Dima P. Adamsky

American Strategic Culture and the US Revolution in Military Affairs
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American Strategic Culture and the US Revolution in Military Affairs

This monograph will trace the impact of American strategic culture on the approach of the US defense community to the revolution in military affairs (RMA). After the introduction, the discussion will be divided into three parts: the concept of revolutions in military affairs and theories of strategic culture will be discussed in the first part of this monograph; the second part will concentrate on the intellectual history of the American RMA; the general sources and the main traits of American strategic culture will be addressed in the third part; the conclusion will integrate the previous two parts, and will use the characteristics of American strategic culture to account for the conduct of the US defense community with regard to the RMA.

Keywords: strategic culture, revolution in military affairs, Soviet military-technical revolution, US defense transformation, high-technology warfare
Chapter 1

The RMA and the Cultural Approach to Security Studies

Revolution in Military Affairs

Revolution in military affairs is the term used for a radical military innovation in which new organizational structures together with novel force deployment methods, usually\(^1\) but not always\(^2\) driven by technology, change the conduct of warfare. Indeed, most military revolutions have arisen from technological advances. However, RMAs are driven by more than breakthroughs in technology, which in themselves do not guarantee successful innovation.

Technology only sets the parameters of the possible and creates the potential for military revolution. What indeed produces an actual innovation is the extent to which militaries recognize and exploit the opportunities inherent in new tools of war, through organizational structures and deployment of force. It was how people responded to technology that produced seismic shifts in warfare,

argues Max Boots, who has inquired into the nature of the military revolutions since 1500.\(^3\) While the technological component is

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1 For an overview of the RMA, see the *Project of Defense Alternatives* web site. The famous, initial, and the most widely used definition was offered by Andrew Krepinevich in “Cavalry to Computer: the pattern of Military Revolutions”, *National Interest*, no. 37 (fall 1994). Some scholars simply define it as “a radical change in the conduct and character of war.” Colin Gray, *Recognizing and Understanding Revolutionary Change in Warfare* (Carlisle: US Army War College, 2006), p. vi.
often an important initial condition, a true revolution depends on a confluence between weaponry, a concept of operations, organization and the vision of future war.4

Anyone who anticipates the RMA and transforms his military forces accordingly will significantly enhance military effectiveness.5 A delay, consequently, will have the reverse effect. Thus, the earlier defense experts recognize and understand the discontinuity in the nature of war, the better. For the most part RMAs have been recognized only after the fact.6 However there were cases in history when, early on, the significance of unfolding RMAs was recognized.7 The ability to diagnose and understand the discontinuity in the nature of war – the rapid change in ways and means of fighting – is probably the most critical aspect of defense management. Imagining the future enables defense managers to embark in real time on crafting what Stephen Rosen calls the “new theory of victory”.8

Since the early 1990s, the US and other world militaries have come to understand that the most dramatic revolution in warfare since the introduction of nuclear weapons is underway. In mechanical terms, the information-technology revolution in military affairs (IT-RMA) integrated long-range, precision-guided munitions, C4I (command, control, communications, computers and information) and RSTA (reconnaissance, surveillance, targeting acquisition) in a form that completely changed the combat environment and altered the way people think about the aims and methods of conventional warfare. In terms of basic capabilities, the IT-RMA entails the ability to strike with great accuracy, irrespective of range; the ability to penetrate defensive barriers using stealth technology and unmanned warfare; and the ability to move information rapidly across a joint battle network and exploit the effects of increased joint force integration.9

In terms of organizational structures and concepts of operations, classical patterns of advancing along fronts with discernible lines and

7 Gray, Recognizing and Understanding Revolutionary Change, p. 3.
rear areas have disappeared; the number of platforms has become far less important than networks and communications; military planning, under the umbrella concept of “effect-based operations”, aims at defined effects rather than attrition of enemy forces or occupation of territory; instead of massive forces, precise fire is maneuvered; the sensor-to-shooter loops have been shortened considerably; the role of standoff and airpower capabilities has increased at the expense of heavy ground formations; a far smaller, lighter and more mobile force can operate at a greater range and with greater precision and lethality than at any time before in human history.10

The roots of the IT-RMA can be traced to the mid-1970s, when the West capitalized on scientific-technological developments to neutralize the threat posed by Soviet second echelons. However, the cultivation of the technological seeds of the American RMA preceded the maturation of the conceptual ones. Although it was the US that was laying the technological groundwork for the RMA, Soviet, rather than American military theorists, were the first to argue that the new range of technological innovations constituted a fundamental discontinuity in the nature of war, which they dubbed the military-technical revolution. The Soviet military had a fuller comprehension of the revolutionary impact that the Air-Land Battle (ALB) and Follow-On Forces Attack (FOFA) arsenals would have on the future battlefield than did the US military.11 About a decade later, this fundamental Soviet approach to the transformations in military affairs was analyzed, adapted and adopted by the US, and designated the RMA. In other words, the US developed technology and weaponry for about a decade without realizing their revolutionary implications. No attempt to re-conceptualize the existing paradigm about the nature of warfare in futuristic terms was made by the US in those years. Not until Andrew Marshall and his colleagues introduced the notion of the RMA did this conceptual innovation reach the consciousness of the American military and defense establishment.12


The 1990 Gulf War offered for the first time a glimpse of the revolutionary potential embodied in these various combat capabilities provided by information technology. Nearly a decade later, in 1999, Allied operations in Kosovo reinforced the value of what is known as information warfare for future military campaigns. Operations in Afghanistan and Iraq in 2001 and 2003 provided additional evidence that a revolution in conventional warfare was well underway. Several scholars of strategic studies, most notably Stephen Biddle, seriously challenge this assumption. Although this is an important discussion, this monograph deliberately refrains from analyzing the question of whether the process described actually represents revolutionary discontinuity in modern warfare.

The Impact of Cultural Factors on Military Innovations

Scholars of revolutions in military affairs maintain that innovation depends as much upon developing or gaining access to the requisite technologies, as on restructuring concepts and organizations. In the last two processes social and cultural factors are critical. Consequently, a body of literature about the impact of cultural factors on military innovations provides the most relevant answers to the questions posed in this monograph.

Chronologically, “strategic culture” literature came in three waves. The first generation of scholarship emerged in the late 1970s to early 1980s and focused mainly on the link between national political and military cultures, and the strategic choices that countries made. The literature argued that a deeply rooted set of beliefs and a nation’s formative historical experiences create its distinct mode of strategic thinking and particular attitude toward security affairs. Scholars started to address differences in strategic behavior as products of different cultural contexts. The notion that different security communities might think in different ways about the same strategic

matters began to gain acceptance. Empirically, the literature concentrated mostly on the distinctive national styles in the superpowers’ grand-strategy making and on the cultural roots of the nuclear doctrines of the USA and the USSR. The discussion about the cultural impact on national security policy was introduced to the International Relations (IR) under the rubric of “strategic culture”.  

The second wave of literature came in the early 1990s. The proponents of the theory sought to prove through a variety of case studies that strategic culture constituted the milieu within which strategy was debated. They presented strategic culture as an independent determinate of security policy patterns and consequently as an independent variable for research. Scholars argued that if not ultimately driven by the parameters of strategic culture, national security policy had deep cultural underpinnings. The second wave is also famous for its methodological debates. The skeptics had asserted that the operational definition of strategic culture, as had been offered by theoretical pioneers of the first generation, was methodologically problematic. The critics claimed that analytical models of strategic culture were frequently tautological, because they did not provide a clear separation of dependent and independent variables. The literature of this period sought methodology for identifying distinctive national cultures, characters and styles and thus make the discipline less opaque, vague and simplistic.

