker, *Agincourt: The King, the Campaign, the Battle* (London: Little, Brown, 2005); F. M. Bartos, *The Hussite Revolution, 1424-1437* (Boulder: East European Monographs/New York: Columbia University Press, 1986); Bert S. Hall, *Weapons and Warfare in Renaissance Europe: Gunpowder, Technology, and Tactics* (Baltimore: Johns Hopkins University Press, 1997); Antonio L. Martín Gómez, *El Gran capitán: las campañas del Duque de Terranova y Santángelo* (Madrid: Almena, 2000).

taking advantage of their long spears to present a bristling wall of iron to intimidate (or skewer) the cavalry if they got too close. As a result, cavalry often tried to engage pike blocks with their relatively short-range pistols. Joining the musketeers and the pikeman together in mixed formations was a prime example of combined-arms tactics: the musketeers could keep the cavalry out of pistol range of the pikes, while the pikes could provide shelter to the slow-firing musketeers from the sword-wielding cavalry.

Although their role on the battlefield gradually declined over the next century, it was not until the Seven Years War (1756-1763) that edged weapons were completely eclipsed as infantry arms on the battlefield. The technological innovations that made the infantry musket supreme on the battlefield—the wheellock, the bayonet (which enabled the musketeer to also serve as a pikeman), the flintlock, the iron ramrod, and mechanical production, coupled with the discovery of cheap sources of nitrates (which radically reduced the cost of manufacturing gunpowder)—took more than a century to develop.⁵³

The Gunpowder RMA only appears revolutionary if we compare warfare in the early 14th century with warfare in the mid-18th, skipping the intervening generations of fairly slow evolution. As one historian of technology put it, “We must bear in mind that it took centuries for firearms to move from the periphery of the battlefield to the core.”⁵⁴

53. See, John Childs, *Warfare in the Seventeenth Century* (London: Cassell, 2001); Jeremy Black, *Warfare in the Eighteenth Century* (London: Cassell, 1999); David Chandler, *The Art of Warfare in the Age of Marlborough* (London: Batsford, 1976); Gunther E. Rothenberg, *The Art of Warfare in the Age of Napoleon* (London: Batsford, 1977). And even after the gun (albeit still provided with a bayonet) had come to be the sole arm of the infantry, the sword and lance continued as the principal weapons of the cavalry for over a century more, until the advent of magazine firearms.

54. George and Meredith Friedman, *The Future of War: Power, Technology, and American World Dominance in the 21st Century* (New York: Crown, 1996), p. xii.

Some other real RMAs

Of course, there have been truly revolutionary advances in military affairs. There is substance to the basic concept that RMAs exist.⁵⁵ Think about the Romans, as we discussed them earlier. Other more recent notable examples include:

Late 17th century: The Western Army. During the reign of Louis XIV (1643-1715), France developed the governmental institutions that permitted the creation of the first large standing army in Europe since the fall of Rome. This was essentially an organizational revolution. Neither technology nor tactics differentiated the French Army from any other army of the day, but the bureaucratic establishment that France created allowed it to become the dominant military power in Europe for two centuries.⁵⁶

Late-18th century: The Mass Army. In mid-1793, Revolutionary France adopted the *levee en masse*, which essentially conscripted every Frenchman. Prior to this, although normally raised by conscription, European armies could often be large, but were not enormous, since few states could afford the great cost of maintaining large professional forces. By requiring military service of everyone, the French Republic

55. For some good discussions of the concept, rooted in serious historical analysis, see particularly MacGregor Knox and Williamson Murray, "Thinking About Revolutions in Warfare," in Knox and Murray, pp. 1-14; and James R. FitzSimonds and Jan M. Van Tol, "Revolutions in Military Affairs," *Joint Force Quarterly* (Spring 1994), pp. 24-31. See also Gary Chapman, "An Introduction to the RMA," XV Amaldi Conference on Problems in Global Security, Helsinki, Finland, Sep 2003, which is focused on factors shaping recent trends in warfare.

56. See John A. Lynn, "Creating the Western Army in Seventeenth Century France," in Knox and Murray, pp. 35-56; John A. Lynn, *Giant of the Grand Siecle: The French Army, 1610-1715* (New York: Cambridge University Press, 1997); David Parrott, *Richelieu's Army: War, Government, and Society in France, 1624-1642* (New York: Cambridge University Press, 2001); Guy Rowland, *The Dynastic State and the Army under Louis XIV: Royal Service and Private Interest, 1661-1701* (New York: Cambridge University Press, 2002).

introduced the mass army, tapping into the revolutionary fervor of a people fighting for their national interests.⁵⁷

Given France's enormous population relative to the rest of Europe—only Russia was larger—it meant that France began putting a lot more troops into uniform than anyone else; their armies didn't necessarily fight any better than those of their opponents, but the troops were highly motivated and willing to take a lot more casualties, which often provided the margin of victory. This led to the great triumphs of the Revolutionary and Napoleonic Wars, as well as to the ultimate defeat of France, as her enemies adopted similar measures.

The French mass mobilization was aided by the fact, not initially noticed by their enemies, that the beginnings of the industrial revolution and the introduction of New World food crops such as maize and potatoes, had greatly reduced the manpower required to produce the weapons and foodstuffs needed to arm and sustain vast armies, which could in any case live off the land, at least in most of western and central Europe, where a surplus of food had become commonplace. By the 20th century the long-term trends behind the success of the *levee en masse* would give rise to the *millionenheer* of the world wars.

Mid-19th century: The Ironclad Revolution. In 1858 the backbone of the Royal Navy consisted of 80 wooden, mostly sail-driven ships-of-the-line armed with muzzle-loading cannon firing solid shot, technologies but little changed in nearly three centuries. Nevertheless, by 1870 the backbone of the British fleet consisted of 36 steam-driven iron-clad battleships equipped with rifled cannon firing explosive shell. Accounts of the introduction of the ironclad warship focus almost entirely on technology, with a little attention to tactics, and almost totally overlook the radical changes the new technology imposed on everything from recruiting and training to infrastructure, organiza-

57. MacGregor Knox, "Mass Politics and Nationalism as Military Revolution: The French Revolution and After," in Knox and Murray, pp. 57–73; Daniel Moran and Arthur Waldron, eds., *The People in Arms: Military Myth and National Mobilization since the French Revolution* (New York: Cambridge University Press, 2003); Liapopoulos, p. 374.

tion, strategy, and even fundamental national policy.⁵⁸ These developments had extraordinary effects on the navy's tradition, culture, experience, requirements, infrastructure, organization, tactics, and strategy, and even affected national policy at the highest levels.⁵⁹

Mid-19th century: The Prussian Military Reform. As in the case of France in the 17th century, the Prussian military reform was largely an administrative and organizational innovation rather than a technological one.⁶⁰ At its core was the creation of the general staff system, perhaps the most important military innovation of the 19th century, as well as the formation of a comprehensive reserve system, and the institution of periodic maneuvers and staff rides. The only technologically related innovation was itself organizational, the establishment of a railroad section in the new general staff.

58. On this, although old, James Phinney Baxter's *The Introduction of the Ironclad Warship* (Cambridge, MA: Harvard University Press, 1933) remains valuable. See also, Andrew Lambert, ed., *Steam, Steel & Shellfire: The Steam Warship, 1815-1905* (London: Conway Maritime Press, 1992); John Beeler, *Birth of the Battleship: British Capital Ship Design, 1870-1881* (Annapolis: Naval Institute Press, 2001). For the effects of the introduction of ironclads on British foreign policy, see Robert Greenhalgh Albion, *Forests and Sea Power: The Timber Problem of the Royal Navy, 1652-1862* (Cambridge, MA: Harvard University Press, 1926). The only work that deals with the effects of the ironclad warship on existing infrastructure appears to be David Evans, *Building the Steam Navy: Dockyards, Technology, and the Creation of the Victorian Battle Fleet, 1830-1906* (London: Conway Maritime Press/Annapolis: Naval Institute Press, 2004).

59. Other major navies experienced similar transformations: France went from c. 50 ships-of-the-line in 1858 to 16 ironclads by 1870 and Russia from c. 42 liners in 1854 to 14 ironclads by 1870. Note also how the rising costs of the new technology reduced the number of capital ships in each fleet; on this phenomenon, see particularly Philip Pugh, *The Cost of Sea Power: The Influence of Money on Naval Affairs from 1815 to The Present Day* (London: Conway Maritime Press, 1986), which discusses how rising absolute costs have generally led to smaller, albeit more effective, forces.

60. Dennis E. Showalter, "The Prussian-German RMA, 1840-1871," in Knox and Murray, pp. 92-113; Arden Bucholz, *Moltke and the German Wars* (New York: Macmillan, 2001).

The trouble with RMAs

Identifying when an RMA occurs—or even if one has occurred—can be tricky. For example, two of the cases cited here could easily be described as evolutionary rather than revolutionary: the French adoption of the *levee en masse* in 1793 and the Prussian development of the general staff. A case could be made that these were both evolutionary refinements of the Western Army as created by Louis XIV and his minions during the 17th century, rather than unique radical innovations in their own right.⁶¹ And one could even argue that Louis XIV's creation of the modern bureaucratic army was actually just another step in a long string of changes that began in the around the turn of the 16th century with the formation of the first standing armies in modern Europe, as part of what some historians term “the military revolution.”⁶²

To explore further this problem of knowing when—or if—a military revolution has occurred, let's examine the concept known as maneuver warfare, or *blitzkrieg*.

Blitzkrieg: revolution or evolution?

Many military experts would argue that the current concept we have come to know as maneuver warfare originates in the German operational practice known as *blitzkrieg*, or *lightning war*. *Blitzkrieg* is arguably among the most spectacular military innovations of the 20th century, along with the introduction of the airplane and of nuclear weapons.

We usually credit the German Army with inventing *blitzkrieg* warfare during the 1920s and 1930s, in reaction to the slaughter of World War I. But a deeper look at the development of the military art suggests that the real RMA of the 20th century occurred *during* the Great War.

61. Robert M. Epstein, “Patterns of Change and Continuity in Nineteenth Century Warfare,” *Journal of Military History*, vol. 56, no. 3 (Jul 1992), pp. 375–88; Mandeles, pp. 4ff.

62. As noted earlier, see Parker, *The Military Revolution*; Rogers, *The Military Revolution Debate*; Black, *A Military Revolution?*.

The standard image of World War I is that of "The Donkeys"—generals who hadn't a clue about the implications of modern technologies, sending men to their deaths by the millions in an orgy of attrition that only ended with the collapse of the weaker side.⁶³ This is an interpretation that developed in the immediate aftermath of the war, partially for political reasons, and by mid-century had become standardized in much of the literature. But how true is it?

In fact, most armies had begun to become concerned about technological developments such as rapid fire weapons, fast communications, and so forth, long before World War I. In all the developed countries, this had sparked lively debate in the military literature about what constituted appropriate organization and tactics, a debate that continued right through the war.⁶⁴

But the problem confronting armies during World War I was not one of organization and tactics, nor of technology. What happened during World War I was not so much that *technology* had outstripped war-making skills as that *numbers of troops* had outstripped both war-making skills and *geography*. More important than the effects of new weapons such as machine guns, quick firing artillery, and barbed wire, or of the new rapid means of communication such as railroads, radio, and telephone, was that armies had physically grown enormously large, and literally ran out of maneuvering room.

At the outbreak of the war in 1914, Europe's population was about four times what it had been a century earlier. But in 1914, the number of men under arms *even before full mobilization* was about eight times

63. For samples of the tradition views, see Alan Clark, *The Donkeys*. (London: Hutchinson, 1961); and Leon Wolf, *In Flanders Field: The 1917 Campaign*. (New York: Ballantine Books, 1960).

64. Jean de Bloch, *The Future of War*, trans. by R. C. Long (reprint of 1899 edition; New York: Garland, 1972). Also see Mandeles, pp. 46–53, as well as H.G. Wells' short story "The Land Ironclads" (1903) and his novel *The War in the Air* (1908); Perry D. Jamieson, *Crossing the Deadly Ground: United States Army Tactics, 1865-1899* (Tuscaloosa: University of Alabama Press, 1994); Antulio J. Echevarria II, *After Clausewitz: German Military Thinkers before the Great War* (Lawrence, KS: University Press of Kansas, 2001).

more than what the European powers could field at the peak of the Napoleonic Wars. This was a direct result of the industrial revolution, which permitted massive numbers of men to be removed from farm and factory without affecting the production of arms and food and their supply to the troops.

In 1914 all the armies expected that there would be a war of maneuver. And they were right, for the first two or three months. But on the Western Front, soon after the armies began to move, they began to run out of room in which to maneuver.⁶⁵ Were casualty rates in battle higher during World War I than during the Napoleonic War or even earlier conflicts? Not really—at least not in terms of casualties *per day of battle*. Rather, the number of days of serious combat became more numerous. The seemingly horrendous casualty lists of the First World War were actually not dissimilar from those of earlier times, adjusting for the number of troops involved and the number of days in battle.

Battles were rarer prior to the Industrial Revolution because the means of production were slow and required considerable manpower, and both troops and munitions could only move at a walk. It took a long time and a lot of money to accumulate sufficient munitions, equipment, and troops to field an army. Yet a single battle could consume those munitions, equipment, and troops in enormous quantities. This resulted in great caution regarding committing armies to battle. The preferred mode of warfare involved the careful maneuvering of forces in a chess-like game of check and checkmate. By skilled maneuver, one could force the enemy to either accept

65. It's important to realize that our image of World War I has been largely shaped by the events on the Western Front, where trench warfare began in the autumn of 1914 and continued into the spring of 1918. On the other major front, Russia, maneuver warfare remained the norm for much of the conflict, as the geographic density of troops was much lower than in the west. See, for example, Norman Stone, *The Eastern Front, 1914-1917* (New York: Penguin, 1998), and Ward Rutherford, *The Tsar's War, 1914-1917: The Story of the Imperial Russian Army in the First World War* (Cambridge: I. Faulkner, 1992); Dennis Showalter, "Maneuver Warfare: The Eastern and Western Fronts, 1914-1915," *The Oxford Illustrated History of the First World War*, Hew Strachen, ed. (Oxford: Oxford University Press, 1998), pp. 39-53.

battle on unfavorable terms, or retire, abandoning his objectives or his strong points.

Many of the most notable battles of the period were the result of careful maneuvers that forced one side to stand and fight on unfavorable terms. One of the bloodiest battles of the pre-Napoleonic era was fought at Malplaquet on 11 September 1709. This battle resulted from a series brilliant of maneuvers by the French army, which threatened to force a large Anglo-Habsburg army to abandon the siege of Mons. To avoid this strategic defeat, the Allied army chose to attack the French in a strong and fortified position. Washington's series of victories during the Trenton Campaign (December 1776-January 1777) resulted from a similar series of maneuvers.

In each of these cases, the maneuvering army set up a battle—or series of battles—that furthered its strategic goals. Although the French lost heavily at Malplaquet, they forced the Allies to lift the siege of Mons, and thus forestalled an enemy advance on Paris. Washington's maneuvers cleared the much stronger British from most of New Jersey at virtually no loss to the Americans, while providing a desperately needed morale boost to the Patriot cause.

