

HOW REVOLUTIONARY IS THE REVOLUTION IN MILITARY AFFAIRS?*

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"First safe sex, now safe war"
(Jean Baudrillard)

"Military organizations are societies built around and upon the prevailing weapons systems. Intuitively and quite correctly the military man feels that a change in weapon portends a change in the arrangements in his society."

(Elting Morison, *Men, Machines, and Modern Times*)

The term "revolution" implies a rapid, significant and usually unpredictable change, "a fundamental departure from any previous historical pattern".¹ In other words, a new situation is profoundly different from the former conditions that have been challenged and subverted. Every human-based activity has undergone development which might be described as "revolutionary". Revolution by its nature undermines a *status quo*. It genuinely reshapes human life in such a way that it no longer looks as it used to. The word "revolution" could be, and often has been, easily overused to describe changes that actually do not represent any crucial transformation.² In many cases it might be preferable to speak instead about progress. It seems valid then to pose the question "What is distinctive of the current Revolution in Military Affairs?" (RMA). Is it feasible to deliberate about a "military revolution" (MR) without referring to it in a broader socio-political context?

It appears that in the scientific, technological or political realms it is easier than in the field of military affairs to qualify some events or developments as revolutionary. When we define war as a socio-political phenomenon, then the problem arises of how to measure changes in a way it is waged. Therefore, it is much more difficult to decide whether these developments constitute a "real" revolution, or whether they are merely improvements or innovations. The matter deserves closer scrutiny. Al-

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¹ "Revolution". In: *Encyclopedia Britannica Online*, <http://members.eb.com/bol/topic?eu=64975&sctn=1>

² "... we have used the word *revolution* as a commonplace – as an accent, a spicing for product debuts: television was a revolution, the atomic bomb was a revolution, and so was a jet plane, then the VCR, Dolby sound, and the microwave oven." Michael Vlahos, *The War after Byte City*. In: *The Information Revolution and National Security. Dimensions and Directions*, ed. Stuart J.D. Schwartzstein, Washington, The Center for Strategic & International Studies, 1996, p. 90.

though terms are often deceiving, it is useful to distinguish between a “military-technical revolution” and a “revolution in military affairs”. While the former refers to purely technical innovations in weaponry, the latter covers a wider range of changes not only in a way war is conducted. It is significant that the term “RMA” has taken place of the phrase “military-technical revolution”, which originated in the 1980s Soviet military thinking.³ An RMA not only influences tactics, doctrine, operational concepts and organization of military forces, but it is also linked with farther-reaching socio-political changes. Despite the fact that technological innovations are essential for RMA, they alone are not sufficient. Transformations in other areas, especially in military organization, are necessary because technology itself does not make for military revolution.⁴ Examples of the previous MRs give the best support for this thesis.

Different writers mark various historical events and innovations, calling them “military revolutions”. There is no agreement about how many MRs have been and when they appeared. That is largely because there are no clear criteria of how to measure these changes. Michael Roberts claims that there was a single revolution between 1560 and 1660 which gave birth to modern warfare.⁵ If his intention was to generate a debate among military historians, he was more than successful. Since his lecture in 1955, numerous studies on the MRs have proliferated, undermining Roberts’ original thesis of a single “military revolution”.⁶ There is no need to discuss the debate in detail. For the purpose of this paper it is sufficient to note that its effects has been threefold. Firstly, there was more than one single “military revolution”, which Roberts proposed. Secondly, various typologies are possible and acceptable since there are no agreed criteria and because the concept of revolution is a flexible one. Thirdly, the analyses of technical innovations in weaponry have been linked

³ The concept is mainly associated with Marshal Nikolai Ogarkov, Soviet General Staff (1977–1984), and with General Akhmetovich Gareev. See: Jacob W. Kipp, *Confronting the RMA in Russia*, Military Review, June–July 1997, Foreign Military Studies Office, <http://call.army.mil/call/fmsopubs/issues/confront.htm>; Dan Goure, *Is There a Military-Technical Revolution in America's Future?*, The Washington Quarterly, Vol. 64, No. 4, Autumn 1993, p. 178; Eliot A. Cohen, *A Revolution in Warfare*, Foreign Affairs, Vol. 75, No. 2, March/April 1996, p. 39.