The third generation of scholarship is related to the mid-1990s and was brought on the wave of rising constructivism. Consequently, after having fallen into disfavor around the end of the Cold War, the-

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Theoretical work on the cultural foundations of strategic behavior picked up again significantly. The constructivist research program, which emphasized the ideational construction of international politics, naturally became the intellectual ally of the proponents of strategic culture theories. Constructivists saw state identities and interests as socially constructed by knowledgeable practice. According to the scholars of constructivism, subjective normative beliefs about the world define actors, their situations, and the possibilities of action. Constructivist research devoted particular attention to identity formation, the organizational process, history, tradition, and culture, and provided a far more complex and nuanced picture of international security. It took researchers of security studies deeper within states, military organizations, and the process of producing new technology, to account for the role of culture and norms. Constructivism views culture as a synthesis of meaning that governs perceptions, communications, and actions, in both the short and long-term. Ideational meanings define the situation, articulate motives, and formulate a strategy for success. Though the tendency to address the impact of domestic politics on foreign policy was already familiar to the academic world, constructivists were the first to frame it as a coherent paradigm to counterbalance the traditional neorealist approach to security studies. Constructivism laid the theoretical and methodological groundwork for scholars interested in a cultural approach to international security studies.


In the last decade, a growing interest in ideational explanations of states’ strategic behavior resulted in numerous studies of a variety of empirical and theoretical topics. These works, conducted under the umbrella concept of “strategic culture”, feature different levels of analysis, but all appeal to socially, culturally and ideationally independent variables to explain strategic and military behavior. A number of proponents of the cultural approach to IR sought to inquire into the ideational and cultural foundations of states’ foreign and defense policy. They concentrated on the interrelation between norms, culture and strategic behavior and shared a theoretical assumption characterized by Colin Gray: “the security community is likely to think and behave in ways that are influenced by what it has taught itself about itself.”

Other scholars focus on domestic social structures to explain particular national styles in strategic affairs. The renewed interest in organizational analysis in security studies led to an appreciation of the inter-state level and concretely to focusing on “figuring out the fighting organizations.” Scholars paid considerable attention to the linkage between the nature of the organization and the military innovation it produced. Still at the intrastate level, certain scholars tended to concentrate less on the impact of organizational interests than on the influence ideas spread on generating military power. The constructivist approach attempts to understand how the cultural identities of specific nations shape military doctrines. Attention was also paid to the intellectual dynamics and adaptive learning between
institutions from different states which influence the preferred paths of strategic behavior.  

This monograph further elaborates on the most recent scholarly definition of "strategic culture", which views it as a set of shared formal and informal beliefs, assumptions, and modes of behavior, derived from common experiences and accepted narratives (both oral and written), that shape collective identity and relationships to other groups, and which determine appropriate ends and means for achieving security objectives.

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Chapter 2

An American Revolution in Military Affairs

Technological, Doctrinal and Conceptual Preconditions of the American RMA

In the mid-1970s the US army became cognizant of the Soviet technique of the echelonment of forces combined with a high-speed offensive, and realized that in their current state, their defenses could not stand up to the challenge. The ALB and FOFA concepts grew out of this fear of Soviet conventional superiority afforded by the echelonment technique. The West sought a remedy and found it in emerging technologies. Since the mid-1970s, highly advanced technological achievements particularly in the field of microprocessors, computers, lasers and electronics, had enabled the production of “smart weapons” – an assortment of conventional munitions that were precision-guided to targets – even at a stand-off over the horizon ranges. The combination of range and accuracy resulted in a new warfare mission: to strike deep against enemy offensive follow-on forces. Developments in weapons technology and the evolution of thought about future war in Europe led to similar innovations in the US and NATO. Both ALB and FOFA rested on the premise that follow-on echelons of Soviet ground forces had to be slowed or stopped before arriving at the line of contact. Attacking the second echelons, disrupting their movement or destroying them, and degrading their command-and-control, became the overriding aim of US tactics and weapons development.29

According to William Owens, a technological prequel to the American RMA should be associated with the Pentagon officials who began in the late 1970s to think about the application of technology in military affairs and to formulate the “offset strategy”.30 Secretary of Defense Harold Brown’s main focus was to devise a program by which the US and NATO allies could use technological superiority to neutralize the
overwhelming advantage in the size of their conventional forces that the Soviet Union and its fellow Warsaw Pact members had over NATO forces in Europe. William Perry, Undersecretary of Defense for Research and Engineering, who was responsible for the development of the capabilities for the “offset option”, stated in 1978:

Precision-guided weapons, I believe, have the potential for revolutionizing warfare. More importantly, if we effectively exploit the lead we have in this field, we can greatly enhance our ability to deter war without having to compete tank for tank, missile for missile, with the Soviets. We will effectively shift the competition to a technological area where we have a fundamental long term advantage [my emphasis].

Although in retrospect, Perry claimed that the offset strategy was more than just a plan to exploit high technology for its own sake, the primary objective of the defense establishment was to use “high technology” to build better weaponry systems than those of the Soviet Union.

The offset strategy was pursued by five administrations during the 1970s and 1980s. As Tomes indicates, the means of precision strike, intelligence and communication - the capabilities on which the concepts of the American RMA would later be built - matured technologically in various projects starting in the late 1970s of the Defense Advanced Research Project Agency (DARPA). The DARPA allocated its budget to give qualitative advantages to American forces to offset the quantitative superiority the Soviet forces enjoyed in Europe.

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32 “The objective of our precision guided weapon systems to give us the following capabilities: to be able to see all high value targets on the battlefield at any time; to be able to make a direct hit on any targets we can see; and to be able to destroy any target we can hit.” In William Perry’s Testimony to the US Senate Armed Services Committee, Hearing on DOD Appropriations for FY1977, in Vickers and Martinage, The Revolution in War, pp. 8–9; also see: Owens, Lifting the Fog Of War, p. 81.

33 Ibid.
of the core technological focuses which shaped research, development and production efforts were: the families of land-, air-, and sea-launched precision-guided and stand-off weapons; command-and-control and automated reconnaissance and target acquisition projects; anti-armor weapons; navigation and guidance devices; stealth technology; unmanned aerial vehicles. In 1978 DARPA integrated research and development of the above mentioned capabilities under one unified project entitled "Assault Breaker". Since the 1980s, the project had also become known as the "Smart Weapons Program". Robert Tomes convincingly defines this period of capabilities developing as the "formation" stage of the RMA.

It is important to state however, that DARPA projects were still far from any conceptual revolution. For the most part, the defense community treated the emerging capabilities as a multiplier of the effectiveness of the existing force, and did not deduce from them any revolutionary implications with regard to the concept of operations, organizational structures or the nature of war in general. Without a deeper understanding of the operational and organizational consequences of the new weaponry, the mere existence of smart weapons and technologies would not produce the revolution in military affairs. Moreover, new weapons systems were produced in compliance with a very mechanical logic - to ensure that the United States was not left behind in the area of new technology. It was not the futuristic vision of military thought that was the driving force behind the innovations, but a linear arms-race logic à la vis-à-vis the Soviet adversary. The offset strategy certainly reflected an

35 Tomes, Military Innovation and the Origins ..., pp. 154–165.
American way of looking at the world and coping with its problems through its typical way of war. Seeking technological answers to the operational questions of the Central Front reflected a cultural affinity for science and technology. As in many other cases, the challenges to national interests were leveraged by technology.\textsuperscript{41}

Although ALB laid down the technological and the doctrinal fundamentals of the future American RMA,\textsuperscript{42} its more important contribution, however, was probably the unprecedented introduction of the operational perspective to American military thought, or what Shimon Naveh defines as the emergence of “operational cognition”.\textsuperscript{43} In his works on military history, John Erickson convincingly claims that the recognition of the operational level is a requirement in order to “think big” about war. To him, operational art is a means of accommodating technological change to produce new warfare concepts.\textsuperscript{44} Consequently, the introduction of an operational perspective became the conceptual precondition for the American RMA.