Once the armies clashed, however, casualties could be horrendous. We can see this if we compare the casualties at Verdun in 1916, the archetypical attrition battle of the Great War, with those in some earlier battles. While casualty figures are always subject to some uncertainty, at Verdun the French lost 165,000 dead, and Germany somewhat over 100,000. Including the wounded, combined casualties for both sides seem to have run about million or so, in a “battle” that lasted 302 days (21 February–19 December) and involved, over that period, perhaps five million men, both sides together (though there is probably some double counting of troops involved). So the overall casualty rate was about 20 percent. In some major single-day battles in earlier times this casualty rate was readily exceeded. The allied British and Imperial Habsburg forces at Malplaquet lost some 6,500 killed and about 14,000 wounded out of 90,000 engaged, and the victorious French some 4,500 killed and 8,000 wounded out of about 80,000, for an overall casualty rate of over 19 percent. At Borodino (7 September 1812) the French suffered at least 35,000 casualties out of

135,000 committed, and the Russians perhaps 45,000 out of 120,000, for an overall casualty rate of about 31 percent.⁶⁶ And in some smaller battles before the 20th century the rate of casualties could easily run higher than it did in these.⁶⁷

Throughout World War I both sides kept innovating at a remarkable rate, not only in terms of technologies, but also in organization, tactics, operational art, and strategy.⁶⁸ But the real issue that they wrestled with for the entire war was that of restoring mobility to a battlefield jammed with troops. The Germans developed innovative infantry-artillery tactics, combining infiltration with intense firepower, that led to spectacular victories over Romania in 1916, Italy in 1917, and the Allies in the spring of 1918, very nearly winning the war

66. Probably the heaviest losses ever in a large one-day battle occurred at Cannae (2 August 216 B.C.), where the Romans lost 30,000-40,000 men killed, perhaps two-thirds of the troops they brought to the field, while Carthaginian dead numbered perhaps 10,000, about 20 percent of their force, with both sides suffering more men slain than wounded, all without benefit of modern technology; see J. F. Lazenby, *Hannibal's War: A Military History of the Second Punic War* (Norman, OK: University of Oklahoma Press, 1998), pp. 57ff; Peter A. Brunt, *Italian manpower 225 B.C.-A.D. 14* (Oxford: Clarendon Press, 1971), p. 419, with n. 4.

67. Some examples: St. Foy (28 Apr 1760), c. 5,000 French troops suffered c. 835 casualties, nearly 17 percent, defeating c. 3,800 British troops, who took c. 1,125 casualties, nearly 30 percent; Bunker Hill (17 July 1775), c. 1,500 British troops suffered c. 440 casualties, nearly 30 percent; c. 2,600 Americans lost c. 1,050 killed or wounded, c. 40 percent; Lundy's Lane (25 July 1813), c. 4,000 Americans lost c. 878, killed, wounded, or missing, roughly 22 percent, defeating c. 3,000 British troops, who lost c. 860, nearly 29 percent.

68. See, for example, Liaropoulos, pp. 377-82; Jonathan B. A. Bailey, "The First World War and the Birth of Modern Warfare," in Knox and Murray, pp. 154-74; Robert T. Foley, *German Strategy and the Path to Verdun* (New York: Cambridge University Press, 2005); Hubert C. Johnson, *Breakthrough: Tactics, Technology and the Search for Victory on the Western Front in World War I* (New York: Random House, 1994); Bruce I. Gudmundsson and William Hyland, *Stormtroop Tactics: Innovation in the German Army, 1914-1918* (Westport, CT: Greenwood Press, 1995); Paddy Griffith, *Battle Tactics of the Western Front: The British Army's Art of Attack, 1916-1918* (New Haven: Yale University Press, 1994).

in the process. In contrast, the Allies employed the tank, massed artillery, and the airplane, with which they spearheaded a series of successful offensives in spring, summer, and fall of 1918, employing tactics of fire and movement.

Both sides thus found a way to restore mobility to the battlefield, albeit in somewhat different ways. Had the war lasted into 1919, most of the “revolutionary” innovations that characterized World War II would have been employed by the Allies, from attempts at deep penetration operations by mechanized forces supported by airdrops of infantry behind enemy lines, to massed bomber raids and carrier-based air strikes on “strategic” targets.⁶⁹ To be sure, the technologies of 1919 would not necessarily have been up to the task, but the vision was definitely there.

What happened between the wars—the German development of *blitzkrieg*; the American, British, and Japanese development of carrier aviation; the universal development of air forces—was essentially the evolution and then implementation of ideas that had existed at the end of World War I. You can make a good case that a first-rate infantry battalion commander from one of the Western Front armies of 1918 would have had little difficulty adapting to the command of an equivalent unit during World War II; or in Korea in 1950; or in Iraq in 1991; and perhaps even in Iraq a dozen years later.

Nevertheless, it is true that the Germans were the first to engage in *blitzkrieg*. In September 1939 they unleashed their armies on Poland, winning a stunning victory in a few weeks. In May 1940 they overran the Netherlands, Belgium, and France in short order, and followed this with smashing victories in the Balkans in the spring of 1941. And that summer Germany launched the largest land campaign in military history by invading the Soviet Union.

69. For brief treatments of the land aspects of “Plan 1919” see Tim Travers, “The Evolution of British Strategy and Tactics on the Western Front in 1918: GHQ, Manpower, and Technology,” *Journal of Military History*, vol. 54, no. 2 (Apr 1990), pp. 173–200; and George Raudzens, “War-Winning Weapons: The Measurement of Technological Determinism in Military History,” *Journal of Military History*, vol. 54, no. 4 (Oct 1990), pp. 403–34. For carrier operations, see Thomas C. Hone, Norman Friedman, and Mark D. Mandeles, *American and British Aircraft Carrier Development, 1919-1941* (Annapolis: Naval Institute Press, 1999).

At first it seemed like *blitzkrieg* would deliver yet another victory in short order. But it didn't. Although the Red Army faltered and suffered horrendous losses, it never broke. The German onslaught was halted. An attempt at renewed *blitzkrieg* in the spring of 1942 resulted in a further advance, but at greater cost, and then that too was halted.

The war bogged down into one of massive attrition, punctuated by moments of rapid movement—*blitzkrieg*—whether conducted by the Germans or the Russians or the Americans. After World War II, maneuver warfare was more often resorted to, in circumstances that favored a short war, whether conducted by Israel in 1956, 1967, and again in 1973; North Korea in 1950; or the U.S. and its allies in 1991 and 2003. But as these examples demonstrate, when short war turned to long war, maneuver warfare gave way to attrition.⁷⁰

Critique of the foundations of the concept of 4GW

One premise underlying the arguments that 4GW represents a true military revolution is that modern war was something that arose as a result of the 1648 Peace of Westphalia, which created a political environment in which the nation-state developed a monopoly on the conduct of war. The proponents of this argument proceed to describe how, during the Westphalian dispensation, the conduct of war underwent several more or less revolutionary changes, each initiating a new generation characterized by certain technological and organizational developments and a particular way of making war. The assertion of the proponents of 4GW is that we are entering a new generation of

70. On "maneuver warfare" and *blitzkrieg* see Murray, "May 1940" in Knox and Murray; Liaropoulos, "Revolutions in Warfare;" and James S. Corum, *Roots of Blitzkrieg: Hans Von Sekt and German Military Reform* (Lawrence, KS: University Press of Kansas, 1992). Robert Doughty's *The Seeds of Disaster: The Development of French Army Doctrine, 1919-1939* (Hamden, CT.: Archon Books, 1985); Eugenia C. Kiesling's *Arming against Hitler: France and the Limits of Military Planning* (Lawrence, KS: University of Kansas Press, 1996); and John Joseph Timothy Sweet's *Iron Arm: The Mechanization of Mussolini's Army, 1920-1940* (Westport, CT.: Greenwood Press, 1980) look at two armies that developed excellent ideas but for various reasons did not implement them effectively.

warfare, one in which technological, economic, and cultural changes are leading to what is essentially a return a pre-Westphalian politico-military environment.⁷¹ This new environment is characterized by a decline of the state and a revival of the ability of non-state actors to wage wars, particularly by asymmetric means; an “evolved form of insurgency” will be most common form of conflict.⁷²

There are a number of historiographical problems with this entire concept. Certainly “modern war” did not develop out of the Westphalian settlement. Most historians consider the “modern age” to date from around the onset of the 16th century, nearly 150 years before Westphalia. As we have already noted above, this is the period which military historians tend to see as that which initiated “The Military Revolution,” the development of the way of war that gave the West global dominance. Nor does the development of the war across the modern era necessarily conform to the rigidity of the so-called generations. Nevertheless, in furtherance of the discussion, we will adopt the 4GW terminology.

Despite the assertions of the advocates of 4GW, the Peace of Westphalia can hardly be said to have endowed the nation-state with the sole power to wage war. It is true that at the time “private” war was not unusual. In Europe and in most of the rest of the world individuals and groups—nobles, prelates, towns—were perfectly free to raise armies and engage in hostilities, either against other individuals and groups or against states.

71. For some short critiques of 4GW see Antulio J. Echevarria II, “The Problem With 4GW,” Army War College, Carlisle, PA.: Strategic Studies Center, www.carlisle.army.mil/ssi/newsletter/opeds/2005feb.pdf; Kenneth F. McKenzie, Jr., “Elegant Irrelevance: 4GW,” *Parameters* (Autumn 1992), pp. 51–60; Del Stewart, “Deconstruction the Theory of 4th Generation Warfare,” *Military Intelligence Professional Bulletin*, vol. 30, no. 4 (Oct–Dec 2004), pp. 35–38; Michael Evans, “Elegant Irrelevance Revisited: A Critique of Fourth-Generation Warfare,” *Contemporary Security Policy*, vol. 26, no. 2 (August 2005), pp. 242–49.

72. Hammes, “4th Generation Warfare,” pp. 40–41.

One of the most prominent Imperial commanders during the Thirty Years War (1618-1848), Count Albrecht von Wallenstein (1583-1634), was perhaps the greatest “military entrepreneur” of modern times. Although not a sovereign prince in his own right, he was unusually wealthy, and held extensive lands in the Kingdom of Bohemia. Wallenstein controlled not just a mercenary company or so, but whole regiments, munitions factories, and several fortresses, and was effectively capable of challenging many of the European states of the day. But Wallenstein did work for the Holy Roman Emperor. And when he got too big for his britches, Emperor Ferdinand II brought him down quickly.⁷³ But the military entrepreneur didn't pass with Westphalia, nor did it end the ability of private citizens and corporations to overthrow governments.

Westphalia was, however, a major step forward in the long evolution of the nation-state and its assumption of a monopoly on war making. Under the terms of the Westphalian settlement, nearly a thousand kingdoms, principalities, baronies, counties, bishoprics, free cities, and other entities—even some individuals—possessed varying degrees of sovereignty within the European state system. The vast majority of these were quasi-sovereign components of the Holy Roman Empire.⁷⁴

These were not necessarily the ethnically-based nation states with which we have become familiar over the past couple of centuries. The ethnic nation-state had actually begun to emerge in Europe over two

73. Peter W. Singer, “The Ultimate Military Entrepreneur,” *Military History Quarterly* (Spring 2003).

74. The Peace of Westphalia actually encompassed two agreements, the treaties of Osnabrück and Münster. For an English translation see the Yale University Avalon Project website, <http://www.yale.edu/lawweb/avalon/westphal.htm>. For a short discussion of the law of war as affected by the settlement, see Ove Bring, “The Westphalian Peace Tradition in International Law: From Jus ad Bellum to Jus contra Bellum,” in Michael N. Schmitt, ed. “International Law Across the Spectrum of Conflict: Essays in Honour of Professor L.C. Green On the Occasion of His Eightieth Birthday,” *International Law Studies*, vol. 75. (Newport, RI: Naval War College, 2000), pp. 58-80.

centuries before Westphalia—England, France, Spain, Portugal, Denmark, and Sweden had all effectively developed as nation-states by the sixteenth century.

Other nation-states took longer, Germany and Italy not until the mid-nineteenth, following two centuries during which a multiplicity of “sovereign” principalities and other entities gradually coalesced, not without violence, toward unity. Nor is the process necessarily complete; Yugoslavia, a “quasi-nation-state” created at the end of World War I out of several closely-related peoples in the Balkans, disintegrated during the 1990s, bringing into existence a batch of smaller, but arguably more genuine, nation states.

Lind's notion that standing armies and all the other “things that define the difference between 'military' and 'civilian'—saluting, uniforms, careful gradations of rank, etc.,” were “products of the First Generation” is arguably inaccurate.⁷⁵

Standing armies began to emerge nearly two centuries before Westphalia, with rank structures, uniforms, and such. Regular armies developed almost simultaneously during the late 15th century, as a result of the end of the Hundred Years War in France and of the *Reconquista* in Spain, as kings decided to maintain some veterans permanently on the payroll, if only to keep them out of trouble. During the 16th century and into the 17th, most European monarchs maintained increasingly larger standing armies, despite the rising cost of military establishments, which led to the elaboration of the state's bureaucratic institutions and the development of central banking, in order to find the money.⁷⁶

Money was perhaps the most important factor in the evolution of the dominant role that the nation-state assumed in war making. As military technologies became more expensive, fewer and fewer individuals, organizations, or territorial entities could afford to maintain their

75. Lind, “The Four Generations of Modern War,” p. 35.

76. By way of example, the Bank of Amsterdam, which helped finance the Dutch Republic, was founded in 1609; the Swedish Riksbank in 1668; the Bank of England in 1694.

own armies, except the state.⁷⁷ By the mid-seventeenth century the cost of making war was becoming more than petty princelings, clans, cities, or individuals could normally afford.⁷⁸ The formation of the nation-state was itself at least partially due to the rising cost of war; the king's pockets were deep enough to provide "modern" armaments (i.e., gunpowder weapons, innovative fortifications, specialized warships, etc.), which the nobles could no longer afford.⁷⁹ But this dominance was by no means a monopoly. War by non-state entities was never totally eliminated.

For over two centuries after Westphalia, several corporations chartered by European powers to conduct trade in distant parts of the world frequently carried on wars, for which purpose they raised armies and fleets as necessary. The most notable examples are the

77. The role of the new military technologies in state-formation is a well established idea in history, and not merely in a European context; see Parker, *The Military Revolution*; Brian M. Downing, *The Military Revolution and Political Change in Early Modern Europe* (Princeton: Princeton University Press, 1992); Gábor Ágoston, *Guns for the Sultan: Military Power and the Weapons Industry in the Ottoman Empire* (Cambridge: Cambridge University Press, 2005); Clifford J. Rogers, "The Military Revolutions of the Hundred Years' War," *The Journal of Military History*, vol. 57, no. 2 (Apr 1993), pp. 241–78; Jeremy Black, "War and the World, 1450-2000," *The Journal of Military History*, vol. 63, no. 3 (Jul 1999), pp. 669–81; John A. Lynn, "The *Trace Italienne* and the Growth of Armies: The French Case," *The Journal of Military History*, vol. 55, no. 3 (Jul 1991), pp. 297–330; Kelly DeVries, "Gunpowder Weaponry and the Rise of the Early Modern State," *War in History*, vol. 5, no 2 (1 April 1998), pp. 127–45.

78. The heyday of the "private" military organization was undoubtedly the Italian Renaissance, particularly the 13th and 14th centuries; see Michael Mallett, *Mercenaries and Their Masters: Warfare in Renaissance Italy* (Totowa, NJ: Rowman and Littlefield, 1974).

79. We touched upon this phenomenon briefly during the earlier discussion of the Ironclad Revolution. This trend has continued to the present. As the cost of weapons rises, smaller countries have become relatively less able to compete militarily against larger ones. In the 18th and early 19th centuries states such as the Netherlands, Denmark, Naples, or Portugal could raise and maintain important fleets or respectable armies, which was hardly the case by the end of the 19th century. See Pugh, *Cost of Sea Power*.