⁴ That is commonly recognized among military thinkers. See: Dan Goure, op. cit., pp. 177, 178; Williamson Murray, *Thinking About Revolutions in Military Affairs*, Joint Forces Quarterly, Summer 1997, pp. 73, 76; Williamson Murray, *Innovation: Past and Future*. In: *Military Innovation in the Interwar Period*, ed. by Williamson Murray and Allan R. Millett, Cambridge, MA, Cambridge University Press, 1995, pp. 305–312; Jeffrey J. Cooper, *Another View of the Revolution in Military Affairs*. In: *In Athena's Camp: Preparing For Conflict In the Information Age*, ed. by John Arquilla and David Ronfeldt, Santa Monica, Rand Corporation, 1997, p. 99.

⁵ It consisted of four sets of changes in different fields. They were namely: revolution in tactics (emergence of standing armies and their increase in size), revolution in strategy (return from siege to decisive battle), revolution in the relations between the state and army (increase of the authority of the state, growth of bureaucracy, new ways of financing war) and the impact of war on society. Michael Roberts, *The Military Revolution, 1560–1660*. In: *The Military Revolution Debate. Readings on the Military Transformation of Early Modern Europe*, ed. by Clifford J. Rogers, Boulder–San Francisco–Oxford, Westview Press, 1995, pp. 13–35.

⁶ See: *The Military Revolution Debate. Readings on the Military Transformation of Early Modern Europe*, ed. by Clifford J. Rogers, Boulder–San Francisco–Oxford, Westview Press, 1995.

with their impact not only on warfare but also, and most significantly, on entire societies. Aside from a detailed examination of historical examples of MRs and the debate about their nature, some turning points in the history of the Western way of warfare can be pointed out.⁷

What is characteristic of the previous RMAs is that they were not really sudden. Their impacts and effects could not have been observed immediately. It takes some time for a new technology to be accommodated into organizational structures, tactics, operations, doctrines and strategies. Nuclear weapons, for example, did not in fact revolutionize military affairs until the thermonuclear bomb appeared in 1952 and until the means of delivery, the ballistic missiles, were deployed in the late 1950s. What is more, nuclear weapons were adapted into strategy and defense policy as late as the mid-1950s.⁸ It took almost a decade until they shaped strategy. This feature of the RMAs made some people speak of evolution rather than revolution in military affairs. Williamson Murray comes to the conclusion that "as the case studies suggest, revolutionary innovations are the exception" and they "take place over extended periods during which tactics, equipment, and conceptions change on a gradual basis."⁹ The conceptual framework suggested by Clifford Rogers is intellectually quite attractive. Faced with the problem that "Each of the component revolutions mentioned above [between 1300 and 1800] involved a certain amount of slow, steady evolution both before and after the 'revolutionary' period", he proposes the conception of punctuated equilibrium evolution. Borrowed from the theory of the formation of species it says that "evolution proceeded by short bursts of rapid change interspersed with long periods of near stasis rather than constant, slow alteration."¹⁰ This approach seems to explain military innovations quite well; at the same time, however, it calls into questions the concept of MR. Shall we then speak of revolution or about evolution, only from time to time interrupted by discontinuity? We should bear in mind all these dilemmas arising from the notion of the RMA