There tends to be agreement among scholars that American receptivity to operational thinking in the late 1970s was promoted by the poor performance of the US army in Vietnam.\textsuperscript{45} Not before the early 1980s, as Lock Pullan shows in his study, did the US armed forces start to make the conceptual leap over to the operation level of thinking, when they embarked on the ALB doctrine.\textsuperscript{46} During this “reawakening of American military thought, the operational level of war became a key focus of study and an important consideration in defense planning”.\textsuperscript{47} In addition to other sources of inspiration,\textsuperscript{48} Soviet operational theories

\textsuperscript{41} Tomes, Military Innovation and the Origins …, p. 323.
\textsuperscript{42} Ibid., pp. 242, 297 (chps. 4–5); Van Atta, Nunn, and Cook, pp. iv–41;
\textsuperscript{43} Naveh, In Pursuit.
\textsuperscript{46} Lock-Pullan, US Intervention Policy …
\textsuperscript{47} Tomes, Military Innovation and the Origins …, pp. 18, 13, 16, 255–256; According to Naveh, this rediscovery of the campaign, the orchestration of theater military activities and planning conventional warfare at the operational level, led to a renaissance in American military thought. Naveh, In Pursuit, pp. 105, 126, 128; Lieutenant General L.D. Holder, deputy commander of the US TRADOC, saw the adoption of operational art as the most important change in army doctrine since World War II. L.D. Holder, “A New Day for Operational Art”, in Operational Level of War – Its Art, ed. R.L. Allen (Carlisle Barracks: US Army War College, 1985).
stimulated more sophisticated and systematic thinking by American theoreticians about the nature of battlefield integration and extension. ALB mirrored many of the developments of Soviet operational theory since the 1920s.49 This emulation was so apparent that, according to John Erickson, “Generals Svechin and Isserson and Marshall Tukhachevskii, would at once be impressed and flattered, sufficiently so even to overlook the protracted intrusion upon their copyright”.50

An operational corpus of knowledge facilitates an intellectual climate suitable for systematic thinking about changes in military affairs, indispensable for the diagnostics of any future RMA. Without a broad professional aptitude for operational thinking in the US military, the RMA concepts would have remained untapped. Robert Tomes concludes that the evolution of American military thought within the frames of the ALB, and specifically the introduction of the operational level of thinking, were central to the evolution of the American RMA.51

In the late 1970s three seeds of the future American RMA were sown. The key capabilities developed then created the technological quality which in tandem with the sophistication of American military thought and new doctrine produced the fertile soil for launching and realizing a bold defense transformation in 1990s.52 The ALB demonstrated that the level of American military thinking had become far more sophisticated as it made the transition from sequential annihilation to understanding combat in terms of the broader operational level.53 However, the offset response consisted of little more than sustaining a technological edge in the face of an armored assault by the Warsaw Pact forces.54 The corpus of operational knowledge was a solid basis for the development of new ideas, but still inadequate for generating the revolutionary visions of future war. No advances to re-conceptualize the existing paradigm of warfare were made in those years. The precision-guided missiles (PGMs) were seen as just another weapon in the military arsenal. The very community that had developed the weaponry


50 According to Erickson, the 1982 FM 100-5, by adopting the principle of equal importance of firepower and maneuver, and by distinguishing tactics from operations, along with its later move toward operational art, was clearly indebted to Soviet military thinking. John Erickson, “The Development of Soviet Military Doctrine”, in *The Origins of Contemporary Doctrine*, ed. John Gooch, occasional no. 30 (Camberley, UK, Strategic and Combat Studies Institute, 1997), pp. 106–107;


52 Owens, pp. 82–83.


54 Perry, “Desert Storm and Deterrence”.
failed to recognize its potential in future war. Although there were a few academics who foresaw the future in the early 1970s, Knox and Murray claim that the tactical emphasis of the Pentagon’s analysts had prevented them from seeing anything revolutionary in the greater accuracy of the guided munitions. To make matters worse, the phase of the technological and conceptual preconditions of the American RMA coincided with the misinterpretation by US intelligence of Soviet military-technical revolution (MTR) concepts.

The Soviet Theory of the Military-Technical Revolution

Although it was the US that was laying the technological groundwork for the RMA, Soviet, rather than American military theorists, were the first to intellectualize about its long-term consequences. In contrast to the West, which focused on the weapons’ narrow implications, the Soviets were pioneers in championing the argument that the new range of technological innovations constituted a fundamental discontinuity, which they dubbed the MTR. Beginning in the late 1970s, the Russians produced a significant number of seminal works on the MTR. They actually predated the West by almost a decade in their realization and elaboration of the revolutionary essence embodied in the military technological shifts of the US and North Atlantic Treaty Organization (NATO).

Applying the methodology of “forecasting and foreseeing”, the Soviets systematically analyzed the emerging technologies in order to identify them as either revolutionary or evolutionary with regard to future conflict. In about the mid-1970s, Soviet military forecasters be-


56 In addition to defense intellectuals and people in the US military forces, academics’ thoughtful ideas should be also mentioned. See especially the March/April issues of Survival, 1979. Edward Luttwak, “American Style of Warfare and the Military Balance”, considered the impact of PGMs on the maneuver/attrition balance; James Digby, “New technology and Super-Power Actions in Remote Contingencies”; considered the impact of new technologies on the power projection; John Mearsheimer, “Precision-Guided Munitions and Conventional Deterrence”, considered the impact of PGMs on the defense/ offence balance; see also Samuel Huntington, “Conventional Deterrence and Conventional Retaliation in Europe”. All above mentioned articles were published in International Security, vol. 8, no. 3 (1983/1984).

came engaged in theorizing about the forthcoming MTR, observing that the current phase of military development was characterized by the unprecedented emergence of qualitatively new technologies and revolutionary equipment. Under the conceptual guidance of the Chief of the General Staff Marshal Nikolai Ogarkov, Soviet military theoreticians argued that state-of-the-art conventional technology, which made it possible to “see and strike deep” with high precision on the future battlefield, and the organizational changes which had to be made to accommodate this emerging weaponry, would not constitute a phase in a process of evolutionary adaptation but a genuine discontinuity in military affairs.

The Soviet analysts carefully monitored US and NATO technological advances (moving-target indication radar, stand-off missiles and terminally guided munitions) and doctrinal innovations (ALB and FOFA). They placed these innovations in a much deeper and broader context, reflecting a far more profound grasp of the implications of these developments than the West itself possessed. The Soviets saw ALB and FOFA as much more than simply a doctrinal update or an operational threat and sought broader theoretical frames of analysis in order to describe these developments. The Soviets believed that the emerging technologies could potentially extend the depths to which future systems—both sensor technologies and means of fire—would operate. In their eyes, the ability to “see and to strike” through the entire depth, precisely and simultaneously, represented a yawning discontinuity which had significant ramifications in terms of the methods of employing corps and armies, and which would shape the nature of war in a revolutionary way.

The search for a countermeasure to the Western response to the echelonment technique provided the Soviets with a frame of reference and intellectual fuel for the debate about the MTR—a conceptualization by Soviet military theoreticians of the changing nature of warfare under the impact of emerging technologies. This intellectual fuel was much more than just a regular countermeasure to the West. Both approaches capitalized on the notion of deep battle using the latest technologies. However in terms of “military thought” the Soviet reply went further in its conceptual findings, and was more revolutionary than its Western trigger. Beginning in the late 1970s, the Soviets started to develop doctrines and concepts of operations which accompanied the introduction
of these new means of combat to the tactical, operational and strategic levels.

