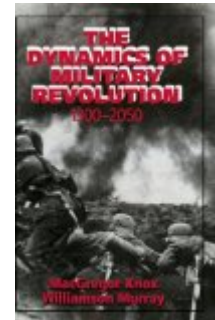


MacGregor Knox, Williamson Murray, eds.. *The Dynamics of Military Revolution, 1300-2050*. Cambridge: Cambridge University Press, 2001. xiv + 203 pp. \$28.00, cloth, ISBN 978-0-521-80079-2.



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Published on H-Diplo (August, 2002)

The Evolution of Revolution

A decade ago, military history seemed all but a dead academic art. Traditional combat narratives (the stuff of battles and generals) appeared to be as obsolete as crossbows and cavalry. Americans, in the wake of the Cold War, proved particularly apathetic about the subject. American power, let alone the United States' military prowess, was unchallenged and unchallengeable. Studying past struggles had little relevance when the prospects for future wars seemed remote. If there were conflicts, clashes would inevitably end in lopsided U.S. victories. Military history's presence in academia became anemic. Course offerings and the number of dissertations on military matters declined. Professorships grew scarce. If there was any spark of interest in the military past, it was in the area of "new military history," the study of the long neglected aspects of warfare such as race, gender, memory, and identity. This mini-boom had little to do with the interests of military professionals and students of public policy. Rather, it was an effort to extend the techniques of social history and postmodern theory to the far corners

of the discipline.[1] History as a tool to help people think about the challenges of fighting and winning future wars became a quaint, archaic notion. A modest guild of historians is attempting to buck the trend, arguing that historical analysis has something important to say about the current debate over the form that military competition will take in the twenty-first century. In this respect, MacGregor Knox and Williamson Murray's *The Dynamics of Military Revolution, 1300-2050* is bellwether scholarship. Through ten essays drafted by eight distinguished military historians, they craft an argument that concludes that dramatic changes in the ways wars will be fought are likely in the years ahead; the United States, despite its tremendous technological advantages, may not lead the way; and the form and results of these changes will be difficult to predict or control, but once they are underway they could proliferate widely, being adopted by powers great and small. These provocative findings and the book's case studies provide a needed context for current debates.

As Knox, a professor of international history at the London School of Economics and Political Science, and Murray, a senior analyst at the Institute for Defense Analyses in Washington, D.C., point out in an introductory essay, the very notion underlying current policy debates on the future military is, in part, built on the historian's craft. The evolution of the military revolution rests on three conceptual branches (pp. 2-4). The first is an influential 1956 essay by historian Michael Roberts on the military innovations of the Swedish King Gustavus Adolphus. Roberts argued Gustavus's reforms gave rise to the military systems that allowed the European nation-state to thrive over the course of the seventeenth century. Roberts's interpretation remained the historical orthodoxy for decades until challenged by historians like Geoffrey Parker. A lively dispute ensued. While there is a general consensus that a seventeenth-century military revolution did occur, early modern historians continue to differ over the origins, nature, and importance of the changes it wrought in society and the nature of warfare.[2]

The second contribution to the conceptual foundation of the current debate is the writings of Soviet military theorists in the 1970s, who believed that the introduction of precision-guided munitions was ushering in equally dramatic change. These Russian writings popularized the term "revolution in military affairs," which theorists in the West co-opted to describe the even more dramatic changes in warfare they anticipated would result from the application of information technology and space systems to military organizations.

The third influence is perhaps the most obscure, but arguably the most important in shaping American military thinking, stimulated by a small, little-known office in the Pentagon. The Department of Defense's Office of Net Assessment, directed by Andrew Marshall, closely analyzed the Soviet writings and built on them with its own analytical rigor. The objective of a net assessment,

as perfected by Marshall's office, was to provide an even-handed look at both sides of complex military competitions, examining the long-term trends and present factors that govern the capabilities of the United States and its potential enemies. In particular, Marshall had a penchant for historical case studies which proved especially useful for highlighting the political, social, cultural, and ideological dynamics that affect military developments.[3] Studies sponsored by his office were highly influential in shaping opinions in the defense, intelligence, and foreign policy communities.