⁷ For example: gunpowder (14th century); artillery (15th century); the state's ability to mobilize large standing armies (16th–17th centuries); mass armies based on conscription (the aftermath of the French Revolution); the steam engine, railroad and telegraph (the Industrial Revolutions); the machine gun, carrier aviation, amphibious assaults and submarine warfare (WWI); nuclear weapons (1945). Based on: E. A. Cohen, op. cit., pp. 41–42, 50; James Adams, *The Next World War. The Warriors and Weapons of the New Battlefields in Cyberspace*, London, Arrow, 1999, p. 55; Williamson Murray, *Thinking About Revolutions in Military Affairs*, pp. 70–72; Kapil Kak, *Revolution in Military Affairs – An Appraisal*, <http://www.idsa-india.org/an-apr-01.html>; Christopher Gunther, *You Call This a Revolution?*, Foreign Service Journal, September 1998, <http://www.afsa.org/fsj/sep98/sep98focus1.html>

⁸ Great Britain was the first country that used deterrence the element of its defense and security policies. It integrated nuclear weapons to its strategy earlier than the United States. See: R. N. Rosecrance, *Defense of the Realm. British Strategy in the Nuclear Epoch*, New York–London, Columbia University Press, 1968, pp. 20–21; Alan Macmillan and John Baylis, *A Reassessment of the British Global Strategy Paper of 1952*, Nuclear History Program, Occasional Paper, No. 8, Maryland, Center for International and Security Studies, 1994.

⁹ W. Murray, *Innovation: Past and Future*, pp. 306, 309.

¹⁰ Clifford J. Rogers, *The Military Revolutions of the Hundred Years War*. In: *The Military Revolution Debate*, p. 77.

when talking about the present one, if we do not want to address only part of the problem.

The current RMA has been underway since the 1980s. It consists of a few components. The first element is the information revolution with its military and non-military applications. The second one is high-tech conventional weaponry. And the third one is views of warfare and the way war is perceived. If the first constituent is associated with broadly defined scientific-technological developments and their impact on every day life, the second represents purely technical innovations, whereas the third refers to the socio-political sphere. Despite this basic classification, all the mentioned dimensions are inseparable and overlapping.

Computer, microchip and telecommunication innovations led to the "information revolution" with information understood not only as a message but also as a medium (system).¹¹ It is said that the contemporary RMA is information-driven, that changes in warfare are logical consequences of the transformation of societies which have become inherently information-based. In this context Admiral William Owens has come up with the idea of the "system of systems" characterized as the ability to gather, process, store and transmit an enormous amount of information.¹² This real-time knowledge would produce a "situation awareness" or, in other words, a "dominant battleship knowledge". Thus, one would know almost everything about one's enemy's movements, and hence have the ability to predict and counteract its actions. This would not only impose changes in equipment. It would also reshape both the way operations are conducted and the strategy as the objectives would have to be redefined. The information revolution operates on different levels and covers such elements as, for instance: satellite systems, Global Positioning System (identifying one's location in the space), warning and control systems, C⁴ISR (command, control, communications, computers, intelligence, surveillance and reconnaissance) and sensors. The information revolution also gave birth to the idea of Information Warfare (IW), a new type of war, defined by Gen. Colin Powell as

"actions taken to achieve information superiority by affecting adversary information, information-based processes, information systems, and computer-based networks while defending one's own information, information-based processes, information systems, and computer-based networks."¹³

Hence, information becomes both the weapon and the target.

The 1991 Gulf War represented the application of high technology to war. New types of weapons like precision laser guided bombs or Unmanned Aerial Vehicles (like Predator) were used in the battlefield for the first time. The deployment of new equipment was backed up by C⁴ISR capabilities. Quick air strikes paralyzed Iraqi military infrastructure. The war created a new concept – of "standoff". High-

¹¹ On the different views of information see: John Arquilla and David Ronfeldt, *Information, Power, and Grand Strategy: In Athena's Camp*. In: *The Information Revolution and National Security*, pp. 133–138.

¹² Joseph S. Nye, Jr., and William A. Owens, *America's Information Edge*, Foreign Affairs, Vol. 75, No. 2, March/April 1996, pp. 20–35; William A. Owens, *Foreword*. In: *The Information Revolution and National Security*, p. X.