Royal East India Company, which by the mid-18th century had conquered India, and the *Vereenigde Oostindische Compagnie* (Dutch East India Company), which in the same period acquired vast territories in South Africa, India, and Indonesia.⁸⁰

Private war by individuals was never totally suppressed either, despite state action and the rising expense of military materiel. On several occasions during the 19th century and well into the 20th, private adventurers managed to sponsor successful coups against weaker countries with considerable success.⁸¹

Family feuds and brigandage flourished across much of Western Europe until the Enlightenment, and in some regions until well into the 19th century. The conflicts between contending sides often involving hundreds of relatively well-armed retainers in full-scale battles.⁸² These irregulars were often indistinguishable from the revolutionary insurgents who played such critical roles in defeating

80. Antony Wild, *The East India Company: Trade and Conquest from 1600* (London: HarperCollins, 1999); Femme S. Gaastra, *The Dutch East India Company: Expansion and Decline* (Zutphen: Walburg Pers, 2003).

81. For 19th century Central America, see Robert E. May, *Manifest Destiny's Underworld: Filibustering in Antebellum America* (Chapel Hill: University of North Carolina Press, 2002) and Albert Z. Carr, *The World and William Walker* (Westport, CT: Greenwood Press, 1975). The only book-length treatment of a privately financed coup is Adam Roberts, *The Wonga Coup: Guns, Thugs, and a Ruthless Determination to Create Mayhem in an Oil-Rich Corner of Africa* (New York: Public Affairs Books, 2006), on an attempt to overthrow the government of Equatorial Guinea by a consortium of investors, which includes a short treatment (pp. 30–36), of the novelist Frederick Forsyth's 1973 attempt to overthrow the country's government. But see also Maurice Chitternden, "Forsyth: My Real 'Life Dogs of War' Coup," *The Sunday Times*, 11 June 2006; Samantha Weinberg, *Last of the Pirates: The Search for Bob Denard* (New York: Random House, 1995), and "Putsch aux Comores: cinq ans de prison requis contre Bob Denard," *Le Monde*, 9 March 2006.

82. For an example of a potent 18th-century bandit gang see Paul F. Angiolillo, *A Criminal as Hero: Angelo Duca* (Lawrence, KS: University of Kansas, 1979).

Napoleon in Spain, Hitler in Russia and Yugoslavia, and even the Soviets in Afghanistan.⁸³

Nor did wars between religions and cultures disappear in the Westphalian dispensation.⁸⁴ Religion remained a major factor in many European wars through the late-18th century. The War of the English Succession (1688-1697) was widely viewed as a religious struggle by both Protestants and Catholics,⁸⁵ and as a result of his victories over Catholic France and Austria during the Seven Years' War (1756-1763), Frederick the Great was hailed as "The Protestant Hero" in England and much of northern Europe. During French Revolutionary Wars (1793-1801), many viewed the struggle as one between the forces of "Reason" and those of "Superstition" (or, on the other side, those of "Atheism" against those of "Faith"). Indeed, both World War II and the Cold War were characterized by deep ideological differences, while the numerous "wars of national liberation" in the 20th century often had religious dimensions, such as the "Troubles" in Northern Ireland or the complex Balkan Wars of the 1990s. As for "cultures" waging war, was not a differing vision of culture a major factor in the French Wars or the Hitlerian War? ⁸⁶

83. A sampling of the literature gives us Charles J. Esdaile, *Fighting Napoleon: Guerrillas, Bandits and Adventurers in Spain, 1808-1814* (New Haven: Yale University Press, 2004); Roger D. Petersen, *Resistance and Rebellion: Lessons from Eastern Europe* (Cambridge: Cambridge University Press, 2001); and David C. Isby, *War in a Distant Country Afghanistan: Invasion and Resistance* (London: Army & Armour Press, 1989).

84. Lind, FMFM.

85. Also known as the Nine Years' War, the War of the League of Augsburg, or King William's War.

86. We will leave aside Lind's curious statement that "ethnic groups and races waged war" (Lind, FMFM, p. 3). Since the nation-state ideally is an expression of ethnic unity, it is inherently Westphalian in the sense he uses. It is, however, not at all clear what he means by "races" waging war, since racial consciousness as understood in the modern world is very much a product of the Enlightenment, which is also Westphalian.

Even ideologically motivated “transnational” actors have not been unknown. From the American Revolution in the late 18th century right through the 20th there were numerous instances in which ideologically motivated international sympathizers supported revolutions and insurgencies with propaganda, money, and volunteers, in Latin America, Greece, Ireland, Germany, Poland, Spain, Italy, and elsewhere; just think of Tadeusz Kosciuszko, Giuseppe Garibaldi, or the many young Americans who volunteered to serve in the British or French armed forces in both world wars, long before the United States became involved.⁸⁷ The most notable instance of large scale volunteering in an ideological cause during the twentieth century were the International Brigades that fought for the Loyalists during the Spanish Civil War. Although a creation of the twentieth century's most potent trans-national actor, international communism, the individuals who came forward to serve overwhelmingly did so out of personal commitment. Less well-known is that there were similar substantial numbers of volunteers who fought for the Spanish Nationalists, recruited by conservative religious and political groups.⁸⁸

87. The literature on this is voluminous, consider just: Albert A. Nofi, “The American Revolution and Kosciuszko,” in Béla K. Kiraly and Albert A. Nofi, eds., *East Central European War Leaders, Civil and Military, 1740-1920* (Boulder: Social Science Monographs/New York: Columbia University Press, 1988), pp. 154–67; Gilles Pécout, “Philhellenism in Italy: Political Friendship and the Italian Volunteers in the Mediterranean in the Nineteenth Century,” *Journal of Modern Italian Studies*, vol. 2, no. 3 (Dec 2004) pp. 405–27; and Edward M. Brett, *The British Auxiliary Legion in the First Carlist War, 1835-8* (Dublin: Four Courts Press, 2005).

88. Speaking here, of course, of true volunteers, not of the troops sent by Stalin to fight for the Republic or Hitler and Mussolini for the Nationalists. See R. Dan Richardson, *Comintern Army: The International Brigades and the Spanish Civil War* (Lexington, KY: University Press of Kentucky, 1982); Andreu Castells, *Las Brigadas Internacionales en la Guerra de España* (Barcelona: Ariel, 1974); José Luis de Mesa, *Voluntarios extranjeros desconocidos en el Bando Nacional durante la Guerra Civil* (Madrid: Ediciones Barbarroja, 1998); Judith Keene, *Fighting for Franco: International Volunteers in Nationalist Spain During the Spanish Civil War, 1936-39* (London: Leicester University Press, 2001).

And then there were the Anarchists, who developed as a political force during the 19th century. An extraordinarily "flat" transnational movement, Anarchism has a millennial vision that entails the destruction of authority. Despite its very flatness, Anarchists have proven politically potent for over a century. In the period around the turn of the 20th century they managed to assassinate a surprising number of monarchs, heads of government, and other prominent people in pursuit of their goal, and played important roles in a number of revolutionary movements, such as the Spanish Revolution and Civil War.⁸⁹

Even international criminal cartels, such as those that smuggle drugs and people around the contemporary world, are not new. During the first half of the 19th century, as the advanced world increasingly came to oppose slavery, shutting down the trans-Atlantic trade in human beings and initiating the abolition of the institution itself, groups opposed to this formed what can only be called an international slaveholders' cartel.

This was a covert cabal of bankers, merchants, ship owners, and slave traders with roots in Britain, the United States (both North and South), Cuba, Brazil, and other countries. For over half a century, abetted by greedy merchants, corrupt officials, and sympathetic citizens in many countries, they managed to evade American, British, and international bans to sustain the trans-Atlantic slave trade at least into the late 1860s.

At the same time, non-state pro-slavery actors financed military expeditions to take over Cuba and portions of Mexico and Central America, with the intention of ultimately joining them to the secessionist

89. Just between 1892 and 1901, notable figures assassinated by anarchists and kindred radical revolutionaries included Empress Elisabeth of Austria, Prime Minister Antonio Cánovas del Castillo of Spain, President Sadi Carnot of France, President Juan Idiarte Borda of Uruguay, President José María Reina Barrios of Guatemala, King Umberto I of Italy, and President William McKinley. Anarchists almost killed Emperor Wilhelm II of Germany, the future King Edward VII of the United Kingdom, and American industrialist Henry Clay Frick. For a short look at the subject, see Richard Siskind, *By Bullet, Bomb, and Dagger: The Story of Anarchism* (New York: Macmillan, 1971).

slave states of the U.S. South to form a slaveholding empire centered on Havana.⁹⁰

In addition, William Lind's notion that in the period prior to the Westphalian dispensation "wars were often many-sided, not two-sided, and alliances shifted constantly,"⁹¹ while certainly true, doesn't mean that such patterns went away during the post-Westphalian First, Second, or Third generations. Side-switching has a long and notable history. During the French Wars (1792-1815), for example, many states switched sides; Spain switched twice, from an enemy to an ally of France in 1796 and then back to an enemy in 1808, while Prussia managed to switch from being an enemy of France to being a neutral in 1795, to an enemy again in 1806, to an ally in 1807, and then to an enemy again in 1812. During the same struggle, the Russians went from being an enemy of France to an ally in 1807, to an enemy again in 1812, when Napoleon invaded their country, thus becoming an ally of Britain, at a time when that nation was helping another of its allies,

90. Surprisingly, there is no comprehensive study of the internationalized pro-slavery movement that, during the first half of the 19th century, promoted the expansion of the institution by sponsoring coups and filibustering expeditions to vulnerable countries while subsidizing the illegal slave trade. The closest are Robert E. May's *The Southern Dream of a Caribbean Empire, 1854-1861* (Baton Rouge: Louisiana State University Press, 1973) and his *Manifest Destiny's Underworld: Filibustering in Antebellum America* (Chapel Hill: University of North Carolina Press, 2002). See also, Basil Rauch, *American Interest in Cuba: 1848-1855* (New York: Columbia University Press, 1948); Joseph Allen Stout, *Liberators: Filibustering Expeditions into Mexico, 1848-1862* (Los Angeles: Westernlore Press, 1973); Donald S. Frazier, *Blood and Treasure: Confederate Empire in the Southwest* (College Station: Texas A&M, 1995); John Hope Franklin, *The Militant South, 1800-1861* (Cambridge, MA: Harvard, 1956); and Tom Chaffin, *Fatal Glory: Narciso Lopez and the First Clandestine U.S. War against Cuba* (Charlottesville, VA.: University of Virginia Press, 1996), all of which focus narrowly on the involvement of American pro-slavery interests. For a view of the illegal slave trade, see Christopher Lloyd, *The Navy and the Slave Trade: The Suppression of the African Slave Trade in the Nineteenth Century* (London/New York: Longmans, Green, 1949); and Raymond Howell, *The Royal Navy and the Slave Trade* (New York: St. Martin's, 1987).

91. Lind, FMFM, p. 3, emphasis in the original.

Persia, try to beat off a Russian invasion. Meanwhile, the United States waged two parallel wars, one against France (1798-1800) and one against Britain (1812-1814), both times assiduously avoiding an alliance with the enemies of its enemy of the moment, and taking time out to fight the Barbary Wars (1801-1805, and 1815) as well. And that only accounts for the major powers.

During the Spanish Civil War (1935-1938), the Soviet Union supported the Loyalists while Italy backed the Nationalists, though Mussolini also sold military technology to Stalin in exchange for petroleum, which he then sent to supply his troops in Spain! During World War II, Italy, Romania, Hungary, Bulgaria, and Finland each switched sides once, France did so twice, while Spain supported Hitler against Russia but avoided conflict with the Western Allies in Europe and tried to join them in the war against Japan!⁹² In Asia, Japan's ally, Thailand, managed to avoid fighting the Allies, with whom they collaborated covertly. And, frankly, the Grand Alliance of the English-speaking nations and the Soviet Union was itself no more than a marriage of convenience that began to unravel even before the defeat of the Axis. Shifting alliances and parallel wars never went away.⁹³

So just what differentiates 4GW from earlier forms of warfare, particularly earlier forms of asymmetric conflict? Many of the threats that the 4GW school contends we will likely be facing in the future are not new. Proponents of 4GW would argue that cultural, social, and tech-

92. Wayne H. Bowen, *Spain During World War II* (Columbia, MO: University of Missouri Press, 2006), pp. 23-62.

93. Historically, the term "parallel war" refers to a situation in which two or more nations were at war with the same enemy, but were not themselves allied, or even necessarily on friendly terms. In recent air power theory, "parallel war" refers to the ideas of Col. John A. Warden III. In this sense, parallel war is a form of EBO in which air power is used to inflict "a debilitating paralysis on the opponent in the shortest possible period of time" by more or less simultaneous attacks on all critical targets, and thus disrupt the enemy's ability to respond. See John A. Warden III, "Preliminary Lessons of the 2003 Iraq War," *Resource File: Iraq*, 9 Apr 2003, http://www.usni.org/resources/Iraq_commentary_warden_09apr03.htm.

nological changes—from ubiquitous media, facile communications, vulnerability of systems in the developed world, implantation of diffuse populations, easy improvisation of weaponry—make the new age's asymmetric threats more numerous. Perhaps. But then again, perhaps not.

Is it not possible that due to the decreasing probability of state-on-state wars, unconventional wars are becoming not more common, but more noticeable? This does not necessarily mean that the new batch of “transnational threats” and “super-empowered individuals” will be any more successful than the irregulars, anarchists, and “filibusters” of the 19th century, or the Che Guevaras, *Brigate Rosse*, and *Sendero Luminosos* of the 20th. In short, it does not follow that 4GW threats are unbeatable.⁹⁴ This is not to say that there aren't differences in the capabilities that the earlier unconventional actors could bring to bear. Today unconventional actors have access to capabilities which can approximate WMD effects. We will return to this point shortly.

Throughout history there have been people who, facing opponents with overwhelming conventional military force, adopted asymmetric strategies to secure their goals, strategies that included insurgency and guerrilla warfare; terrorism and assassination; criminality and smuggling.⁹⁵ The essential idea of “asymmetric strategies” is that rather than attempt to fight your enemy's strengths, you should target his vulnerabilities. But this idea is as old as war itself.

94. Paul J. Dosal, *Comandante Che: Guerrilla Soldier, Commander, and Strategist, 1956-1967* (University Park, PA: Pennsylvania State University Press, 2003); Ernesto Guevara, *The Bolivian Diary of Ernesto Che Guevara* (New York: Pathfinder, 1994); Robert C. Meade, Jr., *Red Brigades: The Story of Italian Terrorism* (London: Macmillan, 1990); and Ehud Sprinzak, “The Lone Gunmen,” *Foreign Policy*, no. 127 (Nov-Dec 2001), pp. 72–73, a short but interesting essay that delves into the mind not only of McVeigh, but also of some others like him, including Osama bin Laden.

95. At least one proponent of 4GW thought, William S. Lind, believes that even migration is a “weapon”; see William S. Lind, “Through the Postern Gate” (http://www.d-n-i.net/lind/lind_3_21_06.htm), wherein he refers to “the mestizo invasion” from across the Mexican Border as a “Fourth Generation element.”