Today, few contest the notion that military affairs are on the precipice of historic change, an idea popularized by Alvin and Heidi Toffler as "third wave warfare." [4] A nuance added by Knox and Murray's introductory essay is to distinguish between a "military revolution" and a "revolution in military affairs," or as they are commonly called "RMAs." [5] In their ontology, military institutions change to adapt or anticipate changes in society. Thus, military revolutions "recast society and state as well as military institutions" (p. 11). Knox and Murray list five: the rise of the seventeenth-century state system, the French revolution, the industrial revolution, World War I, and superpower nuclear competition (p. 13). In contrast, an RMA is a "complex mix of tactical, organizational, doctrinal, and technological innovations in order to implement a new conceptual approach to warfare or to a specialized sub-branch of warfare" (p. 12). What distinguishes an RMA from ordinary innovation is a dramatic leap in military effectiveness. The authors might well have added the term "transformation" to their lexicon, since it too has been frequently bandied about by proponents for innovation. Transformation encompasses the process of creating RMA capabilities. Transformation is innovation on a grand scale that results in providing a major competitive advantage.

Knox and Murray find that the current thinking on military revolution is deeply flawed be-

cause it over-emphasizes the role of technology. They are particularly critical of the work of Admiral William Owens, the retired Vice Chairman of the Joint Chiefs of Staff (p. 178). Owens's vision, they argue, asserts that technological innovation can overcome the unknowns and ambiguities of war by providing near-perfect information which allows generals to instantly out-think and out-act their enemies.[6] In contrast, Knox and Murray believe that confusion in battle, as described by the Prussian military theorist Carl von Clausewitz, is an immutable part of war.[7] They are also critical of RMA proponents who over-emphasize the importance of technology in driving revolutionary change. They argue that leadership along with institutional, organizational, and intellectual initiative are equally, if not more, important than technological innovation. In part, RMA advocates are being set up as straw men. Owens, for example, never argues in his book that generals will always have "perfect" information nor that chance and unknowns can be banished from the battlefield. Nor does he dismiss the importance of intellectual change and other human factors in transforming military institutions. The war in Kosovo, despite America's preponderance of power and monopoly on high-tech weaponry, offers proof enough that confusion and ambiguities, particularly at the nexus between political and military decisionmaking, are still an enduring component of conflict.[8]

The three lead contributions in this book--Clifford Rogers on the military innovations of England's Edward III during the Hundred Years War, John A. Lynn's description of the seventeenth-century French military, and MacGregor Knox on the French Revolution--all echo the finding that technology is less important than RMA proponents assume. Indeed, during this period, broad technological innovation could be agonizingly slow. As Lynn points out, it took forty-seven years to adopt the relatively modest innovation of moving from a plug bayonet (a long knife stuck in the end of a barrel which enabled a musketeer to also use his

weapon as a pike) to a socket bayonet (which was affixed to the outside of the barrel allowing for both functions, simultaneously) (pp. 39-40). Still, the case studies in these three essays are drawn from periods prior to the Industrial Revolution when rapid, unprecedented, and swiftly proliferating technological change was not a central feature of society. It is little surprising that technology alone does not account for dramatic military reform.

Mark Grimsley's essay on the American Civil War and Dennis Showalter's examination of Prussian reforms during the nineteenth-century German Wars of Unification offer much better examples for dismissing the RMA as a process of technological determinism. Grimsley, on the other hand, overstates the case for the rise of "total war," an age in which societies were able to mobilize the full capacity of society in pursuit of military efforts (p. 75). Total war, as Grimsley admits, is an elastic, unsatisfactory term that requires classification.[9] Showalter provides an excellent overview of the scope of Prussian military innovations. He demolishes the well-worn myth that the Prussian needle gun overwhelmed the fledgling German Empire's less technologically sophisticated opponents.