¹³ Quoted in: J. Adams, op. cit., p. 56.

precision, deep-strike long-range weapons made it possible to move soldiers far away from targets. War became somewhat remote controlled.

Given that the present RMA is purely an American revolution, it is important what the American public opinion's attitude towards war is. This psycho-sociological factor makes for the third dimension of the revolution. Political leaders are under pressure of public opinion that does not permit the US's engagement in a war which would result in the loss of American lives. This axiom – the intolerance of casualties – is extremely powerful because it is directly connected with the legitimization of political actions and makes civil-military relations an important factor of the RMA. It is also the part of a wider notion in the West, which is to make war more humane. Standoff, unmanned vehicles and non-lethal weapons are used to reduce the risk to human lives and thereby to maintain public support for military involvement. "It is that drive to minimize loss of life that is going to be a primary factor of decision making in the foreseeable future" because "conflict today is judged not so much by victory or defeat but by the numbers of casualties".¹⁴ This drive for "safe war" has been well summarized by Admiral Browne: "We have an American public that will not tolerate losses, and that needs to be part of our equation."¹⁵

The changes in military affairs, which are underway, require a profound transformation of military organizations. Traditional service-oriented structures have to be replaced by inter-service cooperation. The need for "jointness" is one of the most demanding aspects of the RMA.¹⁶ It will take some time before a new military organization is formed. The joint-force doctrine will also demand less hierarchical, more horizontal, decentralized and flatter structures. Decisions based on a near-real-time "situation awareness" will have to be made quickly and by lower unit-levels. Operations will not be strictly pre-planned; they will have to adapt with a much greater flexibility than before to the changing battlefield conditions.¹⁷ These transformations will undoubtedly require some time and will be gradual rather than revolutionary. The already existing military organizations, which by their nature are conservative, will try to delay the process of democratization and inter-service "jointness". Commenting on this aspect of the RMA, Edward Luttwak writes that

"So far, however, it would be more accurate to speak of a revolt rather than a revolution (the initials RMA fortunately remain the same) because the protectors of the established order – the existing armed forces of classic form, still centred on their hallowed platforms – are resisting change very effectively."¹⁸

It is possible to make some comparisons between the "nuclear revolution" and the contemporary RMA. Once again the first-strike capability becomes crucial or even decisive for the outcome of war. Quick and precision strikes, aiming to destroy the enemy's information, command and communication as well as key civilian and

¹⁴ Ibid., pp. 335, 333.

¹⁵ Quoted in: Ibid., p. 132.

¹⁶ E.A. Cohen, op. cit., p. 47; Paul Dibb, *The Revolution in Military Affairs and Asian Security*, Survival, Vol. 39, No. 4, Winter, 1997–1998, pp. 98, 100, 112.

¹⁷ Norman C. Davis, *An Information-Based Revolution in Military Affairs*. In: *In Athena's Camp*, pp. 88–89, 93.

¹⁸ Edward N. Luttwak, *From Vietnam to Desert Fox: Civil-Military Relations in Modern Democracies*, Survival, Vol. 41, No. 1, Spring 1999, p. 108.

industrial infrastructure will shape the future war if not be war itself. Similarly, the first-strike capability was at the real heart of credible nuclear deterrence. To some extent both the information- and nuclear-based RMAs put conventional force structures at risk. Although it was predicted that conventional forces would become obsolete in a nuclear age, paradoxically there has been a constant development in the conventional means of warfare. These improvements prepared the ground for the current RMA's high-technology weaponry. The main difference between the two RMAs is that nuclear war was unfightable while the IW is very much fightable as long as there is no Information Warfare equivalent of MAD (Mutual Assured Destruction).¹⁹ The nuclear RMA was a "single-system revolution" – a product of dramatic developments of science and technology,²⁰ whereas the present RMA is a combination of a few interrelated systems, it is an "integrated system revolution".²¹ The opinion that "just as nuclear dominance was the key to coalition leadership in the old era, information dominance will be the key in the information age" will have to wait for its practical verification.²²