Some proponents of 4GW argue, rather gloomily, that it's essentially a form of warfare at which conventional nation-states are helpless. We have already cited Colonel Hammes' statement that 4GW is "the only kind of war America has ever lost."⁹⁶ In fact, however, 4GW is by no means alien to American military thought or operations. In 1998 the Institute for National Strategic Studies defined asymmetric operations as

a version of not 'fighting fair,' which can include the use of surprise in all its operational and strategic dimensions and the use of weapons in ways unplanned by the United States. Not fighting fair also includes the prospect of an opponent designing a strategy that fundamentally alters the terrain on which a conflict is fought.⁹⁷

As with all wars, in 4GW the political and military leadership has to provide the people with cogent reasons for undertaking a war and define attainable objectives. The national leadership failed at both tasks in Vietnam, and kept shifting objectives in both Lebanon and Somalia to the point where the purpose of the mission became elusive. This same problem affected American performance in the War of 1812, a decidedly "conventional" war that was at best a "draw," which we very nearly lost because failures of leadership led to a critical lack of mass support. Underpinning the poor national leadership in these wars is that none of them posed a recognizable existential threat to the United States. Perhaps the real problem of warmaking in the new century is that the threat posed by covert state actors and transnational movements, such as non-state actors and the super-

96. Hammes, *Sling & Stone*, p. 3.

97. Institute for National Strategic Studies, 1998 Strategic Assessment, Chapter 11, "Asymmetric Threats," <http://www.ndu.edu/inss/Strategic%20Assessments/sa98/sa98ch11.html>. Even earlier, during the 1980s, the U.S. Army had developed a whole suite of "asymmetric strategies," which it termed "competitive strategies," to cope with the enormous superiority in conventional heavy ground combat forces possessed by the Soviet Union; see, Jay P. Kosminsky, *The Competitive Strategies Concept: Giving the U.S. A Battlefield Edge* (Washington: The Heritage Foundation, 1989).

empowered individuals, does not pose an existential danger? To be sure, groups such as Al-Qaeda, which aims ultimately at the subjugation of the entire world to the Caliphate, do pose an existential threat, but it's not one that's particularly immediate, nor particularly tangible to the bulk of the electorate.

The notion that asymmetric tactics are essentially a way of not fighting fair is a curious criticism, given the national myth of the Minutemen who allegedly won the Revolutionary War by sniping at the Redcoats from behind trees. But perhaps it's linked to the apparent unwillingness of Hammes and the other pessimists to investigate more carefully the many 4GW-like conflicts, including insurgencies, that the United States has won.

In point of fact, the United States has fought and won far more 4GW-style wars than "conventional" wars.⁹⁸ Aside from the Indian Wars, American forces successfully operated against piracy in the Caribbean, the Mediterranean, the Aegean, and Southeast Asia; defeated insurgencies in the Philippines and in several states in the Caribbean; and have conducted successful nontraditional wars on most of the continents.⁹⁹

98. Depending upon how one defines a "conventional" war, the U.S. has fought about a dozen; The Revolution, the "Quasi-War" with France, the Barbary Wars (usually thought of as an "unconventional" war, but in fact characterized by perfectly conventional operations), the War of 1812, the Mexican War, the Civil War, The Spanish-American War, World Wars I and II (during which we also fought a pretty impressive unconventional war in the Philippines), Korea, Gulf War I, and the opening stage of Operation Iraqi Freedom.

99. For a summary discussion of America's experience in "small wars" see Frank C. Hoffman, "Small Wars Revisited: The United States and Non-traditional Wars," *Journal of Strategic Studies*, vol. 28, no. 6 (Dec 2005), pp. 913-40. Despite a number of documents published by the various branches of the Armed Forces or by various scholars, there is no comprehensive list of "unconventional" American military operations since the founding of the Republic. For overviews of dozens of such operations just from 1898 through 1934, see Benjamin R. Beede, ed., *The War of 1898 and U.S. Interventions, 1898-1934: An Encyclopedia* (New York: Garland Publishing, 1994).

Even during the Cold War, when the prevailing view was that the U.S. and its allies did poorly in insurgencies, the truth was actually quite the reverse. To be sure, Communist-supported insurgents did win a number of notable victories,¹⁰⁰ but they also failed on a good many other occasions, most of which involved heavy American involvement,¹⁰¹ and they ultimately lost the Cold War. Moreover, during this same period the West was surprisingly successful against “super-empowered individuals” acting for political, religious, or other motives, defeating most groups and marginalizing the rest.¹⁰²

Even in the new world order, the United States can certainly wage 4GW, having demonstrated considerable skill at asymmetric operations. During post-Cold War “peace making” operations in Bosnia and Kosovo the U.S. leveraged highly selective use of air power, economic sanctions, and information operations, to secure a “victory” with virtually no casualties on either side and little permanent damage as well. The overthrow of the Taliban regime in Afghanistan in 2001 and 2002 was also a highly sophisticated operation that simultaneously blended the selective use of American air and ground

100.Examples include the Chinese Civil War (1945–1949), Indochina I (1945–1954), Indonesia (1945–1949), Cuba (1956–1959), Indochina II (1956–1975), Angola (1961–1975), Guinea-Bissau (1962–1974), Mozambique (1964–1975), and Nicaragua (1974–1979).

101.For example, the Greek Civil War (1944–1949), Spanish Republican Insurgency (1944–1952), Iranian Communist Uprising (1945–1946), Philippine Huk War (1946–1954), Madagascan Nationalist Revolt (1947–1949), Korean Partisan War (1948–1953), Malayan Emergency (1948–1960), Kenyan Mau-Mau Rebellion (1952–1955), Sarawak/Sabah Confrontation (1960–1966), Thailand (1962–1978), Guatemala (1965–1979), Che Guevara's “Foco” Insurgency in Bolivia (1966–1967), El Salvador (1972–1982), and the “Contra War” in Nicaragua (1980–1989).

102.As with Spain's Basque ETA Movement (1959–2006), Uruguay's *Tupamoros* (1962–1980), Germany's Baader-Meinhof Gang (1968–1977), Italy's *Brigate Rosse* (1969–1989), the “Troubles” in Northern Ireland (1968–2004), Japan's Red Army Faction (1971–1988) and Aum Shinrikyo Cult (1985–present), or the U.S.'s Weather Underground (1969–1975), Black Panthers (1966–1972), and Aryan Nations (1975–present), among others.

forces with local resistance fighters, information operations, bribery, diplomatic maneuvering, humanitarian assistance, assassinations, and other actions that were characteristic of all four of the “generations” to achieve regime change.¹⁰³ These capabilities have certainly impressed some potential opponents.¹⁰⁴

Arguably, one of the most notable American victories in a 4GW was the Civil Rights Movement, a complex internal conflict that lasted from World War II into the 1970s. The national objective, securing equal rights for all Americans, was opposed by a broadly-based coalition of ideologically motivated state and local officials and underground organizations, supported by a mass of the population in some regions with sympathizers in other areas, who used “lawfare,” corrupt networks, state power, police force, manipulation of public opinion, and both overt and covert violence on a large scale to oppose the national objective.

The “insurgency” was defeated by a combination of political, legal, informational, cultural, humanitarian, and even military actions, that eroded the will of the “enemy” while strengthening that of those fighting the “war.” This was in marked contrast to the first iteration of the struggle for equal rights, Reconstruction, during which the national will was broken by an “insurgency” that used political manipulation, corrupt networks, legal maneuvering, and both overt and covert violence, to sap the national will, thus insuring the survival of white supremacy.¹⁰⁵

103. Evans, *Elegant Irrelevance Revisited*, pp. 245–46. That an insurgency still continues in Afghanistan is due less to the durability of the Taliban movement than to the failure by the U.S. to provide adequate forces to follow-up on its enormous initial success. On this, see Sean Naylor, *Not a Good Day to Die: The Untold Story of Operation Anaconda* (New York: Berkeley, 2005), pp. 55–59, 84–86, 130–31.

104. February 2006 discussion with CNA’s China expert Dean Cheng, regarding Chinese reaction to the Bosnia and Kosovo operations.

105. I have not actually seen any proponents of 4GW make this comparison, but it seems apt.

So while insurgencies seem to be a critical concern of the proponents of 4GW, their research at times seems focused too narrowly on a small set of examples.¹⁰⁶ Moreover, they may have missed a genuine “new” type of war that began to emerge during the 20th century, the generally very low-level type of conflict known as “peacekeeping operations,” which are undertaken by the international community—another “non-traditional” player—in the hope of curbing more serious war.¹⁰⁷

So it is possible for a conventional power to defeat a 4GW-type threat, or at least to reduce it to the level of a tolerable annoyance. William S. Lind says that there “can be no purely military solution to Fourth Generation threats.”¹⁰⁸ He has it right, though he seems to think there's something unique about this conclusion. The phrasing suggests that this was not the case with threats in prior generations. But has there ever been a war in any “generation” for which there was a “purely military solution”?

Over two decades ago, Sir Michael Howard had to remind us that strategy is *not* a purely military undertaking, but one involving political, psychological, cultural, social, economic, and other elements.¹⁰⁹ Success in war always comes through the mating of military power with economic, social, cultural, and political power, which are applied to break the enemy's will to continue.

106.Indeed, Lind's so-called “manual” for 4GW (FMFM, cited earlier), focuses almost entirely on insurgency, thus neglecting all other forms of 4GW.

107.I have never seen peace operations characterized as a type of “war” but they certainly employ military forces and military methods, and are often conducted with means indistinguishable from “ordinary” war. The Schmidl volume, *Peace Operations*, noted earlier, is particularly good in this regard, particularly the essay by Thomas R. Mockaitis, “From Counterinsurgency to Peace Enforcement,” which deals with some of the more troubling ethical aspects of peace “enforcement” operations. See also Chesterman's “Occupation as Liberation.”

108. Lind, FMFM, p. 4.

109.Michael Howard, “The Forgotten Dimensions of Strategy,” in his *The Causes of War* (London: Maurice Temple-Smith, 1983), pp. 101–15.

Critique of some of the concepts of information-age warfare

Information warfare is not a particularly new idea.¹¹⁰ Entire books have been written about information operations, whether intelligence and counter-intelligence operations or propaganda and deception operations, from earliest times down to the present.¹¹¹

We even possess handbooks of stratagems and information operations from ancient times, as well as numberless incidents and examples from the history of war, politics, and diplomacy across the ages. Ramses, Alexander, Caesar, Napoleon, and Hitler all engaged in propaganda and deception operations. Each understood how to use information as a weapon. Ramses II (1301-1234 B.C.) was so good at it

110. As with 4GW, the proponents of information-age warfare sometimes play fast and loose with historical evidence. The Tofflers, among the principle proponents of information-age warfare, have little credibility among historians and political scientists. A search of nearly a hundred journals in history, foreign affairs, and political science reveals virtually no references to either of these works, and only two reviews, which is hardly complimentary. Of *War and Anti-War*, one reviewer said, "This book seems better in the generalities than in the specifics" (Fred Fuller, "New Order Threat Analysis: A Literature Survey," *Marine Corps Gazette* (Apr 1997), while another wrote "a book that contains any number of inaccurate or sloppy generalizations ... about war's past and present and probably, therefore, about its future" (Eliot A. Cohen, *Foreign Affairs*, (May-Jun 1994). See also, Michael Clarke's review of the same work in *International Affairs* (*Royal Institute of International Affairs*), vol. 70, no. 3. (Jul 1994), pp. 538-39; R. L. DiNardo and Daniel J. Hughes, "Some Cautionary Thoughts on Information Warfare," *Airpower* (Winter 1995); Robert J. Bunker, "The Tofflerian Paradox," *Military Review*, no. 75 (May-Jun 1995), pp. 199-202.

111. James F. Dunnigan and Albert A. Nofi, *Victory and Deceit: Deception and Trickery at War* (Lincoln, NE: Author's Choice, 2001); Michael I. Handel, *Masters of War: Classical Strategic Thought* (London/Portland, OR: Frank Cass, 2001); Wilhelm Agrell and Bo Hultdt, eds., *Clio Goes Spying: Eight Essays on the History of Intelligence* (Lund, Sweden: University of Lund, 1983); Guy Hartcup, *Camouflage: A History of Concealment and Deception in War* (London: David & Charles, 1979); Frank Santi Russell, *Information Gathering in Classical Greece* (Ann Arbor: University of Michigan Press, 1999); Rose Mary Sheldon, *Intelligence Activities in Ancient Rome: Trust in the Gods, But Verify* (London/New York: Frank Cass, 2005).

that it was some thirty centuries before most of the world realized he *hadn't* won the Battle of Kadesh (1288 B.C.).¹¹²

During the 1930s Hitler almost managed to convince the world that he really didn't want war, while developing the resources and making the initial gains that enabled him to unleash the most devastating slaughter in history. In this last case, we eventually learned better. Nevertheless, Alexander, Caesar, and Napoleon were such masters of information manipulation that most of us still think they were great guys.¹¹³

What has changed is that, as with other forms of warfare, new technologies have been introduced. So while Ramses had to rely on massive murals to get his message across, Alexander and Caesar could rely on laboriously hand copied public relations messages, Napoleon took advantage of mass print media, and Hitler exploited the power of radio.

Today the tools available for disseminating one's "message" have greatly expanded: television, cell phones, DVDs, blogs, email, and more. And we can still use murals, hard copies, print, and other "obsolete" technologies. This makes the sort of control of informa-

112.Sun Tzu's *The Art of War*, trans. by Samuel B. Griffith (New York: Oxford University Press, 1963); S. Julius Frontinus, *The Stratagems*, trans. by Charles E. Bennett and Clemens Herschel (Cambridge, MA: Harvard University Press, 1925), Polyaeus, *Stratagems of War* (Chicago: Ares Publishers, 1992), ed. P. Krentz and E. Wheeler; *Aeneas Tacticus, Asclepiodotus, Onasander*, Illinois Greek Club, trans. (New York: G.P. Putnam's Sons/London: W. Heinemann Ltd., 1928), not to mention all the anecdotes and incidents recorded in histories from Herodotos, Thucydides, Polybius, Livy, and other ancient historians.

113.For Ramses' "official" account of the battle, see Miriam Lichtheim *Ancient Egyptian Literature*, vol. II, *The New Kingdom* (Berkeley: University of California Press, 1976), pp. 60–72. This, along with some of the "histories" of Alexander, such as *Arrian's Anabasis of Alexander*, and Caesar's *Commentaries*, or *Napoleon on Napoleon: An Autobiography of the Emperor*, ed. Somerset de Chair (London: Cassell, 1992), ought to be required reading for any introductory course in information operations. As for Hitler, some of his speeches about war and peace were so effective that they deceived the entire western peace movement.

tion that was possible in the past much more difficult, with vast potential for damaging information—whether real or fabricated—to spread much more quickly than ever before. The new technologies will make it easier to conduct information operations. But in order to conduct effective propaganda and deception operations one has to understand the enemy's mind, not to mention one's own. The greatest thinkers about warfare throughout history have understood this, as do deeper thinkers about information-age warfare. As a result, many works on “information warfare” cite Sun Tzu,¹¹⁴

Thus it is said that one who knows the enemy and knows himself will not be endangered in a hundred engagements. One who does not know the enemy but knows himself will sometimes be victorious, sometimes meet with defeat. One who knows neither the enemy nor himself will invariably be defeated.

This is particularly good advice in the new global environment, given the cultural gap that separates us from our foes.¹¹⁵

In similar fashion, traditional means of gathering or protecting information have expanded from human agents, to the protection and interception of written communications, and then to telegraph, telephone, and radio, and so on, while we have also added air and then satellite systems, and more, with the information made all the easier to process by the introduction of innovative technologies such as computers. All these intelligence capabilities are supposed to allow us to protect our information, while giving us “information dominance” over our enemies, which will allow us to act “smarter, better, faster”

114. “Sun Tzu's Art of War,” in Ralph D. Sawyer and Mei-chun Sawyer, *The Seven Military Classics of Ancient China*, trans. Ralph D. Sawyer (Boulder: Westview Press, 1993), p. 162. Alberts, Garstka, . . . *Understanding*, p. 35, cites this as: “Know the enemy and know thyself; in a hundred battles you will never know peril. When you are ignorant of the enemy but know yourself, your chances of winning or losing are equal. If ignorant of both your enemy and yourself, you are certain in every battle to be in peril.”

115. This is the thesis of Kwame Anthony Appiah's *Cosmopolitanism: Ethics in a World of Strangers* (New York: W. W. Norton, 2006). Note, for example, the inherent cultural conflict touched upon on pp. 82–83.

than our foes. Perhaps. But data does not equal information, and our greater ability to gather data may merely be giving us a lot of data, rather than "information dominance."