At the level of strategic policy management the MTR made nuclear war a less desirable option in the eyes of Soviet strategists and shifted the equilibrium toward conventional confrontation. The Soviets were convinced that conventional PGMs, in combination with the timely detection of targets, were becoming so accurate, destructive and extensive in their range, that they were approaching the effectiveness of tactical nuclear weapons. On the doctrinal level, analyzing the introduction of high-accuracy systems, and particularly the depths to which these systems were capable of operating, the Soviets declared that the line which had divided combat into offensive and defensive was increasingly disappearing, since these two forms of conducting war were making use of the same weapons to attain their operational goals.

At the operational and tactical levels, the concept of the Soviet MTR-era operations coalesced into the notion of a simultaneous, uninterrupted strike by fire and maneuver against the enemy to the entire depth of his operational formation. This conclusion resulted in the development of two interrelated operational concepts: (1) the reconnaissance strike (RUK) and fire (ROK) complexes and (2) Operational Maneuvering Groups (OMG). RUK and ROK were operational architectures which consolidated the reconnaissance systems with high precision, fire-destruction elements, linked through the command-and-control channels. The quintessence of that ability was a “system of systems” which was to consist of an integrated triad of (1) ground, air, and space reconnaissance, surveillance, and target acquisition assets; (2) direct fire elements and deep-strike weaponry; and (3) advanced command-and-control that ensured the delivery of strikes close to real time. The manifestation of the new concept on the operational level was dubbed the reconnaissance strike complex (RUK) and its tactical expression known as the reconnaissance fire complex (ROK). The OMG concept committed part of the force much earlier and deeper across the front to avoid an ALB and FOFA attack, thus executing a Soviet preventive blow to NATO’s rear. Swift infiltration of a group of armored divisions through several axes, would create a deep and dynamic center of gravity in NATO’s rear. It would turn over the defense, create operational shock to command-and-control, paralyze the enemy’s ability to react and would result in operational chaos and disorganization. OMG was a reworked version of the WWII mobile-group concept, when au-
tonomous armor formations, using stealth and mobility, infiltrated into
the enemy’s operational rear and, using shock and firepower, created
command-and-control chaos from within. At the later stage of concept
development, the coordination between ROK/ RUK and OMG result-
ed in their eventual organic unification under the term of the Recon-
naissance-Fire Group. In theory, intelligence assets, stand-off fire
capabilities and maneuvering elements of the extended battlefield
should be orchestrated as an integrated whole.

While positing the doctrinal response to Western “deep-striking”
capabilities, the Soviets went far beyond any particular doctrinal coun-
termeasure and offered a new, comprehensive theory regarding the fu-
ture battlefield under the impact of scientific-technological progress.
One may argue that the Soviet futuristic vision of operational maneu-
vering groups operating on the future battlefield as an orchestrated
whole with reconnaissance strike/fire complexes and synchronized by
command-and-control systems may be seen as the conceptual twin of
what would be termed in the American RMA a dominating maneuver
under the precision strike, executed in accordance with the principles of
network-centric warfare.58

American intelligence and the assessment of
the Soviet MTR

The American defense community’s disregard for the emerging change in
the military regimes lasted for about a decade. This inattention is partic-
ular striking in light of the wealth of information accumulated by US in-
telligence about Soviet theoretical writings on the MTR.

In its analysis of the Soviet perception of Western military capabil-
ities, US intelligence detected at a very early stage, and with a high level
of accuracy, the new direction of military thought which was evolving
in Soviet military circles. By the mid-1970s, the US had developed a
general understanding of the mechanisms of the way in which the Sovi-
eets developed their military thought; exercises to test theoretical prop-
ositions were performed and doctrinal discussions and scientific
conferences were held.59 The intelligence community translated and

58 Dima P. Adamsky, “Through the Looking Glass: The Soviet Military Technical Revo-
lution and the American Revolution in Military Affairs”, Journal of Strategic Studies,
disseminated Soviet writings on military thought, doctrine, strategy and operational concepts to make important information easily available across the services.\textsuperscript{59} The CIA had at its disposal a considerable amount of open Soviet sources which reflected the intellectual debate about the emerging MTR and its implications for the Soviet vision of future war.\textsuperscript{60} These sources, which included translations of the classified journal \textit{Voennaia Mysl” [Military Thought]}, shed a great deal of light on the term “military-technical revolution” within the context of Soviet military thinking at the time.\textsuperscript{62} In 1974, the seminal work \textit{Scientific-Technical Progress and the Revolution in Military Affairs}, was translated and disseminated by the CIA.\textsuperscript{63} In 1981, a special report was dedicated to the Soviet methodology of “forecasting military affairs”, which inquired into the nature of the paradigmatic changes in the nature of war and into the essence of the current MTR in particular.\textsuperscript{64}

From the late 1970s, US intelligence closely monitored the growing Soviet interest in microelectronics, computers and signal processing, and Moscow’s continuous efforts to acquire them by both legal and clandestine means.\textsuperscript{65} The CIA reported conspicuous Soviet concern with regard to the technological lag vis-à-vis NATO, particularly in key technologies which provided precision weaponry capabilities.\textsuperscript{66} The analysts argued that the Soviet search for technologies was a necessary starting point in the implementation phase of the MTR decreed by the Soviet Chief of Staff. They estimated that the Russians intended to use the MTR concepts, and especially PGM, in order to change the total force structure and combat potential of Soviet forces.\textsuperscript{67} The “smart” precision-guided munitions, which the Soviet military reckoned would al-


\textsuperscript{60} Deputy for National Intelligence Officers, to Assistant Chief of Staff/Intelligence, Department of the Air Force, \textit{Soviet Military Thought}, 17 May 1974; Deputy to the DCI for Collection Tasking to Director of Central intelligence, \textit{Possible Reductions of Air Force Translation of Soviet Documents}, 21 August 1978; Gen James Brown, Asst Chief of Staff, Intelligence, Department of the Air Force, to Director, Central Intelligence, \textit{USAF Efforts in the Filed of Literature Intelligence}, 21 November 1977, The U.S. National Archives and Records Administration [hereafter NAI].


ter the nature of war, relied on a variety of technologies in the field of microprocessors and computers, and consequently their acquisition became a more urgent necessity.68

On the heels of monitoring the Soviet quest for advanced technology, US intelligence soon began to arrive at the operational essence of the MTR - Soviet experimentation with reconnaissance strike and fire complexes. Discussing Soviet conventional doctrine, the CIA understood that the Soviets considered conventional weapons so accurate, lethal and destructive as to approach the potential of nuclear munitions.69 A series of CIA estimates from the early 1980s refer to reconnaissance strike organizations (RSO), which had been developed out of the Soviet concern for the threat posed by the "Assault Breaker", precision-guided, deep-striking, theater-level systems, capable of firing on moving follow-on Soviet echelons. The Assault Breaker, designated by the Soviets as ROK, and envisioned as a pivot of conventional theater operation, was the 1978 DARPA project which leveraged emerging technology to foster significant change in command-and-control capabilities, mobility, armor, night-fighting, massed firepower and precision stand-off fire. It focused on the development of sensors, computing, communications guidance and munitions to allow a deep strike against hard, mobile targets.70 According to the same estimates, the RSOs were a further expression of the new MTR concept of integrated, deep, simultaneous fire destruction of the enemy. The analysts grasped that the Soviet RSOs consisted of an integrated triad of reconnaissance and target acquisition complexes, automated command-and-control elements and long-range striking systems. They correctly attributed the ROK and RUK to the operational