It can be claimed that the current RMA is "revolutionary" in the sense that it is now extremely closely linked with the civil sector. It is largely dependent on commercial telecommunication infrastructure and on developments in microelectronics. What is more, this dependence is still increasing. The RMA has its origins in the civilian world. The information revolution has transformed, first and foremost, economics and social life. In the second instance it was the military sector that has been affected. The civilian sphere was, and still is, leading the way and the military benefits from that, but probably with some exceptions, the Internet being one of them. The opposite was true for the previous RMAs but nowadays it is industry that is driving change not the Pentagon.²³

"The flow of technology is from civilian R&D to military, not the reverse, as had been the case for the first decades following World War II."²⁴

Information systems have come from commercial companies and it is significant that about 95% of military communications travel over public networks.²⁵ The non-defense sector is well ahead of the military and the Pentagon has become just an-

¹⁹ Martin C. Libicki, *Information and Nuclear RMAs Compared*, Institute for National Strategic Studies, Strategic Studies Forum, No. 82, July 1996,

<http://www.ndu.edu/inss/strforum/forum82.html>

²⁰ The claim, however, that the nuclear RMA was entirely technological does not hold true simply because it misses some important points. Although outside the superpowers competition nuclear weapons have hardly changed the nature of war, their impact on strategy, international relations and their psychological effect on societies was enormous.

²¹ Jeffrey McKittrick, James Blackwell, Fred Littlepage, George Kraus, Richard Blanchfield, Dale Hill, *The Battlefield of the Future*. In: *The Revolution in Military Affairs*, Chapter 3, <http://www.airpower.maxwell.af.mil/airchronicles/battle/chp3.html>

²² J.S. Nye, Jr., and W.A. Owens, op. cit., p. 27.

²³ J. Adams, op. cit., p. 156.

²⁴ Stuart J. Schwartzstein, *Introduction*. In: *The Information Revolution and National Security*, p. XVIII.

²⁵ Gary Stix, *Fighting Future Wars*, Scientific American, December 1995, p. 77.

other customer. The trend of privatizing some areas of military affairs and the tendency of contracting-out also strengthens this dependency.²⁶

Technology apart, there is something else that makes the American RMA "revolutionary". Despite American technological superiority in military affairs, the US seems to be vulnerable as never before and that, paradoxically, is because of its supremacy in the "information revolution". The extremely close interdependence between military and civil sectors and the dependence of the former on the latter contribute to this vulnerability. A coin has two sides. The problem is also linked with the dependence of American society on computers, telecommunication and network systems. That reliance on information makes the society greatly susceptible to easy manipulation. That issue is badly in need of attention, seeing that most of these systems can be brought to a standstill by paralyzing or destroying the chip which is at the heart of all of them. Jeffrey R. Cooper calls this a "mutual interdependence of vulnerabilities".²⁷ Civil and military sectors are so closely interrelated that the understanding of economic and civilian infrastructures extends to national security. He suggests that such a strong interconnection "may prove to be a Faustian bargain". If it comes to the IW, the most strategic systems (telecommunication, communication, finance, power supplies, etc.) of the state would be almost defenseless. Does it make the RMA really revolutionary? The nuclear revolution proved that the more powerful the weapon, the less useful it is. The American RMA appears to indicate that the greater the country's edge in the information age, the more vulnerable it is to attack. The information revolution, then, gives us the impression of being a double-edged sword. It is worth at this point quoting James Adams:

"The countries that have the most effective IW capabilities are also the most vulnerable to attack – uniquely in the history of the world, a single individual armed with just a computer and a modem can literally hold America to ransom."²⁸

Is it not revolutionary? But is that what all of the military thinkers mean by the "revolution in military affairs"? I doubt it.