And in any case, how do you know you have "information dominance"? You may have all the information you need, but choose to ignore it. Despite considerable evidence of an imminent Chinese Communist intervention in Korea in 1950, the U.N. forces were very nearly destroyed in November and December of 1950.

Following the spectacular American amphibious end run at Inchon in September of 1950, U.S., South Korean, and U.N. troops had begun advancing into the north. Through diplomatic channels, the Chinese Communists declared that they would not tolerate American troops on the Yalu. The U.N. commander, Douglas MacArthur, believed that this was a bluff, and continued the advance. So the Chinese began moving troops south across the Yalu. Soon Chinese troops were being captured by U.N. troops. By October, there was sufficient evidence of a Chinese presence in North Korea to convince many American and South Korean intelligence officers of a serious threat. But MacArthur and his staff continued to refuse to believe these reports; Chinese prisoners were explained away by MacArthur's staff by various plausible rationalizations.

Even a series of limited Chinese attacks against Korean units in late October was dismissed. And on 24 November, nearly a half million Chinese troops began a full-scale offensive. Greatly outnumbered (over two-to-one), U.N. forces began falling back, incurring heavy casualties in the process. Not until 24 January were U.N. troops able to stabilize a new front, some 200 miles behind that which they had held just 2 months earlier. Despite information dominance, Douglas MacArthur had committed serious errors of judgment. As people in the intelligence community often note, intelligence failures are often not about the quality of the information, but about the unwillingness of the client to whom the information is provided to accept it.¹¹⁶ And, of course, your information may just be wrong, as demonstrated by

116. John F. Schmitt, "What is an Intelligence Failure? A Case Study of Korea, 1950," *Marine Corps Gazette* (Oct 1997), pp. 60-65; Stanlis D. Milkowski, "To the Yalu and Back," *Joint Force Quarterly* (Spring/Summer 2001), pp. 38-46.

the CIA's failure to predict the Iraqi invasion of Kuwait in 1990, the collapse of the Soviet Union, or the disintegration of Yugoslavia.

Our ability to collect more data does not necessarily equate with possessing "information dominance." How we process that information, what it tells us, and how the consumers of that information affect the uses to which it is put are critically important.

Although some of the more extreme among the enthusiasts of information-age warfare believe we can leverage technologies to attain information dominance resulting the elimination of uncertainty—Clausewitz's "fog"—from war, it's not very likely.¹¹⁷

Critique of some ideas behind EBO

It's no coincidence that EBO was birthed by airmen.¹¹⁸ It is essentially the most recent incarnation of the Douhetian/Mitchelite ideas about "strategic bombardment," jazzed up with some modern trappings. Despite heroic efforts to prove otherwise, strategic bombardment (at least when using non-nuclear weapons) has never worked as advertised, that is, in delivering a devastating series of blows that will bring the enemy to his knees. That's not to say that it hasn't helped win wars—just not as decisively nor as quickly nor in the ways that its champions claimed.

Nevertheless, the basic ideas behind EBO are worthwhile. An effects-based operation is usually defined as an operation "conceived and planned in a systems framework that considers the full range of direct, indirect, and cascading effects—effects that may, with different degrees of probability, be achieved by the application of military, diplomatic, psychological, and economic instruments."¹¹⁹ Now that's essentially what warfare has been about since time immemorial.

117. See Alberts, Garstka, et al. ... *Understanding*, pp. 36, 56.

118. For a very thoughtful critique of EBO, see Milan Vego, "EBO: A Critique," *Joint Force Quarterly*, no. 41 (Spring 2006), pp. 51–57.

119. Paul Davis, *EBO: A Grand Challenge for the Analytical Community* (Rand Report, MR-1477-USJFCOM/AF, 2002).

Armies usually fight not to slaughter other armies, but to convince their opponent's leadership to act in specific ways; to stop raiding our cattle, or to cede territories to us, and so forth. For most of history, of course, fighting was the only way to gain the leverage necessary to threaten enemy systems or networks; ruling classes, popular will, economic infrastructure, and so forth.

In the Second Punic War (218-201 B.C.), Hannibal initially sought to defeat the Romans in open battle, in order to discredit them, and thus destroy Rome's network of alliances. Doing so would strike a direct blow at Roman military power. Hannibal did manage to deal devastating blows to the Romans on several occasions. But Rome's alliances largely held. And the Romans, unable to cope with Hannibal's tactical brilliance, decided to avoid confrontation with Hannibal. Instead, they sent their armies to Spain to destroy Hannibal's network of allies and colonies, which provided him with his manpower. In the end, it was the Romans who won the battle for control of the networks.¹²⁰

This is essentially what Clausewitz was talking about when he spoke of the enemy's "center of gravity."¹²¹ That is, the critical node or nodes that, if destroyed, will lead to the collapse of the enemy's ability or will to fight. In the case of Rome during the Hannibalic War, these were the network of alliances that underpinned the power of both sides.

During World War II in Europe, the enemy center of gravity ultimately was Hitler and the Nazi elite running Germany. Arguably, the war might have been won by one bullet, fired into Hitler's brain. In a sense, that's ultimately what actually happened. But getting to that point required massive mobilizations of manpower and industry and years of slaughter on a staggering scale, because we had to strike at the enemy's military in order to achieve objectives that led to the destruction of the enemy's leadership.

120. The best treatment is Lazenby, *Hannibal's War*.

121. For what follows, see particularly Antulio J. Echevarria II, "Clausewitz's Center of Gravity: It's Not What We Thought," *Naval War College Review* (Winter 2003), pp. 108-123.

Clausewitz's concept of the "center of gravity" assumes that the enemy constitutes a system, which is essentially what the EBO theorists are saying. What EBO introduces that is new, is the idea that today our potential to develop "information dominance" gives us a much a greater ability to analyze the enemy's systems, and thus to focus on his most critical nodes in order to secure our objectives with relatively less effort and much greater precision. And we have to keep in mind that the "effects" we want may not be physical, but economic or moral, and that the "weapons" we use may be unconventional, such as information or cyber attacks.

Indeed, this notion addresses Lind's claim that it is difficult to operationalize 4GW, because our opponents' strategic centers of gravity may be intangible, and "operational art is the art of focusing tactical actions on enemy strategic centers of gravity."¹²² Certainly we are not able—or willing—to discredit Osama bin-Laden's ideology, Islam. But does this mean that we are incapable of developing ways to separate him from those who share that ideology, by stressing the ways in which he brings disgrace upon it or violates it?

Should we fire the Baron?

While the proponents of EBO do not inherently deny the validity of Baron Carl von Clausewitz' theories on warfare, Robert R. Leonhard, Martin van Creveld, and some others often argue that he is no longer relevant.¹²³ Nevertheless, to a great extent many of these critics seem to be denying the validity of the Clausewitzian analysis, while at the same time affirming it. In the very same paragraph in which he concludes that Clausewitzian strategy will "disappear," van Creveld goes on to say "... the principles ... will remain the same," and then adds that war will "... continue to be determined by its mutual, interactive character; that is, that war is a violent contest between two opponents, each governed by an independent will and to some extent free to do what he wants."¹²⁴

122. Lind, FMFM, p. 6.

123. See, for example, Steven Metz, "A Wake for Clausewitz: Toward a Philosophy of 21st-Century Warfare," *Parameters* (Winter 1994–95), pp. 126–132; John Bassford, "John Keegan and the Grand Tradition of Trashing Clausewitz."

124. Van Creveld, *Transformation*, pp. 225–26.

As Clausewitz said, the principles he proposed are intended,

as a collective whole, each inextricably linked with the others. Without an understanding of the connections that bind the principles together, as well as the tensions and contradictions that stress them, much of the utility inherent in the principles would be lost. Worse, strategic failure could result from an undue focus on one or a few of the principles, when full appreciation of the whole would yield success.¹²⁵

Leonhard's idea that the principles as we know them are obsolete is difficult to credit. Although written a decade ago, and based on the evidence of the wars of that period, it's hard to argue with the contrary conclusion of other analysts that, "as yet, nothing known or predicted about the Information Age provides conclusive evidence that the development of strategy in the 21st century will be remarkably different than in the past."¹²⁶

Moreover, Van Creveld's assertion that, "Clausewitz's 'trinity' of people, government and army vanishes" clearly demonstrates a misunderstanding of this concept.¹²⁷ Clausewitz did not say that war making is rooted in the trinity of people, government, and army. What the good baron said, in what was an aside amounting only to about 300 words, was that there existed in war a "remarkable trinity" of primordial violence, chance, and rational policy, which are more or less reflected in the state by the roles of the people, the armed forces, and the government.

Clausewitz is here saying that when making war, the people generally provide the pool of the violent emotional energy supporting the fight, while the army copes with the element of chance, and the government provides the rational analysis. One does not need a state for this model to apply. It will work just as effectively for an insurgency or a clan, a pirate fleet or a trans-national criminal enterprise. We can

125. Johnsen, Johnson, et al., p. 3.

126. Ibid, p. 22.

127. Lind, FMFM, p. 41, based, apparently, on van Creveld, *Transformation*, pp. 35ff.

see this if we rename the members of the “trinity” as shown in figure 2¹²⁸

Figure 2. The “Clausewitzian Trinity”—Old and New^a



a. This figure is derived from an idea first suggested by Paul Van Riper, Lt. Gen., USMC (Ret.), “War and Strategic Communications,” presentation at the Naval War College, 7 Mar 2006, <http://www.nwc.navy.mil/miconf2006/presentations/VanRiper2.pdf>.

During the Irish War of Independence, the relationship among the Irish people—whether in Ireland or in diaspora—Sinn Féin, and the Irish Republican Army fits the “Clausewitzian Trinity” quite nicely, despite the fact that there was no Irish “nation-state” save in the dreams of the Irish nationalists. Osama bin-Laden cannot conduct his *jihad* without a constituency that provides money and enthusiasm as

128. On the “Clausewitzian Trinity” see Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (Princeton: Princeton University Press, 1976), p. 89. For an analysis of the concept, see Edward J. Villacres and Christopher Bassford, “Reclaiming the Clausewitzian Trinity,” *Parameters*, vol. 35, no. 3 (Autumn 1995); Alan D. Beyerchen, “Clausewitz, Nonlinearity, and the Unpredictability of War,” *International Security*, 17:3 (Winter, 1992), pp. 59–90; Christopher Bassford, “Teaching the Clausewitzian Trinity,” *The Clausewitz Homepage*, 3 Jan 2003, <http://www.clausewitz.com/CWZHOME/Trinity/TrinityTeachingNote.htm>.

they dream of the theocratic state to be established by his volunteers for martyrdom.¹²⁹

Oddly, while some proponents of the notion that a revolutionary change is occurring in the conduct of war are quite willing to toss out the entire corpus of Western military thought, they are nevertheless often ardent fans of Sun Tzu. Sun Tzu probably lived in the 5th or 4th century B.C., decidedly in the Agricultural Age. This is not to say that Sun Tzu is invalid as a source of ideas and guidance; in fact, he remains one of the most ancient thinkers on war, and his writings continue to be a valuable contribution to military thought, as do other notable ancient Asian military writers, such as Sun Pin, Huang Shi Gong, Xin Qiji, and Miyamoto Musashi. Nor should we neglect the vast wealth of Western military literature, beginning with Sun Tzu's contemporary Thucydides, on through Polybius, Frontinus, and the Emperor Maurice, and on through Machiavelli and Clausewitz and others down to the present.¹³⁰

129. Clausewitz' use of the word "trinity" appears deliberately intended to "preclude any clarity regarding the interrelation of the elements, which may not even be distinct, as mainstream commentators of the Christian Trinity hold that God is both Three and One"; see Bruce Fleming, "Can Reading Clausewitz Save Us from Future Mistakes?," *Parameters* (Spring 2004), pp. 62–76.

130. Alberts, Garstka, . . . *Understanding*, perhaps pointedly cites both Sun-Tzu and Clausewitz (pp. 35–36). See also the comments on the popularity of Sun-Tzu among proponents of information-age warfare in DiNardo and Hughes, "Some Cautionary Thoughts on Information Warfare," cited earlier. Note that, despite his enormous popularity, Sun-Tzu provides no analysis, in contrast to Thucydides, Polybius, Clausewitz, and many others, who not only provide examples and principles, but actually try to provide some analysis.

“Where's the beef?”

Our conclusion after thoroughly reviewing the existing literature is that many of the apparently innovative ways of making war resulting from the coming RMA—whether we call them 4GW or information-age warfare or anything else—are not so much completely new ideas as they are ideas derived from very old, alternative approaches to whatever constituted conventional war at the time. Much of what is being passed off as radically new thinking in the conduct of war—4GW, RMA, information-age warfare, EBO—is, to use a pithy phrase coined by defense analyst James F. Dunnigan, “old wine in new bottles.”

This is not to say that many of the ideas espoused by the proponents of these concepts have no value. Indeed, given the current global strategic environment, it is clearly worthwhile to study unconventional warfare in all its guises. We have already suggested at least one good example for such study, the Irish War of Independence (1916–1921).¹³¹ Let's take a look at this war in more detail.

The Irish War of Independence

The failure of the “Easter Rebellion” (24–30 April 1916), an attempt to spark a nationwide insurrection, convinced the Irish Republican leaders that Britain was too strong to be defeated in a force-on-force confrontation, even when involved in a desperate struggle with Germany. So the Republicans regrouped. They undertook an asymmetric war against Britain. The “political wing” of the movement, the Sinn Fein, operated more or less openly, while the “military wing” became the Irish Republican Army and went underground.

131. Desmond Williams, *The Irish Struggle, 1916-1926* (Toronto: University of Toronto Press, 1966); Edgar Holt, *Protest in Arms: The Irish Troubles, 1916-1923* (London: Putnam, 1960).

In 1918 Irish political leaders quite publicly established an "Irish Constituent Assembly," an "illegal" parliament that waged a political and propaganda war against British control. Republican "information operations" were extremely effective. An extensive propaganda campaign, directed by well known Irish authors, portrayed the Irish cause in the best possible light, especially in the U.S. and France, thus bringing international pressure on the British—meanwhile Irish leaders conducted desultory "peace" negotiations with the British for months on end. In addition, the political leadership organized strikes and public demonstrations, which were often marked by violent British reactions, thus strengthening sympathy for the rebels. Meanwhile, Irish nationalist leadership could draw upon an extensive transnational network of sympathizers, to raise money, recruit volunteers, influence political discourse in critical third countries, and more.

Beginning in 1919, the IRA began an increasingly effective but highly selective campaign of violence against British control, including attacks on police officers, informers, government officials, intelligence officers, and senior security personnel. The British response was clumsy in the extreme, characterized by spasmodic violence, destruction of property, and random arrests, which only served to fuel Irish resentment and stoke international sympathy for the rebellion.¹³² Although the British never seemed to realize that the clumsiness of their actions strengthened the rebellion, the IRA actually learned from its errors, and so maintained strong support by the people.¹³³ In addition, Sinn Fein and the IRA both penetrated the British police and even military forces to a considerable extent, which often compromised British activity.

132. For example, on "Bloody Sunday," 21 November 1920, in reaction to the assassination of 19 intelligence officers, British security forces opened fire at a football game in Dublin, killing perhaps 30 people. Other incidents included "retaliation" against villages in the vicinity of IRA ambushes on British convoys, etc.

133. For example, attacks on ordinary police officers, over 100 of whom were killed in the war, were ultimately deemed counter-productive; many ordinary citizens saw policemen as brother-Irishmen seeking to help their communities. As a result, the IRA eased up on attacking policemen, and even penetrated the ranks.

In July of 1921, a truce was arranged, largely by the intervention of King George V, who was appalled at some of the acts committed in his name by British security forces. A peace was worked out by the end of the year. Although unhappy over the partition of the country into a largely Protestant north and a largely Catholic south, most of the Republican leaders accepted this compromise. The fact that some of the more militant Irish leaders opposed the compromise, led to another round of violence during the Irish Civil War of 1922 to 1923.