63 ACS/AF/Intelligence to Deputy for National Intelligence Officers, "Soviet Military Thought" Translation Series, 13 May 1974; NA.
67 Directorate of Intelligence, SOY 84-10173, Soviet Ground Forces Trends, 1 October 1984, pp. 19–20; and National Intelligence estimate, NIE 11-14-79, Warsaw Pact Forces Opposite NATO, 31 January 1979, p. 78; ERR.
(army) and to the tactical (division) levels and envisioned them as the main trend in future Soviet force development.71

In the late 1980s the CIA reported that since the 1970s the Soviets, motivated by the need to counter NATO deep-attack, high-technology conventional weapons and extended battlefield concepts, had been able to match NATO capabilities in nearly every major ground-forces weapons category. Discussing the Soviet conventional doctrine, the CIA acknowledged Soviet declarations regarding their perception of the virtual parity of conventional vs nuclear weapons. The CIA report argued that military advantages afforded to the USSR by its numerical supremacy might be mitigated by Western progress in advanced-technology conventional weapons, especially long-range PGMs.72 Toward the end of the Cold War, the CIA attained additional clarification of the Soviet doctrinal vision. It reckoned that the outcome of the future war would be determined mainly by a massed strike of conventional PGMs linked to real-time reconnaissance systems and complementary ground maneuver rather than by masses of tanks, infantry and artillery.73

However, in forecasting the development of Soviet military power for the 1980s, US intelligence concluded with an assessment which minimized the overall implications of the Soviet innovation. US intelligence predicted that if current trends continued, new technology, whether developed or illegally acquired, was expected to lead to evolutionary improvements in individual systems. However, not one of these technological developments or even their combination in the foreseeable future was expected to revolutionize modern warfare.74

68 Central Intelligence Agency Directorate of Intelligence, SW 86-10062, Soviet Microelectronics: Impact of Western Technology Acquisitions, December 1986; and National Intelligence Estimate, NIE 11-12-83, Prospects for Soviet Military Technology and Research and Development, 14 December 1983; ERR.
69 Director of Central Intelligence, Trends and Development in Warsaw Pact Theater Forces and Doctrine Through the 1990s, NIE 11-14-89, February 1989; ERR.
72 Director of Central Intelligence, Trends and Development in Warsaw Pact Theater Forces and Doctrine Through the 1990s, NIE 11-14-89, February 1989.
Similarly, while discussing Soviet writings on the MTR and RUK concept during the early 1980s, senior Department of Defence (DoD) officials treated the issue according to arms-race Cold War logic: if the notion of what the Soviets termed Western "reconnaissance-strike capabilities" caused a certain strategic discomfort in Moscow, then the US should expand its investment in this area. This logic was consistent with various administrations’ efforts - among them economic ones - to neutralize Soviet influence, to place them at a competitive disadvantage and to bring the struggle to an end on American terms.

The wealth of information concerning Soviet views of the discontinuity in military affairs, accompanied by the poverty of comprehension regarding its consequences, was a situation which endured within most of the US defense community for almost a decade. Only a few American analysts, most notably General William Odom, focused on the validity of the MTR and recognized it as more than just another Soviet innovation. Most Soviet watchers in the West, in their analysis of Soviet theoretical writings, were unable to see the forest for the trees of specific technologies and tactical-operational problems.

### The Conceptual Birth of the American RMA

Though there is no specific date for the birth of the current American RMA, one can designate the period of the late 1980s – early 1990s as the intellectual cradle of the paradigmatic change in American security thought. MacGregor Knox and Williamson Murray contend in their work on the dynamics of military revolutions that Andrew Marshall and his experts within the Office of Net Assessment (ONA) were the first to register the significance of Soviet writings on the MTR and to introduce

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77 Others include Mary Fitzgerald, Notra Truelock and experts at Andrew Marshall’s Office of Net Assessment.

the notion of the revolutions in military affairs into the American defense community. The Russian sources echo this claim.

Although the technological groundwork for the innovation had been laid down in the 1970s, for the American defense community, the RMA thesis had been nothing but a vague, abstract term, when Andrew Marshall and Andrew Krepinevich first circulated their memorandum on the RMA in the early 1990s. The US armed forces (similar to the British when they first began experimenting with armored and mechanized warfare in the mid-1920s) were not consciously thinking in terms of a revolution. As one scholar has remarked, the US military, like Molière’s character in the Le Bourgeois Gentilhomme, had been “speaking in prose” (the RMA) but didn’t know it.

Indeed, only a small group on the margins of American defense planning in the early 1980s would recognize the approaching RMA. Albert Wohlstetter is generally considered to be the first senior figure within the American defense establishment to understand the dramatic impact of the new accurate weapons on the nature of war. Wohlstetter referred to the phenomenon as “revolution in the accuracies of unmanned weapon systems.” Envisioning the first-generation PGMs deployed in the latter stages of the Vietnam War, he realized their potential for the substantial reduction of the inefficiencies and uncertainties that had plagued large-scale industrial-age combat. In the face of what he called the “enormous inertia” of the armed services, Wohlstetter, supported by a few defense intellectuals, campaigned vigorously through the 1980s, to consider more carefully the strategic implications of an expanding family of PGMs. In his view, the “revolution in microelectronics” opened up new vistas for the application of force and an increasingly wider variety of political and operational realities.

It was only at the very end of the Cold War that a genuine interest in Soviet MTR theories gathered momentum in the American defense

79 Knox and Murray, The Dynamics … , p. 3.
81 Knox and Murray, The Dynamics … , p. 4; James Der Derian, Virtuous War (Oxford: Westview Press, 2001), pp. 29–32. The Gulf War had an importance similar to that of the battle of Cambrai.
83 Tomes, Military Innovation and the Origins … , p. 336.
establishment. The highest point of Wohlstetter’s efforts to incline the defense community to re-conceptualize the nature of warfare came in 1987, when he co-chaired with Fred Ikle the Commission on Integrated Long Term Strategy. By this time, it was no longer the standard intelligence analyses of the doctrinal action-reaction dynamic in the European theater which attracted American attention, but the essence of the discussion about the emerging nature of the future security environment. The report discussed the need of extending its studies beyond Cold-War military-balance assessments, even though the USSR was still alive and kicking. The commission’s report gave credit to American technological advances discussed above such as stand-off PGMs, space, “stealth”, radar and targeting capabilities. However, the report stated without hesitation, that whereas the Soviets fully appreciated the implications of these systems on the ways of waging modern warfare, the Pentagon did not. On a more positive note, the Commission declared that if the US awoke to the opportunity at hand, it might acquire a more versatile, discriminating and controlled capability to employ this technology-driven change in war.