America's dependence on computer systems and microchips is its potential Achilles heel. Threats to national security are much more likely to come not from the so-called "peer competitor" (referring mainly to Russia and China)²⁹ but rather from rogue states and non-state actors such as terrorist groups, criminal gangs, etc. These adversaries will apply an asymmetrical warfare against the United States to bypass its technological advantage in conventional weapons.³⁰ The most vulnerable to such an attack is the American civil sector. An asymmetrical adversary would attack the

²⁶ Private contractors held much of the logistics for the US operations in Haiti and Somalia. E.A. Cohen, op. cit., p. 43.

²⁷ Jeffrey R. Cooper, *Another View of Information Warfare: Conflict in the Information Age*. In: *The Information Revolution and National Security*, p. 111.

²⁸ J. Adams, op. cit., p. 4.

²⁹ Paul Bracken, *Military After Next*, Washington Quarterly, Vol. 16, Issue 4, Autumn 1993, p. 164.

³⁰ On the asymmetrical warfare: Robert David Steele, *The Asymmetric Threat: Listening to the Debate*, Joint Forces Quarterly, Autumn–Winter 1998–1999, pp. 78–84; Jonathan B. Tucker, *Asymmetric Warfare*, Forum, Summer 1999, <http://forum.ra.utk.edu/summer99/asymmetric.htm>

weakest point – the civil society. Various forms of such an attack can be listed, to mention just a few: the use of weapons of mass destruction, terrorism, psychological operations, media warfare, information warfare and sabotage.³¹ An enemy would fight not according to the Western rules of warfare but according to its own – “you fight your way, I’ll fight my way”. The National Missile Defense System will not be the cure as it will not be capable of protecting the country from the asymmetric threats. In an asymmetric war the American principle of a minimal level of casualties will work against the US. Fighting Gulf Wars is completely different than fighting Somalias. If the picture of the body of a dead American soldier being dragged through the streets of Mogadishu shown on television can lead to the sudden withdrawal of American forces (“the CNN factor”), could the RMA be of any help? It is not enough to win tactically (in the field) one must also win strategically. In the asymmetric warfare technology is not an advantage because it increases vulnerability. Again, is the RMA revolutionary because it makes the country more vulnerable for an asymmetrical attack than ever before? I guess so.

The American RMA is something more than only a “military technical revolution” but it is not yet a true and completed “revolution in military affairs”. The present RMA mirrors the changes taking place in other fields, namely in society and economics, where the compression of time and expansion of space are the main characteristic features. It seems that it is trying to catch up with deep transformations taking place in those areas. The greatest challenge for the military is to follow the alterations in the institutional systems. If the RMA is to be revolutionary, it must adopt the net-like organizational structures, decision-making and operational processes already applied in the commercial sector (in transnational corporations for example). The challenge is twofold since in the first place new technologies – both information and conventional weapons – must be implemented to military operational concepts and organizational patterns. At the same time, the developments in conventional weaponry must be merged with information capabilities, and the inter-service cooperation should be improved. For these processes time is required and changes will most probably be gradual rather than revolutionary.

Can we agree with the prediction made by Admiral William Owens, one of the declared advocates of the RMA, that “The 21st century, not the 20th, will turn out to be the period of America’s greatest preeminence”?³² Or maybe rather James Adams’ conclusion holds true that “as David proved against Goliath, strength can be beaten. America today looks uncomfortably like Goliath, arrogant in its power, armed to the teeth, ignorant of its weakness”?³³ Is the United States awaiting its Sedan or will the current RMA make the 21st century an “American Century”?³⁴

³¹ See: Joseph C. Cyrulik, *Asymmetric Warfare and the Threat to the American Homeland*, Landpower Essay Series, No. 99–98, November 1999.

³² J.S. Nye, Jr., and W.A. Owens, op. cit., p. 35.

³³ J. Adams, op. cit., p. 375.

³⁴ The term was first used by Henry Luce in his editorial assertion in the Life magazine, 17 February 1941. John Lewis Gaddis, *The United States and the End of the Cold War. Implications, Reconsiderations, Provocations*, New York–Oxford, Oxford University Press, 1992, p. 3, passim 3.

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