So how did the Irish win? They won through attrition. It was not the commonly accepted notion of attrition. It was a different type of attrition, one we see often in asymmetric conflicts. The fighting was not about hurling masses of men and matériel at the British, but hurling challenges that attrited British will and money, seeking to dishearten and bankrupt them. Is that not precisely one of Al-Qaeda's goals? For a capital investment of about \$500,000 and the expenditure of 19 men, Al-Qaeda has forced the U.S. to invest what is conservatively estimated at about \$50 billion on homeland security alone, plus untold billions more invested in military forces and operations globally, with the promise of more to come in the future.

The Irish War of Independence, fought during the so-called "Second Generation" of modern warfare, was an inspiration to both the Indian Congress Party and the Jewish Agency in their campaigns against British domination in India and Israel, efforts that were also ultimately successful. These were precisely the sort of insurgencies that are supposed to be commonplace in the Fourth Generation, so looking at such examples is of great importance. Movements such as Hezbollah, the *Zapatistas*, and many others have adopted—or perhaps reinvented—these very techniques.

The Emancipation Proclamation

An example that is closer to home, and perhaps a surprising one at that, highlights the use of a 4GW strategy during a conventional war. Consider President Lincoln's decision to issue the Emancipation Proclamation in the midst of the Civil War.

Lincoln issued the Emancipation Proclamation in September of 1862, to take effect on 1 January 1863.¹³⁴ We can evaluate the effects of the Emancipation Proclamation by using an expanded version of the DIME scale, which defines the types of action that a state can undertake. This expanded scale takes the established diplomatic, information, military, and economic actions that DIME represents, and separates out financial, intelligence, law enforcement, cultural, and humanitarian actions, to create DIMEFILCH. On this basis, the Emancipation Proclamation used the Union's diplomatic, information, economic, law enforcement, cultural, and humanitarian power. Lincoln's single act had a number of immediate and cascading effects, which affected each side differently.¹³⁵

The Emancipation Proclamation has not been viewed in this way by historians, and thus the overall effects it had on the Union war effort are not usually considered. Nevertheless, the Proclamation affected the war on many levels, as can be seen using the PMESII model (polit-

134. Aside from the diplomatic and morale aspects, the considerable literature on the Emancipation Proclamation usually does not look at its effects using this lens, but see, Michael Vorenberg, *Final Freedom: The Civil War, the Abolition of Slavery, and the Thirteenth Amendment* (Cambridge/New York: Cambridge University Press, 2001); Allen C. Guelzo, *Lincoln's Emancipation Proclamation: The End of Slavery in America* (New York: Simon & Schuster, 2004); William K. Klingaman, *Abraham Lincoln and the Road to Emancipation, 1861-1865* (New York: Viking, 2001). On the diplomatic effects, see particularly Sadie Daniel St. Clair, "Slavery as a Diplomatic Factor in Anglo-American Relations During the Civil War," *The Journal of Negro History*, vol. 30, no. 3. (Jul 1945), pp. 260-275.

135. This recalls Sir Michael Howard's observation, cited earlier, that strategy is not a purely military undertaking, but one involving political, psychological, cultural, social, economic, and other elements. On DIME, see *Joint Forces Command Glossary*, <http://www.jfcom.mil/about/glossary.htm#D>. On the expanded DIME scale see Clifford A. Nancarrow, "Preparing Military Officers for Effective Service in an Inter-Agency Environment" (Graduate Thesis, Naval Post-Graduate School, 2001), pp. ix, 14, and "DIME, PMESII, and now MIDLIFE," <http://council.smallwarsjournal.com/showthread.php?t=67>, which separate the "Information" component of DIME into "Information" and "Intelligence" and adds "Financial," to which present writer has added two "Cultural" and "Humanitarian." We will return to this notion later.

ical, military, economic, social, information, infrastructure), which defines the “networks that can be exploited by effects-based operations to affect an adversary's war making/war fighting will and capability.”¹³⁶

- *Political.* Decisively ended any possibility of British intervention, given the strong anti-slavery sentiments of the British middle classes. It thus bolstered Union confidence, while dashing Confederate hopes, already fading, that foreign intervention might secure their independence.
- *Military.* Permitted the open recruiting of black personnel by the Union, so that by war's end some 10 percent of the men in the Army and perhaps a third of those in the Navy were African-Americans, with the pool of newly available manpower barely tapped. The measure also had operational and tactical implications. Union forces moving through the South, already used to attracting some fugitive slaves, soon found themselves threatened with encumbrance by literally tens of thousands of people seeking freedom. At the same time, the measure led to increased viciousness in the conduct of the war; Confederate troops encountering black troops in combat often engaged in atrocities, which in turn resulted in notably determined resistance by African-American troops.
- *Economic.* Struck a direct blow at the Southern economy, which was heavily dependent upon slave labor, by encouraging slaves to abandon farms and workshops whenever possible. It also “destroyed” an enormous part of the wealth of the slaveholding classes, in the form of money invested in human chattels.¹³⁷ But the measure also put an unanticipated economic burden on the Union, which had to find the resources to support the fugitives.
- *Social.* Undermined the racially rooted class structure upon which Confederate society and culture were based, while elevat-

136. On PMESII, see *Joint Forces Command Glossary*, <http://www.jfcom.mil/about/glossary.htm#P>.

ing always present fears of "servile insurrection," which in turn had further military effects.¹³⁸

- *Infrastructure.* Led to the increasing abandonment of farms and workplaces by slaves, and thus contributed greatly to the deterioration of the South's agricultural and industrial infrastructure, furthering the economic collapse of the Confederacy.
- *Information.* The expansion of Union war aims strengthened popular "will" in the North. By turning the war from a dispute over a legalistic Constitutional interpretation into a crusade for human liberation, Lincoln tapped into deep religious and lib-

137. By 1860 the investment in persons held as slaves in the United States is estimated to have been about \$3.5 billion in contemporary dollars. This was an enormous sum, given that annual GDP was only about \$4.3 billion dollars. Putting it another way, the amount of money invested in slaves was roughly equivalent to annual minimum wage for about 12 million unskilled workingmen, at a time when the population, including slaves, was only about 36 million. The total cost to the Union of fighting the Civil War and maintaining troops on Reconstruction duty through 1877 was about \$6 billion, while the Confederacy spent c. \$2.5 billion on the war. See Miami University/Wake Forrest University, "How Much Was the GDP Then," <http://eh.net/hmit/gdp/>; Matthew J. Koehler, "The Economic Value of Slavery," http://mkoehler.educ.msu.edu/MatWeb/Courses/CEP_909_FA02/CivilWar/economic_slaves.asp.

138. Shortly after Lincoln announced the "Preliminary Emancipation Proclamation," in September of 1862, the Confederacy revised its draft law. The original law of April 1862 had exempted one white man from service for every 20 slaves, to insure proper supervision and control of those in bondage as an internal security measure. Following Lincoln's announcement, this was revised to one for every 15 slaves, to improve control. This led to a marked increase in draft resistance in the Confederacy. In addition, most Confederate states strengthened their compulsory militia laws, increased "slave patrolling," and undertook other measures to prevent a slave insurrection. See Armstead L. Robinson, "In the Shadow of Old John Brown: Insurrection Anxiety and Confederate Mobilization, 1861-1863," *The Journal of Negro History*, vol. 65, no. 4 (Autumn 1980), pp. 279-97; Harvey Wish, "Slave Disloyalty under the Confederacy," *The Journal of Negro History*, vol. 23, no. 4 (Oct 1938), pp. 435-50.

ertarian impulses latent in American culture. But the measure also tended to strengthen Confederate "will."

Thus, the Emancipation Proclamation affected both sides on all levels of war, in a fashion very characteristic of 4GW. In this way it fits Colonel Hammes's characterization of 4GW as using all available networks—political, economic, social, military—to convince the enemy's decision makers that their strategic goals are either unachievable or too costly for the perceived benefit.¹³⁹ By this action, did not Lincoln meet one of the main criteria established for asymmetric operations, that is, "not fighting fair," by "designing a strategy that fundamentally alters the terrain on which a conflict is fought?"¹⁴⁰ On this basis Lincoln could be considered a master of information warfare, effects-based operations, and 4GW.

139.Hammes, *The Sling and the Stone*, pp. 2, 208.

140.Institute for National Strategic Studies, *1998 Strategic Assessment, Chapter 11, "Asymmetric Threats,"* <http://www.ndu.edu/inss/Strategic%20Assessments/sa98/sa98ch11.html>.

Fighting the Fourth-Generation threat

As we have noted, proponents of 4GW seem extremely pessimistic about the ability of conventional powers to cope with asymmetric threats.¹⁴¹ Such an assessment is perhaps overly gloomy. But they certainly are correct in saying that important changes are taking place, indeed, already have and will continue to take place, in the conduct of war. To cope with the new threat environment more effectively, things have to change.

This new threat environment is largely characterized by asymmetric challenges from several possible actors, including culturally and ideologically aligned non-state actors, transnational groups, and super-empowered individuals, and even nation-states. Anyone can engage in a asymmetric conflict against a conventional power. This type of conflict is enabled by instantaneous proliferation of information and misinformation, the enormous ease of modern communications, access to technologies that provide cheap WMD-like capabilities, and the vulnerabilities offered by physical, cultural, social, economic, and political structures of the modern state. Although nation-states may employ similar asymmetric tactics against other nation-states, their vulnerability to conventional force makes them perhaps less likely as adversaries.

This brings up another aspect of the new threat environment that has perhaps been overlooked. State-on-state war poses an immediate existential danger; they threaten the very existence of the state. While some non-state actors may have existential goals in mind—think of Al-Qaeda's desire to incorporate the entire world into the universal Caliphate—but there's little immediate danger to national survival.

141. See, for example, Jennifer Byrne, "Interview with Martin van Creveld," ABC News, 20 Mar 2002, <http://www.abc.net.au/foreign/stories/s511530.htm>.

In the modern environment, a struggle conducted with asymmetric means between a genuine non-state actor and a conventional state—or, indeed, between non-state actors—will have several notable characteristics. In such wars, there is no longer a “front” and a “rear,” nor a “combatant” and a “non-combatant,” nor “legal” and “illegal” targets, distinctions that, in any case, were to a great extent a transitory manifestation of 19th century internationalism that began to fade with the world wars.

Conventional forces, conventionally commanded, and operating conventionally, are substantially less effective against adversaries who have little compunction about violating the Law of War, but even less so against those who have little or no infrastructure to threaten or destroy. In conventional warfare, the problem has always been not so much how to find the enemy, as it has been how to kill him. In contrast, in this new unconventional environment, finding the enemy is very difficult, but once found, it's likely to be very easy to kill him. Thus, the conduct of war, which has never been a “strictly” military problem, is now even less so.

Does this necessarily mean that the asymmetric opponent is therefore unbeatable? Well, certainly if one thinks only in terms of the application of large-scale military force.

Some champions of 4GW seem to suggest that in the past war was something that could be resolved through a “purely military solution.”¹⁴² But war is a political act. And war has never been about a “purely military solution”—whatever that may be. It has always been about using military and other types of power to achieve certain political objectives.

So perhaps the real issue in understanding the new security environment is understanding how the enemy thinks. Proponents of 4GW have focused much attention on the *asymmetry of means* that our enemies will increasingly be employing. Of greater importance is that many of the agents threatening global security today have an *asymme-*

142. Lind, FMFM, p. 4.

try of purpose rooted in an *asymmetry of worldview* which results in an alternative rationality, leading to *asymmetry of action*.¹⁴³

Historically, war has usually been the result of more or less logical calculation (often “miscalculation”) regarding material objectives, such as gaining or maintaining control of government, territory, or trade, motivations that even applied to “non-state actors” who engaged in war, such as clans or pirate fleets, bandit gangs or religious sects. This is not to say that questions of ideology, religio-ethnic identity, or principle might not also have been at play. There certainly were conflicts in which non-material concerns played a motivating role. Think of slave revolts or the Jewish resistance to Seleucid and later Roman domination in antiquity; Moslem and Christian *jihad* and Crusades in Medieval times; or, in the 20th century, the ethno-racial theories driving Nazi Germany's ambitions or the politico-economic ideology underlying Soviet Communist expansionism. Of course, some wars have been started by what might be termed egotistical actors; certainly Alexander, Charles XII, Napoleon, and Mussolini, among others, were motivated as much by personal ambition and what Jomini termed “a mania for conquest” as by any rational purpose.

Some of the enemies we have encountered in the past have had ideologies and value systems wholly incompatible with our own, such as the Communists and the Nazis, the latter arguably were irrational as well. But both were territorially rooted. What of an enemy who lacks a territorial base and is driven purely by an ideology incompatible with any other, with little or no concern for material issues or “conventional” values? Does this not describe Al-Qaeda, or Aum Shinri-kyo, with their visions of a religiously pure earthly kingdom, or the

143. The terms “asymmetry of purpose,” “asymmetry of worldview,” and “alternative rationality” were coined at the May 2006 meeting of Peter Perla, Mike Markowitz, and A. A. Nofi, of CNA, with Professors Robert Rubel, Stephen Downes-Martin, Peter Pellegrino, and Christopher Weuve, of the Naval War College, at the DOD Modeling and Simulations/Connections Conference, in Baltimore, MD. The term “asymmetry of action” was first used in this context in Peter P. Perla, Albert A. Nofi, and Michael C. Markowitz, *Wargaming Fourth-Generation Warfare*, Sep 2006 (CRM D0014752.A2/Final).

Aryan Nations, with its vision of a racially pure society, or, indeed, the "Earth Liberation Front," with its vision of a pure environment?

These are millenarian movements, viewing society as inherently corrupt and evil, and seeking to destroy in it a grand cataclysm in order to replace it with something purer. These are not inherently new threats. Many of the radical revolutionary and nationalist groups that plagued developed nations using asymmetric tactics during the 20th century, from the Anarchists, Social Revolutionaries, *Ujedinjenje ili Smrt*, and IRAs of its first decades, to the Bader-Meinholds, *Brigate Rosse*, Red Army Factions, IRAs, and ETAs of its final decades, had similar views. To be sure, their goals were relatively limited, to gain power in a particular territory in the furtherance of certain national goals— independence, "the Revolution," and so forth. And even the most violent of them tended to use violence in a very focused fashion; it seems unlikely that any would have been willing to sanction attacks that could put literally thousands of lives at stake, as has been done by Al-Qaeda or Aum Shinrikyo in carrying out what they perceive to be God's will.

On 7 August 1998, Al-Qaeda carried out car bomb attacks against the American embassies in Nairobi and Dar-es-Salaam that killed over 200 people and injured some 4,000 more, few of whom were Americans, and, of course, on September 11, 2001, conducted a series of attacks in the U.S. that killed some 3,000 people. And while Aum Shinrikyo's two sarin gas attacks in Japan (in Matsumoto on 27 June 1994, and in the Tokyo subway on 20 March 1995) killed "only" about a score of people, the intention was to inflict literally thousands of deaths.

Thus, there is a great distinction between these non-state actors and earlier ones, and another instance in which the proponents of 4GW have got it right; the state of contemporary society and science provides such groups with potential access to capabilities far more devastating than those available to earlier movements.

To focus on the immediate threat, the goal of Islamist extremists is the rejection of modernity, and the expulsion of Western influences, including Israel, from the Moslem world. Within the Moslem world, secular governments will be replaced by Islamic regimes, leading to the restoration of a pure society, as a step toward the ultimate goal of

uniting all believers under the rule of a restored Caliphate, after which the most extreme groups look to the forced conversion of the entire world.¹⁴⁴ While this program has certain territorial objectives, its primary goals are ideological, certainly far more ideological than the Soviet Union.