To further develop its initial insights, in 1988 the Commission established a working group, co-chaired by Andrew Marshall and Charles Wolf. The group, which included a few select defense intellectuals from the establishment and academia, was entrusted with the task of projecting the likely contours of military competition in the future security environment. The report echoed the findings of its predecessor in stating that the Soviets had identified roughly the same list of technologies as important for future war, but had considered their implications more systematically. It stated further that most, if not all considerations given to this subject in the West had focused too narrowly on the utility of highly accurate, long-range systems for raising the nuclear threshold and enhancing conventional deterrence. According to the Marshall

and Wolf report, rather than merely identifying ways to improve specific systems or perform existing missions, Soviet writings had suggested that the conduct of war would be broadly transformed by a “qualitative leap” in military technologies. The report found that in contrast to the American approach, the Soviet MTR writings tended to focus not on questions of the feasibility, costs, or timing of specific innovations, but rather to assume that families of new technologies would eventually be introduced, and to examine the tactical, operational, and strategic implications of technological trends. The report asserted that the Soviets had envisioned a more distant future than American military experts and conceded that the Russians might be correct in their assessment that the advent of new technologies would revolutionize war. The group concluded that if this were indeed the case, then a transformation in the nature of war would affect American force structures and command practices in some cases more profoundly than the introduction of nuclear weapons.\textsuperscript{89}

From the late 1980s, Andrew Marshall eclipsed Wohlstetter as the leading proponent of inquiring into a potentially emerging paradigmatic change in the future security environment. Building upon its work for the above commission, ONA embarked on a more detailed assessment of the Soviet MTR vision starting from 1989. The preliminary lessons from the Gulf War provided further stimulus for this inquiry, as the US sought to conceptualize the new type of warfare seen during Desert Storm. The US specialists claim and the Soviets concur that during the first post-Cold War military campaign, Operation Desert Storm, the allies had successfully executed a perfect version of the Soviet conventional-theater offensive which encapsulated most of the doctrinal principles developed by Soviet military theoreticians within the frames of the MTR. In Ogarkov’s view, the most impressive allied capability demonstrated during the war was the ability to conduct a tightly synchronized, integrated joint-operations assault throughout the depth of the operational theater, striking both the enemy’s strategic centers of gravity and military forces, in order to produce decisive results. Desert Storm focused US attention on weapons technology and high-tech research, much as Marshal Ogarkov had envisioned ten years prior to the war.\textsuperscript{90} The ONA experts had picked up on the writings of the Soviet military and offered an assessment which had two related goals: to iden-

tify whether or not the Soviet analysts were correct in their conviction that they were witnessing a fundamental discontinuity in military affairs; and second, if a military revolution was indeed on the horizon, to pinpoint critical issues which had to be given a prominent place on the defense management’s agenda.91

This assessment of the Soviet MTR, which was completed in 1992 (with a more comprehensive assessment a year later), is perhaps the best-known document prepared by the ONA. The ONA intellectual effort yielded what seemed to be a total consensus that Soviet theorists had been correct since the late 1970s about the character of the emerging MTR. The net assessment confirmed the Soviet postulates which assumed that advanced technologies, especially those related to informatics and precision-guided weaponry employed at extended ranges, were bringing military art to the point of revolution in the nature of warfare. Along with information warfare, the report identified the concept of reconnaissance strike complexes as the main determinant of future warfare.92

The 1992 and 1993 assessments called for a significant transformation of the American military, not so much in terms of new technologies but rather in operational concepts and organizational innovation. Being more advanced in these two fields was expected to be far more enduring than any advantage in technology or weapons systems. The report underscored the importance of a concept of operations in identifying the most effective weapons. The assessments attributed the highest importance to the investigation of and experimentation with novel concepts of operations and deducing from them a new architecture of military power.93

In contrast to the traditional “technology-driven” mentality of the American defense community, Andrew Marshall and his experts emphasized above all the conceptual and doctrinal, rather than the purely

93 Krepinevich, The Military Technical Revolution, p. 8; Marshall, 1993, pp. 2–4
The memorandum states outright that the most important competition is not the technological competition, although one would clearly want to have superior technology. The most important goal is to be the first, to be the best in the intellectual task of finding the most appropriate innovations in the concept of operations and organizations, to fully exploit the technologies already available and those that will be available in the course of the next decade or so.

The phrase MTR denoted too great an emphasis on technology and therefore an alternative term, revolution in military affairs, was adopted. It is interesting to note, that this expression was also borrowed from Soviet military writings on the subject, though ONA experts considered it preferable because it emphasized revolution rather than technology. According to William Owens, the then Vice Chairman of the JCS, Soviet ideas about the MTR had stirred enough interest among observers of Russia in the West to reduce it to the official Pentagon acronym. "A higher form of praise of Pentagon officials does not exist." The observations about the characteristics of a new military technical revolution were made on the basis of Soviet and Russian insights presented in their writings and personal exchanges with Soviet/Russian specialists during the early 1990s.

Marshall stressed the importance of the peacetime innovation that the US had effected since the early 1990s – a luxury afforded by the Soviet decline. He envisioned the challenges to come, but during the relatively peaceful years that followed, he called for undertaking a more active search for and experimentation with new doctrines. Addressing the implications for strategic management, the assessment called for the

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96 Owens, Lifting the Fog Of War, p. 83.
97 Soviet perspectives on the MTR were presented at the beginning of Krepinevich’s assessment as working assumptions which provide a solid ground for developing further knowledge, The Military-Technical Revolution, pp. 6–8.
following specific actions: to implement new concepts of operations and organizations through changes in educational programs and changes in acquisition and creating new promotion paths to train and to promote officers with appropriate skills and expertise.\textsuperscript{98} After conducting several historical studies sponsored by ONA,\textsuperscript{99} Allan Millett and Williamson Murray concluded that “military institutions that developed organizational cultures where serious learning, study, and intellectual honesty lay at heart of preparation of officers for war, were those best prepared for the challenges that they confronted on the battlefield”.\textsuperscript{100}

The \textit{MTR Preliminary Assessment} became the intellectual starting point for the future US defense transformation.\textsuperscript{101} Andrew Marshall and his proponents succeeded not only in intellectually defending their vision but in actually implementing the notion of the RMA across the US defense community.\textsuperscript{102} The evaluation was circulated in the US defense community, initiating the most comprehensive reforms at the DoD since the Vietnam War.\textsuperscript{103} A year after the publication of his legendary memorandum, there were five task forces exploring the RMA and its consequences.\textsuperscript{104} From the mid-1990s on, the term RMA established itself among specialists as an authoritative frame of reference within which the debate over the future of war unfolded.\textsuperscript{105}

\textsuperscript{102} Maddrell, \textit{Quiet Transformation}.
\textsuperscript{103} Krepinevich, \textit{The Military Technical Revolution}.
\textsuperscript{104} Tomes, \textit{Military Innovation and the Origins . . .}, pp. 9–10; Der Derian, \textit{Virtuous War}, pp. 28–29.
\textsuperscript{105} Bacevich, \textit{The New American Militarism}, pp. 164–166.
Chapter 3

American Strategic Culture

American Way of War: Swift Annihilation and Attrition by Fire Power

The national mission of conquering an entire continent, together with the nation’s prolonged frontier experience, left their mark on American strategic culture.106 The United States developed into a country of unusual dimensions and the scale of its resources has influenced the national security enterprises it has undertaken.107 As American society grew in size and wealth it also accumulated military power, with no apparent economic or demographic limits. Restrictions on American power were not natural, but rather determined by political and strategic considerations.108 Almost two-hundred years have passed since the United States faced an enemy with a larger gross national product than its own. American productive capacity, translated into overwhelming material superiority, has played a critical role in the nation’s military successes. Its dominance in numerous industrial and technological sectors, in skilled manufacturing and in the ability to increase production capacity, created mere military advantages: a large defense budget, a significant pool of machines for fighting a war and educated manpower capable of operating them.109 Given the abundant material resources, troops’ equipment, and excellent managerial expertise, the United States relied less on perfectly planned and executed strategies to win.110


Self-efficacy dictates a strategy to shift the conflict into those arenas where one enjoys an inherent advantage over one’s enemy. The strategy of attrition and annihilating the enemy with firepower was the best way to transform the nation’s material superiority into battlefield effectiveness. The translation of enormous resources into firepower, technology, logistical ability and a consequent inclination for direct attack, date back to the military experience of the American Civil War. This “annihilation by fire” approach has been largely successful throughout American military history. In illustrating this tendency in the country’s strategic culture, Eliot Cohen points to two outstanding characteristics of American conduct during the Second World War: a preference for massing a vast array of men and machines, and a preference for direct assaults. According to John Ellis, on the operational level, US generals relied on material superiority, firepower, and overwhelming force rather than on creative maneuvers which would threaten the enemy and force him to surrender. Referring to the American preference for mechanical and industrial solutions, some argue that the United States has often waged logistic, rather than strategic wars.