Covering the first half of the twentieth century, studies by Holger Herwig, Jonathan B. A. Bailey, and Williamson Murray round out the book. Herwig describes a failed military revolution, the reforms of British First Sea Lord Sir John "Jackie" Fisher. Fisher proved extraordinarily effective in converting Britain's naval force, replacing a coal-fired fleet with oil-powered, armored battleships, but he failed in his efforts to more broadly transform Britain's approach to naval warfare. The climatic battle of Jutland during World War I represented a culmination of the nineteenth-century battle fleet rather than serving as the precursor of a military revolution.[10]

Bailey examines the influence of indirect artillery fire on World War I tactics and why mili-

tary leaders failed to turn this new capability into a war-winning weapon. Colonel Georg Bruchmüller pioneered innovations in combined arms warfare that might have broken the stalemate but too late for Germany, which was already on the verge of strategic exhaustion.[11]

Murray credits Germany's postwar resurrection to visionary leaders like General Hans von Seeckt. Seeckt never allowed a lack of resources to constrain innovative thinking. Germany developed tank doctrine even before it had any tanks. Intellectual change, Murray argues, preceded technological capacity.[12]

Herwig, Bailey, and Murray each argues in his own way for the pre-eminent role of leadership in promoting extraordinary change. Bruchmüller was a brilliant innovator, but lacked the advantages enjoyed by Fisher, Seeckt, and Admiral William Moffett, who pioneered American naval aviation. Each had a vision; a long, extended term of leadership; a penchant for innovative exercises and experimentation; and political support that protected them from detractors and second-guessers. While none single-handedly instigated an RMA, they managed to develop intellectual and institutional foundations that allowed their countries to rapidly exploit emerging technologies.

While these essays make a strong case that technology alone does not equal an RMA, its hard to conceive of a twenty-first-century RMA without a technological precursor. Technology is an integral component of every aspect of modern society. Can there be a new way of war that is not based on new technology? A case can be made that the most dramatic changes in warfare will not come from conventional military forces, but from the "networks" and "netwars" as described by RAND analysts John Arquilla and David Ronfeldt.[13] Netwars will be fought by old fashioned criminals, extremists, and terrorists, fueled by conventional class, religious, ideological, and ethnic hatreds. But rather than employing traditional rigid, hierarchical commands, they will be organized in

loosely netted "networks," groups of small cells or individuals that can operate and sustain themselves autonomously. Lacking readily identifiable infrastructure or assets, they will present few targets that can be readily attacked or held at risk with conventional military power. If Arquilla and Ronfeldt are right, in future conflicts the primal warrior ethos may best the twenty-first-century war machine. Even in the case of netwar, however, technology is an important factor. What makes these groups so potentially formidable are the technologies that drive the modern world: global transportation systems that give any organization worldwide reach, the internet which facilitates the rapid flow of information, and the proliferation of technical know-how that allows even small groups to launch potentially catastrophic cyber and biological weapons attacks.

In a concluding essay, Knox and Murray posit that military revolutions will have a profound influence on the century ahead. Yet they are less than optimistic concerning the role America will play. In addition to an unshakable fixation on technology, they argue that military service cultures (with the possible exception of the Marine Corps) are ill-suited to provide the intellectual foundation for dramatic change.

While these essays provide needed context for understanding the dynamics of military change, it is disappointing that they are drawn almost exclusively from examples relating to the rise of the Western powers and deal exclusively with conventional military operations. Do the dynamics that govern revolutionary change in how armies and navies fight also apply to unconventional combat, terrorism and guerrilla warfare? Also, if military revolutions, RMAs, and transformation are true historical phenomena, then why isn't the study of non-Western military developments equally worthy of analysis? Case studies that examined why societies like medieval China and Japan turned their back on military innovations such as naval power and gunpowder might

make an interesting contrast to European developments. Military innovation in African societies could also be a fruitful topic for comparison.[14] Approaching the subject of military revolution and transformation from the straitjacket of a modernist, Western mindset might be exactly the wrong perspective for thinking about the future of war in a globalized world or for appreciating the forces that have shaped present society.