This is an enemy who lacks a physical center of gravity that can be targeted, occupied, or destroyed, and one that has no brakes on its actions. To be sure leaders can be captured or killed, and such an option remains critically important. But movements can survive the loss of leaders, even charismatic ones. Fighting this enemy requires discrediting his message and, to use a metaphor derived from conventional counter-insurgency doctrine, “draining the sea” in which he swims, by putting distance between him and potential supporters. Discrediting the message of a movement like Al-Qaeda may be difficult. Nevertheless, if we can better understand the ideology that is central to their message we can develop ways to cope with them, such as strategies to separate the followers from the leaders, such as by addressing the material and political problems that underpin support for the movement or by exploiting gaps between visionary ideology and its practical applications.

There is, moreover, another often overlooked aspect to the threat posed by the non-state or transnational actor. Whatever their message, it often has a territorial dimension. Al-Qaeda may be a “transnational actor” with no territorial base, but its goal is to establish Islamist regimes throughout the Moslem world in preparation for the reestablishment of the Caliphate—that’s a territorial goal. If they begin to attain that goal, they acquire all the vulnerabilities of a conventional state. This has recently been demonstrated by both Hamas and Hezbollah in the Middle East.

After decades of operating as a non-state actor in pursuit of its war against Israel allegedly on behalf of the Palestinian people, early in

144. Sherifa Zuhur, *A Hundred Osamas: Islamist Threats and the Future of Counterinsurgency* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2005), p. 6; Federation of American Scientists, “al-Qa’ida (The Base),” <http://www.fas.org/irp/world/para/ladin.htm>.

2006 Hamas found itself the victor in the Palestinian legislative elections. William Lind observed that as a result, Hamas, "a highly successful Fourth Generation entity became a state," and acquired the obligations, liabilities, and vulnerabilities of a state. Unable to control the terroristic impulses of some of its factions, Hamas shortly found itself suffering a devastating defeat by Israeli military action, with a contingent loss of credibility.

When Hezbollah, which had developed a quasi-state in south Lebanon, attempted to support Hamas, it also found that it had acquired the liabilities and vulnerabilities of a territorial state. This vulnerability, if properly exploited, could have forced Hezbollah to return to being purely non-state actors, and in doing so would have delivered a disastrous blow to its credibility.¹⁴⁵ That this did not occur, was because the Israeli response did not properly exploit Hezbollah's vulnerabilities, and failed in the information dimension, leaving the outcome of the "war" as a draw, with both sides claiming "victory." Despite this, the events of July and August of 2006 strongly suggest that, given their essentially territorial ambitions, many non-state actors can lose by winning.

Many non-state and transnational actors also have another vulnerability; They are often dependent upon a state sponsor, if only a rogue state. That state is subject to conventional action in retaliation for acts committed by its minions. For example, in 1986, after Libyan-sponsored terrorists bombed a Berlin discotheque, the U.S. conducted a series of air strikes against targets in Tripoli and Benghazi. Although these failed to kill Libyan dictator Muammar al-Qaddafi, they caused considerable damage and a number of deaths, and effectively took Libya out of the terrorism business for many years.¹⁴⁶ Similarly, when

145. For a discussion of the dilemma confronting Hamas, see William S. Lind, "To Be or Not To Be a State?," 5 Jul 2006, http://www.d-n-i.net/lind/lind_7_05_06.htm. Lind argues that Hamas should go back to its terrorist roots. But that would mean it would be admitting that it lacks the skill and capability to run a government, and thus conceding any possible legitimacy it might have with the Palestinian people. And, of course, it isn't that Hamas "became a state," but rather that, having won an election is acquired territorial responsibilities in a state.

Afghanistan's Taliban regime insisted on harboring Osama bin-Laden in the aftermath of al-Qaeda's attacks on the World Trade Center and the Pentagon on September 11, 2001, it laid itself open to being overthrown. So action against the sponsors, harborers, or armers of non-state actors is another way of attacking such movements.

Naturally, there will always be some non-state or transnational actors that do that do not have ties or sponsorship from states. But lacking those, such movements will necessarily have reduced capabilities.

So, how do we “make war the 4GW way”?

The proponents of 4GW have some good ideas. But these don't necessarily provide a comprehensive picture of what war will be like; they're fragments of a picture, rather than a complete composition. Warfare is changing. What is occurring, however, is not a “revolutionary” change. Rather, there has been a change in the role and importance of certain traditional aspects of warfare. “Conventional” warfare between states seems in decline, partially due to the development of a globalized community. But if “conventional” warfare is less likely, “other” forms of combat, such as information warfare, covert operations, asymmetric strategies, and so forth, are likely to become more prominent, and are more accessible to so-called “non-state” actors than had been the case in the past, due to technological innovations and cultural and social change, including that very globalization that has otherwise promoted a surprisingly high degree of international amity. At the same time, there has been a blurring of the boundaries that had evolved between “war” and “peace” over several centuries, and the development of a clearer understanding of the system-based nature of societies and their institutions.

Combining still-valid traditional notions about war with the useful ideas of the proponents of 4GW, gives us a firmer idea of what war may be like in the future.

146. On this, see Joseph T. Stanik, *El Dorado Canyon: Reagan's Undeclared War With Qaddafi* (Annapolis: Naval Institute Press, 2002).

- *Political motivations.* Ultimately all conflict involves political objectives, whether these are defined in nationalist, economic, religious, racial, or any other terms.
- *Military resources.* Proponents of 4GW often overlook the continued need for conventional military force. While size and character of the military forces that will be needed may differ from those we have at present, maintaining flexible capabilities across the entire scale of conflict will be necessary, and will always remain an important determinant of success or failure.
- *Cultural understanding.* Sun Tzu's "know the enemy and know thyself" remains a valid underpinning not for only political objectives but also for information operations.
- *"Soft power".* Money, diplomacy, cultural and social activity, humanitarian actions, and intelligence and information operations will be of increasing importance.
- *Non-State and transnational enemies.* States may be less likely to be opponents; non-state actors, transnational entities, and even super-empowered individuals will become more noticeable, so that we may face many small enemies, rather than one or two major ones.
- *Failed, fragile, and rogue States.* Although imperialism had largely eliminated these from the world stage by the end of the 19th century, they began making a re-appearance in the mid-20th century, and have proliferated, providing breeding grounds and havens for non-state actors, transnational entities, and super-empowered individuals.¹⁴⁷

147. By the end of the 19th century, most of the world was ruled, directly or indirectly, by Great Britain, France, Russia, China, the United States, Portugal, the Ottoman Empire, Japan, Germany, the Netherlands, Italy, and Belgium. During the 1930s, Italy, Germany, and Japan had essentially become "rogue states." Although they were curbed, the rapid dissolution of the 19th-century empires in the decades following World War II led to the rise of additional rogue states (e.g., Libya, at least until recently; North Korea, Iraq, again until recently; Iran, etc.), and, perhaps more dangerously, of fragile and failing states.

- *Urbanization and development.* These provide vulnerabilities for the advanced society, giving non-state actors “seas” in which they can swim with relative impunity, while also providing them with potential targets and limiting the flexibility of military response.
- *Facile communications.* Never before has the movement of information or people been so easy, and so difficult to monitor or control, a situation that can be leveraged by all actors, but provides particular access to the asymmetric actor.
- *Technological access.* The increasing availability and importance of technology provides potential enemies with the ability to develop innovative weapons and cause extraordinary casualties.
- *Ubiquitous media.* The extraordinary connectedness of the modern world enables information—false as well as accurate—to move with great rapidity, having an effect on public opinion and decision makers all out of proportion to its importance, or even its accuracy.
- *Diffuse populations.* The “implantation” of diverse ethnic, cultural, and religious communities in virtually all developed countries, creates potential instability in many of them, even those with histories of ethnic and religious pluralism, while providing potential enemies with possible “nodes” of support within those societies.
- *Waning social contract.* Traditional and codified cultural limitations on warfare, albeit often honored more in the breach in the past, are far less likely to restrain non-state actors, transnational movements, and super-empowered individuals engaging in asymmetric warfare, which can range from “military action” to “criminal acts,” thus imposing a serious handicap on the more culturally constrained combatant.

These factors fall into several broad categories. Some have been the most prominent factors in war making throughout history, such as political motivation, military forces, money, diplomacy, and intelligence. Others were of lesser prominence—or perhaps lesser “visibility”—in former times, but have gained increasing importance more

recently, such as information operations; cultural, social, and humanitarian actions; non-state and transnational actors; or failed and fragile states. Newer factors—such as urbanization and development, technological access, facile communications, diffuse populations, and a waning social contract—have appeared that are critical enablers of non-traditional warfare, providing vulnerabilities to the conventional power that can be exploited by the unconventional warrior, whether state-based or non-state.

Coping with the threat

What distinguishes the “threats” posed by lone-wolf actors of the past—such as New York's “Mad Bomber” George Metesky or “Unabomber” Ted Kaczynski—from those of Timothy McVeigh and Terry Nichols?¹⁴⁸ All were loners with a “grievance” or a “vision” who used violence to further their goals. Ultimately, the difference is that the violent act committed by McVeigh and Nichols rose to the level of mass murder, using improvised methods.

This is the real threat of the so-called Fourth Generation, that super-empowered individuals—including the “defeated” remnants of visionary movements—can be deadly on a massive scale. Given their motivations, groups as diverse as Al-Qaeda, Aum Shinrikyo, the Aryan Nations, and the like, even when the body of their supporters might be reduced to infinitesimal levels—when the sea is drained to reveal the sharks—can still be dangerous, because of the access progress in science and technology provides for the improvisation of weapons of extremely deadly effect.

McVeigh and Nichols lacked the sort of support that Al-Qaeda provided Mohammed Atta and his gang, and yet were able to develop a

148. Melissa Ann Madden, “George Metesky: New York's Mad Bomber,” *Crime Library: Criminal Minds and Methods*, http://www.crimelibrary.com/terrorists_spies/terrorists/metesky/1.html; Ted Ottley, “Ted Kaczynski: The Unabomber,” <http://www.crimelibrary.com/terrorists/unabomber/>; Ted Ottley, “Timothy McVeigh & Terry Nichols: Oklahoma City Bombing,” http://www.crimelibrary.com/serial_killers/notorious/mcveigh/dawning_1.html.

comparable WMD-like capability with little effort. But while the number of victims that such actors may claim are on a military scale, are they a military threat or are they something else? Perhaps the real problem of the non-state actors, transnational threats, and super-empowered individuals is that they are not primarily a military problem at all.

Treating non-state-sponsored terrorism as criminal activity rather than as war arguably makes opposing them easier. The Law of War binds us to certain behaviors, but those were developed within the framework of conventional state-on-state conflict. The result has been all sorts of complex legal maneuvers and circumlocutions on the part of U.S. government and military officials to avoid committing ourselves with regard to whether or not we are engaged in the "occupation" of Iraq,¹⁴⁹ or to establish that the prisoners we have been capturing are "illegal combatants" to whom the Law of War does not apply.¹⁵⁰

In contrast, by treating terrorism as a criminal act, several European countries and Japan have been able to defeat often very capable insurgents—ETA, the Bader-Meinhof Gang, the *Brigate Rosse*, the IRA, the Red Army Faction—primarily through law enforcement agencies, facilitated by extensive intelligence operations, with only occasional military intervention. In the process, these countries avoided the complex legalities that would have resulted from saying they were at war. On the other hand, most European nations and Japan don't have

149. See, for example, the very strange comments by W. Hays Parks, the Special Assistant to the Army JAG, made on 7 April 2003, in which he attempts to differentiate between "Military Occupation" with an upper case "M" and "O" as opposed to "military occupation" with lower case letters, which makes little sense in terms of the Law of War; W. Hays Parks, Special Assistant to the Army JAG, United States Department of Defense, News Transcript, 7 Apr 2003, online at http://www.defenselink.mil/transcripts/2003/t04072003_t407genv.html.

150. The U.S. has, for example, declared that Taliban fighters are "legal combatants" but Al-Qaeda operatives are not; see George H. Aldrich, "The Taliban, al Qaeda, and the Determination of Illegal Combatants," *Humanitäres Völkerrecht*, no 4/2002, pp. 203–06.

rigid restrictions on the use of military forces in support of law enforcement.

Moreover, many of these countries have paramilitary national police forces. National police forces have the organization and discipline of military forces and the political, social, cultural, and psychological capabilities of police forces, which enables them to wage "paramilitary war" against terrorists.¹⁵¹

Italy's war against a plethora of very capable terrorist groups during the 1970s and 1980s was an excellent example of the effective use of paramilitary forces against criminal conspiracies that had posed a significant threat to the stability of the country.¹⁵² In contrast, for over a century the U.S. has enshrined restrictions on the use of federal military forces in support of law enforcement in the *Posse Comitatus* Act of 1878.¹⁵³

Naturally, the Europeans had to operate within the limitations of their legal systems. But even those European nations with reputations for being among the most meticulous about individual rights have legal systems that can be surprisingly draconian when national security is involved. Recent experience in uncovering terrorist cells suggests that the European approach will continue to work. But no security system will ever be foolproof.¹⁵⁴ And the current threat epitomized by al-Qaeda is probably more severe than these earlier ones. Does this change things? And if so, how?

151. This useful coinage is from John T. Fishel and Max G. Manwaring, *Uncomfortable Wars Revisited* (Norman, OK: University of Oklahoma Press, 2006), pp. 154–55.

152. Fishel and Manwaring, pp. 147–61. By some reckonings, Italy had to cope with nearly 300 terrorist groups; *ibid.*, p. 24.

153. On the *Posse Comitatus* Act (18 USC 1385), as extended to the Navy by regulation, see U.S. Coast Guard Fact File, "Posse Comitatus Act," <http://www.uscg.mil/hq/g-cp/comrel/factfile/Factcards/PosseComitatus.html>; and Gary Felicetti and John Luce, "The *Posse Comitatus* Act: Setting the Record Straight on 124 Years of Mischief and Misunderstanding Before Any More Damage is Done," *Military Law Review*, vol. 175 (2003), 86–183.

To win against the sort of enemy we are facing requires leveraging *all* elements of national power, not just DIME, but DIMEFILCH; we have to fight the enemy not only with our diplomatic, information, militarily, and economic power, but also our financial, intelligence, law enforcement, cultural, and humanitarian capabilities. In this way, we can address problems with the most appropriate capability across the entire DIMEFILCH range.¹⁵⁵

But we lack the terminology to discuss these issues coherently. We have generally accepted terms for things like tactics, strategy, logistics, operations, economic warfare, and information operations. Using these we can discuss ideas about war and how to engage in war, because they establish a terminological foundation to frame our ideas. But we don't have a term that encompasses the entire notion of total commitment across the DIMEFILCH spectrum of what can only

154. In the average week there are more arrests of suspected terrorists in Europe than in North America; see, for example, "Lebanese Held Over 'Terror Plot'," BBC, 19 August 2006; "Air Terror 'Plot': 11 Charged," CNN, 22 August 2006; "2nd Suspect in German Terror Plot is Arrested in Lebanon," *International Herald-Tribune*, 24 Aug 2006.