Discussing American strategic culture, Thomas Mahnken defines this preference for an overwhelming blow as taking a “direct approach to strategy over indirect”. In his discussion of American strategic culture, he dubs this phenomenon “an industrial approach to war”. Echoing this claim, Chester Wilmot argues that the Americans have adhered to the theory that if a military machine was big enough, it could be driven wherever they wanted to go. The conflicts in Korea and Vietnam pro-


111 May, The Sources..., pp. 7–8, 16.

112 Attrition-style warfare refers to a traditional war-fighting strategy that focuses on seeking out the enemy’s military forces, wherever they might be, and then using firepower to destroy them piece by piece through a process of gradual attrition until the enemy is no longer capable of fighting effectively.


vide further examples of the military doctrine of annihilation and a resource-based approach to warfare.\textsuperscript{119} Capitalizing on this industrial approach, the US has often out-produced its enemies in the amount of military power that it was able to generate.\textsuperscript{120} Criticizing Weigley’s formulation, some scholars have insisted that the American armed forces have pursued a much wider range of strategies beyond pure attrition or annihilation. American military tradition, they argued, is also rich in fighting small wars, insurgencies and developing excellence in deterrence strategies.\textsuperscript{121} However, Thomas Mahnken has claimed, even in these cases, a preference for attrition and annihilation “stands up remarkably well as a portrayal of American military strategic culture and the aspirations of the US military.”\textsuperscript{122} It is most likely for this reason that US strategic culture, which seeks decisive, swift and measurable national-security outcomes, is less at home with stability and support missions, on which swift annihilation by massive firepower is less relevant.\textsuperscript{123}

\textbf{A Strategic Thinking}

Longstanding American superiority in resources translated into a traditionally low incentive to engage in patient strategic considerations and in thorough operational calculations.\textsuperscript{124} Scholars agree that the materially wealthy United States has, throughout its military history, preferred an approach to war based on annihilation and attrition by means of technology and firepower rather than a style of fighting resting on

\begin{itemize}
  \item Lock-Pullan, \textit{US Intervention Policy} …, p. 23.
  \item Mahnken, \textit{United States Strategic Culture}, p. 10.
\end{itemize}
maneuverability or on strategic thoroughness. The American military sought to take the war to the enemy as rapidly and as destructively as the machinery of industrial-age warfare permitted, while maneuver was considered to be simply the means to impose firepower on the opposing force. It almost took it for granted that it would be able to mass forces and firepower whenever and wherever it desired. This industrial approach to warfare accounts, according to some scholars, for the relative disfavor with which traditional military theory is regarded.

Robert Lock-Pullan notes that the United States did not historically develop "excellence in strategy and military thought because it did not have to". Scholars report the strong predisposition of the American military tradition to value practice at the expense of theory. Although a professional military education of the US officers' corps was strongly emphasized, Williamson Murray argues that American strategic culture frequently tended to be anti-intellectual and anti-historical. Colin Gray argues that this neglect of a professional military education at the top, results in part in a tendency to think strategically. The philosophy of a continuous and profound professional military education was simply not that important an attribute to American military culture. Intellectual curiosity in military science never became a criterion for promotion.

The above observations also reflect on the American approach to developing professional theoretical knowledge about the nature of war. No theoretical approach for the organized study of war in all its aspects (the impact of social, economical, political, and technological phenom-
ena on the methods of fighting) was ever formulated in the West. Fundamental studies of war and predictions about its future obviously did take place in the US. However when scholars compared them to those done in the USSR, they found the former to be fragmentized, not integrated, uncoordinated, and rarely linked directly to the development of the state’s military machine. Edward Luttwak, in an essay written in 1981 in *International Security*, pointed out that despite the longstanding recognition of an operational level of warfare in classical military literature, there was no adequate term for this in Anglo-Saxon military thought. John Erickson and Raymond Garthoff have concurred that the term “operational art” was foreign to Western military thinking. This was a serious conceptual shortcoming, since it is generally on this level that paradigmatic changes in the nature of warfare are debated. Strategic and tactical implications are an outgrowth of the initial insights produced in the milieu of operational art. The American disinclination to invest in operational thinking comes as no surprise. The idea of “collapsing the enemy” by operational maneuver rather than simply annihilating it by firepower conceptually diverged from the established American strategic tradition.

It was only in the wake of the Vietnam War that ALB concepts began to emphasize warfare maneuverability and the necessity to develop theoretical knowledge on the operational level. It was not however until 1986 that the US army reoriented from battles of integral annihilation in favor of a more dynamic and complex understanding of war, and officially recognized operational art as an integral part of the US military thought.

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134 Lacking any formal theory to approach the study of war, Western military researchers often had difficulty in even grasping the terminology used by the Russians. Donnelly, *Red Banner*, p. 101–102.
135 It contrasted with the Soviet case, where all the insights about the nature of war, weaponry and strategy were channeled directly into specific policy decisions. Donnelly, *Red Banner*, p. 109.
137 Raymond Garthoff, *Significant features of Soviet military doctrine* (Santa Monica, Calif.: Rand Corp., 1954); Erickson, “The Significance of Operational Art…”
Optimistic and Engineering Approaches to Security

The belief of the founding fathers that America represented a "new beginning" contributed to a national identity based on liberal, democratic, Protestant and capitalistic principles. Individual freedoms, pragmatism and rationalism formed the cornerstones of the new society. The capitalist economy, liberal political structures and a strong spirit of exploration produced a belief that as nature could and should be understood, potentially almost any problem can be solved. Optimistic entrepreneurship became a value in all fields of American social activity and created a society based on notions of efficacy, rationalism and pragmatism. Compounded by repeated success, it produced a romantic engineering creed that viewed social and security problems as essentially mechanical in nature and, consequently, consistent with the logic of man-made machines.

American history is rife with "miraculous" achievements, typically in the face of challenging geography. Conquering the wilderness bred a frontier pragmatism that was translated into an engineering, problem-solving ethos. This approach often regards political conditions as a set of problems, and pushes strategists, influenced by engineering, to "attempt the impossible." As a society whose Declaration of Independence affirmed the "pursuit of happiness" as the natural right of every citizen, the Americans tended to take a proactive approach, viewing sources of unease and discomfort as "engineering problems". A belief evolved in popular culture that problems could always be solved.


143 May, The Sources ..., pp. 12, 14, 18, 26, 28, 36–37, 40, 42–43, 45–46.


146 Gray, "Strategy in the Nuclear Age", pp. 588, 593.

political challenges posed by the American Indians, menacing European or Asian empires were transformed by the United States into military problems that could be resolved definitively by means of machine war fare\textsuperscript{148} The absence of national-level security disasters reinforced optimism as an American national philosophy\textsuperscript{149} Such a strategic culture is more at home with administration than with the art of diplomacy or strategy\textsuperscript{150} It is inclined toward reductionist methods of problem-solving, by minimizing the complications created by culture, time, and distance\textsuperscript{151}

Similar engineering positivism is manifested in American military thought. Though Carl von Clausewitz might be considered the father of the American approach to civil-military relations, many claim that the true mentor of US military thinking is Antoine Jomini. He wrote about war as an art, but his quest for reducing complexity to a few apparently simple principles has characterized American military thought. Armed with the Jominian belief in the effectiveness and power of basic axioms, American practicality sought to reduce strategic problems to equations. The country’s domestic history encouraged the belief that American know-how would inevitably find a solution to any problem\textsuperscript{152} This tendency is reinforced by an American fascination with technology that dictates, drives, and organizes the managerial mindset in military affairs\textsuperscript{153}

**American Time Orientation - “Present and Immediate Future”**

Anita Arms describes in her study of American strategic culture how the need for immediate action, the rapid resolution of problems and
achieving results went hand in hand with a strong American time orientation toward the present instead of the past or distant future. The practicality of American thinking "condemns the irrational past", and directs it toward the immediate future, making the orientation more functional than that in other societies, where the future is measured in decades or generations. American time, argues Edward Hall, is linear. The future appears in American thinking in the form of anticipated consequences of actions.