Notes

[1]. Peter Paret, "The New Military History," *Parameters* (Autumn 1991): 10-18; Jay Luvaas, "Military History: Is it Still Practicable?" *Parameters* (Summer 1995): 82-97.

[2]. Roberts's essay along with other key contributions in the debate are reprinted in Clifford J. Rogers, ed., *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe* (Boulder, Colo.: Westview Press, 1995).

[3]. For an introduction to the net assessment process, see George F. Pickett, James G. Roche, and Barry D. Watts, "Net Assessment: A Historical Review," *On Not Confusing Ourselves: Essays in Honor of Albert and Roberta Wohlstetter*, Andrew W. Marshall, J. J. Martin, and Henry S. Rowen, eds. (Boulder, Colo.: Westview Press, 1991), pp. 177-78.

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

[5]. Knox and Murray's distinction between a military revolution and a RMA draw on Clifford Rogers. Clifford J. Rogers, ed., *The Military Revolution Debate: Readings on the Military Transformation of Early Modern Europe* (Boulder: Westview Press, 1995); Thierry Gongora and Harald Von Riekhoff, eds., *Toward a Revolution in Military Affairs: Defense and Security at the Dawn of the Twenty-First Century* (Westport, Conn.: Greenwood, 2000), p. 2.

[6]. William A. Owens, *Lifting the Fog of War* (New York: Farrar Straus and Giroux, 2000).

[7]. Clausewitz popularized the notion of ambiguity as a central component of war with terms such as the "friction" and the "fog" of war. Carl von Clausewitz, *On War*, Michael Howard and Peter Paret, trans. and eds. (Princeton: Princeton University Press, 1989), pp. 75, 89. See also Christopher Bassford, *Clausewitz in English: The Reception of Clausewitz in Britain and America, 1815-1945* (Oxford: Oxford University Press, 1995); Antulio J. Echevarria, II, *After Clausewitz: German Military Thinkers Before the Great War* (Lawrence: University of Kansas Press, 2001).

[8]. Michael Ignatieff, *Virtual War: Kosovo and Beyond* (New York: Picador, 2001).

[9]. See footnote 4. A series of collected essays published by the German Historical Institute provides a valuable source for gauging the debate over the total war concept and relationship between military and social, economic, and political change. See Roger Chickering and Stig Forster, eds., *Great War, Total War: Combat and Mobilization on the Western Front, 1914-1918* (Cambridge: Cambridge University Press, 2000); Roger Chickering and Stig Forster, eds., *Anticipating Total War: The German and American Experiences, 1871-1914* (Cambridge: Cambridge University Press, 1999); Stig Forster and Jorg Nagler, eds., *On the Road to Total War: The American Civil War and the German Wars of Unification, 1861-1871* (Cambridge: Cambridge University Press, 1997).

[10]. Keith Yates. *Flawed Victory: Jutland, 1916* (Annapolis: Naval Institute Press, 2000).

[11]. David Zabecki, *Steel Wind: Colonel Georg Bruchmuller and the Birth of Modern Artillery* (Westport, Conn.: Praeger, 1994).

[12]. The German military's new thinking on modern mechanized warfare was captured in its 1933 doctrinal manual, *Truppenführung*. This manual is now available in an English translation. See Bruce Condell and David T. Zabecki, eds., *On the German Art of War: Truppenführung* (Boulder, Colo.: Lynne Rienner, 2001). See also Robert M. Citino, *The Path to Blitzkrieg: Doctrine and*

Training in the German Army, 1920-1939 (Boulder, Colo.: Lynne Rienner, 1999).

[13]. John Arquilla and David Ronfeldt, eds., *Networks and Netwars: The Future of Terror, Crime, and Militancy* (Santa Monica: RAND, 2001).

[14]. See, for example, John Kelly Thornton, *Warfare in Atlantic Africa, 1500-1800* (London: Routledge, 2000).

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Citation: James Carafano. Review of Knox, MacGregor; Murray, Williamson, eds. *The Dynamics of Military Revolution, 1300-2050*. H-Diplo, H-Net Reviews. August, 2002.

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