155. The Chinese military theorists Qiao Liang and Wang Xiangsui seem to have a handle on this. In their book *Unrestricted Warfare* (Beijing: PLA Literature and Arts Publishing House, 1999), they suggest (pp. 146–47) that there are two dozen different "kinds" of warfare. Some of these are what we understand to be "military," while some are "transmitter" and some "non-military." Although they don't clearly define them all, they list Atomic, Diplomatic, Financial, Conventional, Network, Trade, Bio-Chemical, Intelligence [information?], Resources, Ecological, Psychological, Economic Assistance, Space, Tactical, Regulatory, Electronic, Smuggling, Sanction, Guerrilla, Drug, Media, Terrorist, Virtual [deterrence], and Ideological, a list that need not be considered complete. These can be "mixed and matched" to create a warfighting approach tailored to address a particular problem. Thus, the UN/NATO peace-making operation in Kosovo was a combination of Virtual, Conventional, Diplomatic, and Regulatory, and probably Sanctions, Intelligence, and one or two others as well. *Unrestricted Warfare* is online at <http://www.terrorism.com/documents/TRC-Analysis/unrestricted.pdf> (this book appears to be badly translated). In contrast, Van Riper, "War and Strategic Communications," identifies twenty different types of "war."

weakly be described with the rather vague phrase “the war effort,” which recalls the focusing of the total resources and will of society that we brought to bear during the world wars. In many ways, in 4GW we have to wage war with an even greater integration of our capabilities and resources than was the case in the world wars. The phrase “war effort” is inadequate to describe the degree of integration that will probably be required in the new security environment.

Most importantly, we have to think in the long term. The model to adopt is a Cold War one, rather than a World War one. This may be difficult, as we have not yet found a strategist with the wisdom and foresight of a George F. Kennan or a George C. Marshall. But by revisiting the history of the Cold War, we can study the broad range of weapons that were used to conduct it, and consider which are likely to be of value in waging 4GW, which may also help us find our Kennan or Marshall.

How will we know when we've won?

One of the most important—and most overlooked—aspects of the whole discussion about 4GW is the question posed above; How will we know when we've won? None of the 4GW theorists seems to make much of this question, yet it seems a particularly important one to ask.

Military thought tends to focus around the notion of “winning.” And in general public opinion follows suit. But what is “winning”? In any form of irregular warfare—which is what 4GW essentially is—victory does not come with a V-E Day or V-J Day. For one thing, the war will be much longer; as long as the Cold War perhaps, if not longer still. In fact, the Cold War was fought primarily with the weapons of 4GW; information operations, insurgencies, cultural influence, manipulation of public opinion, covert operations, economic maneuvering, and so forth, with only an occasional—and often painful—resort to conventional military force. Surprisingly, during the Cold War there were frequent voices objecting to the ways in which the war was being fought, voices seeking a military solution to “get it over with,” a position taken even today by some who almost wistfully claim that we could have defeated the Soviet threat more quickly and cheaply through military force than through the means adopted. Yet the

determined pursuit of containment through nine administrations over some 40 years led to the liberation of Eastern Europe from Soviet domination, and ultimately the collapse of the Soviet Union and many Soviet-sponsored revolutionary movements with far less cost—except in time—than would have resulted from even the most successful conventional war.¹⁵⁶

There seem to be several ways to win in 4GW:

- *Victory.* The old style way of winning may still work, at times. In conjunction with other types of activity—information operations, economic maneuvering, and so forth—swift, focused military action could topple dictatorships or restore stability to failed states that harbor non-state actors, or could help end a deadlocked internal conflict in a weak state on terms more or less satisfactory to all concerned. Good examples are the defeat of the Noriega regime in Panama in 1989, the end of the Bosnian civil war in the late 1990s, the restoration of state authority in Sierra Leone in 2000, and the overthrow of the Taliban regime in Afghanistan in 2001.¹⁵⁷ Nevertheless, this would seem a less likely outcome in the case of an enemy who enjoyed a relatively broad base of support, and is hardly applicable to an adversary lacking a fixed territorial base, the prime characteristic of transnational threats and super-empowered individuals.
- *Accommodation.* Coming to an accommodation is not exactly a new way to resolve a conflict. As Winston Churchill is supposed

156. On this, see Norman Friedman, *The Fifty Year War: Conflict and Strategy in the Cold War* (Annapolis: Naval Institute Press, 2000).

157. In Sierra Leone, a decade of civil war punctuated by feeble attempts at international peacekeeping culminated in a “last straw” situation that resulted in relatively massive international military intervention in 2000. This brought disorders to an end with surprising speed. Nevertheless, the presence of international peace-keepers was required for several more year before a fully functioning democratic government was established. See United Kingdom Foreign and Commonwealth Office, “What happened in Sierra Leone?,” <http://www.fco.gov.uk/servlet/Front?pagename=OpenMarket/Xcelerate/Show-Page&c=Page&cid=1017756002632>.

to have said, "I'd rather jaw, jaw, jaw, than war, war, war." Talking, making deals, reaching agreements, circumscribing issues, along with the occasional use—or threat—of force, can all have the effect of postponing conflict. Quite a number of peacekeeping operations all over the world are essentially doing just this, such as the Multinational Force in the Sinai and the U.N. peacekeepers on the Golan Heights and in Kosovo. A war postponed may be a war averted. And even if the potential adversaries never end up seeing eye-to-eye, at least they aren't killing each other, and possibly setting the stage for the spread of instability, including terrorism. "A twenty year [peacekeeping] mission with no end in sight hardly seems like a good solution until one looks at the bloodbaths in Rwanda or Bosnia." ¹⁵⁸

- *Marginalization.* A comprehensive campaign of military and law enforcement activities, intelligence and information operations, "engagement," economic actions, international isolation, and so forth, can reduce a "threat" to the level of a tolerable annoyance (or, if one prefers, a festering sore). In this regard, think about the Anarchists of a century ago, or, more recently, Castroite Cuba, the *Polisario* in Western Sahara, the *Brigate Rosse* in Italy, or Peru's *Sendero Luminoso*.

The point of both accommodation and marginalization is that if you wait long enough, some problems may disappear. As in all wars, our enemies seek to wear down our will. We can oppose them in the same manner, by spending time; the longer we hold off surrendering to them, the more likely we are to win.

The biggest threat at present comes from anger among vast masses of people across the world who are marginal to the developing cosmopolitan global culture due to cultural patterns, poverty, or oppression, in places like Africa, Asia, and Latin America, or by their own cultural isolation as immigrant minorities within advanced secular democratic societies. Among Moslems, in particular, religious extremists hostile to the evolving global cultural milieu are leveraging

158. Thomas R. Mockaitis, *Peace Operations and Intrastate Conflicts: The Sword or the Olive Branch* (Westport, CT: Greenwood Press, 1999), p. 5.

the anger sparked by poverty, backwardness, and oppression—real or imagined—as well as cultural shock to wage war against the developed world in an effort to overthrow the existing international system. The longer we hold this enemy off, the more his base will be weakened by the very influences that he decries.

Of course we must take some action to help this along. Returning again to the Cold War, Western actions can be seen to have been a series of accommodations on some matters (e.g., “You stay in Eastern Europe, and we won’t try to throw you out.”) and confrontations, often through “surrogates,” on others (e.g., Korea, Lebanon 1958, Vietnam, Arab-Israeli Wars, Latin American and African “proxy wars”). But the struggle was primarily characterized by economic competition, diplomatic machinations, cultural influence, social activity, and so forth. This was “containment.” And although perhaps the strategy has been implemented with less deliberate intention, it seems to be what has happened to the threat from Libya and what may be happening now to that from China.

Will such a policy work against an ideologically motivated non-state actor, such as Al-Qaeda? Probably only in an indirect fashion. A combination of soft and hard capabilities may allow us to strip away much of the popular support such movements can gather. When combined with focused military action to eliminate the critical thinkers driving the organization, such an approach may reduce those organizations to relative ineffectiveness. But it’s important to realize that some threats will never go away, but merely be driven into the shadows, from whence they may occasionally emerge with possibly deadly effect. And we must also realize that the disgruntled individual is now capable of wreaking significant damage, a matter that no amount of military power, police activity, or intelligence scrutiny is ever likely to eliminate.

We cannot put the genie of technology back in the bottle; the improvisation of WMD is going to be a permanent fixture of the world’s security situation.

Conclusions

On Fourth-Generation warfare

There is no doubt that the conduct of war is changing. But while the proponents of ideas such as 4GW, the RMA, and so forth, have hit upon some important developments, they have also overstated them to a considerable extent.

What is happening is less a “revolutionary” change than an “evolutionary” one. The changes are in part due to an apparent decline in “conventional” warfare between states, attributable to the development of a globalized community, and to the devastating effects of modern weaponry. While clashes of conventionally trained and equipped troops are still likely in this new environment, other forms of combat, such as information warfare, covert operations, asymmetric strategies, and so forth, are becoming more prominent. And the very same developments in technology, economics, culture, and communications that enable globalization, are also enabling so-called “non-state” actors to assume a more visible, and potentially more deadly, role than was the case in the past.

Our challenge is to find the appropriate balance between the “old” ways of conducting war and the “new.” That is, we must restructure our organization, forces, and doctrines—and perhaps most importantly our “mind set”—in order to address the changing nature of the threats by which we will most likely to be confronted in the new environment.

On wargaming 4GW

Our investigation of the concepts we have discussed under the rubric of 4GW shows that there is no question but that the nature and conduct of war is changing. It always has. Some of the coming changes

may be revolutionary. Most are more likely to prove to be evolutionary. It's important to keep in mind that throughout history there have been many developments characterized as revolutionary. Others have taken the form of what we today might call asymmetric approaches, information operations, effects-based operations, or non-traditional actors. These are not phenomena of recent decades. What is happening is not necessarily that radical new ways of fighting wars are developing that alter the fundamental nature of war, but rather that there is a reordering of the prominence—and perhaps even the relative importance—of some of war's traditional elements.¹⁵⁹

To incorporate the ideas of 4GW more effectively in future wargames, designers must get a better handle on what really are the asymmetries involved in 4GW. The environment of 4GW highlights potential asymmetries inherent in the ways different sides in a conflict may think about the real world.

Proponents of 4GW have focused much attention on asymmetry of means. More important than this, however, is the fact that today's and tomorrow's threats to global security have an asymmetry of purpose rooted in a drastic asymmetry of worldview when compared with the purposes and worldview of those who are the champions of globalization. These asymmetries result in an alternative rationality, leading to the sorts of asymmetry of action that characterizes the activities of al-Qaeda and other terrorist organizations.

These asymmetries are the key elements that must dictate what players in 4GW wargames want to accomplish and, therefore, what types of actions they might want to undertake. Because games are about decisions, a critical element in game design will be to understand the nature and implications of the decisions and options available to the players as driven by their worldviews and purposes.

In keeping with Sun Tzu's principle "know the enemy and know thyself," a game design intended to explore 4GW must incorporate an

159. For a more detailed discussion see Perla, Nofi, and Markowitz, *Wargaming Fourth-Generation Warfare*.

understanding of the asymmetries of worldview between the opponents. The game must reflect the why and the how of what each side thinks. This will permit the development of game objectives that are appropriate to the worldview of each side. These are not likely to be symmetrical, but they may be complementary, or overlap in unusual ways. For example, one side might be satisfied with territorial control and stability, while the other may primarily be interested in developing and extending its networks, regardless of who controls the territory.

Of course, such an asymmetry of objectives could lead to both sides claiming victory; in effect, one side can claim a win in the physical sphere, while the other, with equal validity, could claim a win in the psychosphere. This leads to an important disconnect between war-games reflecting symmetrical worldviews and those dealing with asymmetrical worldviews; attaining one's objectives and "winning" may not be the same thing. How do we decide who's really won? Does such a concept even make sense? Is it possible for both sides to win—or for both to lose? Or perhaps winning and losing must be evaluated by more complex criteria than that of merely attaining one's objectives.

To further explore the problem of winning and losing, let's dig a little deeper into the design elements of such a 4GW game, focusing on the actions which the players will be able to take. Setting the objectives for each side permits the development of a range of optional actions—the means or capabilities—available to each. It is possible that these may be totally different for each side. But this may not necessarily be so. Depending upon the circumstances, each side may well have capabilities that are similar or even identical to those of the other, as well as some that are different. Each side may have a mix of conventional and asymmetrical capabilities.

Thinking back to our example of the Emancipation Proclamation, these would work on the DIME scale of capabilities, or perhaps even the expanded DIMEFILCH scale. The effects of capabilities would be scored using the PMESII model. Most likely a particular action will have an effect in more than one category, though probably to a different degree depending upon the category. But in addition to known

capabilities and means that are available to the players, it is possible—probable?—that the players may seek to invent their own.

An inherent element in the trend toward asymmetric conflict by non-state actors and super-empowered individuals is that these people are able to invent weapons or conceive of actions that are not conventional. To reflect effectively the uncertainty of 4GW capabilities, a game must permit players to invent new types of action. This is certainly the most difficult aspect of developing a game reflecting a 4GW threat environment.

To be realistic, a 4GW game must permit players to invent new types of weapons and new types of actions. But how do we ensure that their innovations fit legitimately within their own, simulated, worldview? An Islamist radical would hardly hesitate to detonate a suitcase nuke in an American city, but what if an American player, in the role of such an Islamist, proposed doing so in Mecca, with the intention of blaming the United States? Such an act would not violate any physical realities, but would it be likely in reality given the psychological realities underpinning the movement? How can we judge?

In addition, given that we are trying to game a conflict in which asymmetric objectives and worldviews are of primary importance, it is possible that, for any particular event, combat may be measured in several different ways. One side may perceive that it has won or at least gained an advantage, when in fact it has lost, while the other may perceive that it has lost when in fact it has won. Or perhaps both have won, or both have lost, despite their perception of the outcome. In each case the opposing sides would be measuring the relative degree of success or failure through the lens of its worldview. And each may be wrong in its assessment.

Without getting into details about game mechanics, it seems reasonable that allowing players to invent new types of action and keeping track of objective reality will require a third party to “play God,” as it were. This suggests that wargaming the 4GW environment will require something that's a cross between a rigid *kriegspiel* and a free *kriegspiel*, a game largely governed by a reasonably elaborate set of fixed rules, but with the assistance of a third party to act as an neutral adjudicator or facilitator.

The players must be the ones who make the decisions, but the adjudicator must be the one who informs them of the outcomes, which he may characterize differently for each side, reflecting how they may each perceive consequences of a given event. The facilitator will be the one to keep track of objective reality. In addition, the facilitator will have to evaluate the legitimacy of any new capabilities, types of actions, or institutional responses that the players wish to invent. This will require careful guidance on what is likely to be culturally appropriate, that is, whether it fits within the worldview of the proposing player. So a 4GW-type game will have to recognize these different perceptions of success and failure, including how those perceptions affect real capabilities.¹⁶⁰

A game design intended to explore 4GW-type situations must incorporate an understanding of the asymmetries of worldview between the opponents, in order to incorporate the why and the how of what each side thinks, which can then be built into the game. In short, the most difficult part of designing a game that reflects the realities of a conflict between opponents with genuinely asymmetric worldviews will be to develop the guidelines necessary to allow for the players to develop innovative capabilities and actions.

Such a game must also reflect the blurring lines between war and peace, legitimate and illegitimate conduct, and the traditional boundaries between different types of organizations and agencies, all of which seem to be needed in order to develop seamless responses to 4GW threats. As a result the game must have ways in which the players can:

- Develop tight coordination among national military, diplomatic, judicial, and economic institutions, at the state, local and federal levels
- Work with their foreign counterparts and international organizations

160. For a detailed discussion of these game-design issues, see Perla, Nofi, and Markowitz, *Wargaming Fourth-Generation Warfare*, pp. 34–37.

- Work with other non-governmental organizations as well as industry
- Teach themselves about ways to make such interactions a success, as well as ways that they could go wrong.

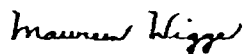
Just as we must restructure our organization, forces, and doctrines—and perhaps most importantly our mind set—in order to address the changing nature of the threats confronting us, we must adopt innovative approaches to wargaming, in order to reflect the ways in which asymmetric worldviews may influence the nature and conduct of war during the 21st century.

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September 2006

A handwritten signature in black ink, appearing to read "Maureen Wigge".

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