American culture usually considers the newest to be the best. This inclination is clearly reflected in the US military's approach to weapons acquisition policy. While Soviet weapons research, development and procurement were driven by consumer requirements, the Western armed forces' often procured what industries produced and sold. In the West it was possible for a weapons system to be procured because it represented state-of-the-art technology, and not necessarily because its use was prescribed by the doctrine.

The fascination with novelty and rapid transformations predisposes American society to accept change more readily than other cultures. However, as Frederick Downey and Steven Metz have noted, with little attention paid to the past, the tendency is to look ahead - not to the distant future, but more to the demanding present time. Although US strategic planning has not always focused solely on the here and now, observers characterize it as generally averse to an extended strategic outlook and more comfortable with near-term crisis management than with long-term strategy planning. As Williamson Murray put it, referring mostly to Vietnam, "the American nation's worst defeat resulted largely from a military and civilian leadership that prized modern tech-

156 Edward Stewart and Milton Bennett, American Cultural Patterns: A Cross Cultural Perspective (Yarmouth, Me.: Intercultural Press, 1991), pp. 35–36; Bathurst, Intelligence and The Mirror, ch. 6.
157 Donnelly, Red Banner, pp. 123, 133.
159 For example, consider instances of long-term American strategic vision, such as: post-Civil War reconstruction; the Marshall Plan, the leading US role in the UN and Breton Woods; the NSC-68 and the US commitment to containment of the USSR. Skuta, Poker, Blackjack ..., pp. 16–17.
This lack of historical and cultural curiosity frequently results in a situation in which the enemy of the US understands the Americans far more coherently and effectively than the Americans understand him.162

Democratic Tradition, Bottom-Up Organization and the Role of the Joint Chiefs of Staff (JCS)

As a social-organizational phenomenon, the JCS manifested the American strategic culture just as the Soviet General Staff (GS) was keeping with the Russian strategic tradition. The organizational role of the JCS similar to that of the General Staffs of other countries was inconsistent with American cultural characteristics. The American political modus operandi prevented the concentration of an ultimate authority in a single military organization. Consolidating bureaucratic power in one central place (i.e. in the hands of the JCS chairman) would have contradicted the American democratic tradition of checks and balances. In keeping with the liberal tradition of American society, authority was delegated down to the services. Consistent with an entrepreneurial culture, the competition between services was expected to be beneficial and to serve as an impetus for innovative initiatives.163

As a result, one of the most significant bodies of the American military system, the JCS, was also one of the most controversial. Although the JCS was designated as the principle military advisory body to the civilian leadership, the chairman lacked the statutory mandate for independent long-term recommendations. His advice centered more on budget allocations and less on long-term strategy or development of American military power. The JCS was, for the most part, disconnected from the operational realm, rarely held command responsibility of its own, and as a rule, delegated considerable authority, including doctrinal development, to the services.164 De facto, the services, and not the

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JCS or the Department of Defense, were the most powerful institutions of American national security.\textsuperscript{165}

The establishment and subsequent functioning of the JCS was a distinct manifestation of American military parochialism. Its members faced a constant in-built dilemma, between representing the interests of their respective services and thinking jointly and broadly about the nature of the armed forces in an existing or emerging security environment. It was the former which invariably prevailed. Rather than being an elite military organization which concentrated the finest professional capital, the selection process produced narrowly focused, combat-oriented line officers, committed to the parochial interests of their services. The officers were selected late in their careers and were not formally educated for duty in the JCS. In striking contrast to the Soviet GS, the JCS by no means consisted of the \textit{crème de la crème} of the American military.\textsuperscript{166}

Strategic and long-term defense planning were weakly institutionalized in the JCS. It lacked the powerful cadres required to produce effective cross-service vision and advice that was capable of affecting the long-term development of the US military. By definition, the Chairman was a budgetary manager and occasional operational planner but not a deductive thinker about the nature of war. He was neither a doctrinal luminary nor an initiator of long-term strategic decisions. The JCS remained a captive of the services and lacked the intellectual mechanisms to generate broad, cross-cutting long-term recommendations. The institutionalized conceptual centers of gravity, such as Training and Doctrine Command (TRADOC), were diffused among the services which initiated most American military innovations.\textsuperscript{167} Lacking strategic guidance, the services’ innovations were often piecemeal, inconsistent, and sectarian, and rarely expanded beyond the operational level. “Each branch developed its distinctive strategic paradigm” and the JCS rarely offered conceptual alternatives to the views developed in the services.\textsuperscript{168} As a rule, American military innovated bottom-up, from the services to the leadership.\textsuperscript{169}

\begin{footnotesize}
\footnote{Ibid; and Roman and Tarr, p. 94.}
\footnote{Rosen, \textit{Winning the Next War}.}
\footnote{Roman and Tarr, pp. 91, 94; Lynn and Posen; Korb.}
\footnote{Evangelista, \textit{Innovation and Arms Race}; Bathurst, \textit{Intelligence and The Mirror}; the US also approached negotiations in the same inductive or bottom-up manner. Cogan, \textit{French Negotiating Behavior}, pp. 11, 48--49, 124--125, 247; Avruch, \textit{Culture and Conflict Resolution}, pp. 63--65; Cohen, \textit{Negotiating across Cultures}, pp. 30--33.}
\end{footnotesize}
No single institution existed in the American military which possessed a synthetic grasp of the security environment. Given the structure of the JCS, there was no institution capable of systematically thinking through the discontinuities in military affairs along the entire spectrum of their implications for the services. Without that perspective, it was virtually impossible to analyze the impact of the scientific-technological changes on the nature of warfare in general and on the doctrine and organization of the American military forces in particular. The state of professional periodicals serves as a case in point. Following the 1986 military reform, the JCS established its own professional publication, *Joint Forces Quarterly*, for the dissemination of knowledge among senior military professionals. This vanguard of American military thought was established only in 1993. In contrast, the professional publications of the American military services had been established several decades earlier than the quarterly of the JCS. For the sake of comparison, the Soviet GS had established its periodical *Military Thought* in the late 1920s. The titles of the journals also manifest which *raison d’être* their founders attributed to them. Williamson Murray, in discussing the relatively insignificant attention paid to doctrinal conceptualizations and theory development within the framework of American military culture, argues that the Joint Staff never constituted the intellectual center of gravity of the US military forces.¹⁷⁰ Through the years, the above-mentioned weaknesses of the JCS system were observed and noted by several American defense intellectuals.¹⁷¹

**Technological Romanticism in Military Affairs**

The strong bias toward technocratic warfare is an essential component of American strategic behavior. However, prudent exploitation of the technological dimension of war was a vital American asset in a number of areas. Scholars do not condemn machines or technology, rather their misuse and an overreliance on technology.¹⁷² According to Thomas Mahnken, “no other nation has placed greater emphasis upon the role of technology in planning and waging war, than the US.”¹⁷³ Reliance on

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¹⁷³ Mahnken, *United States Strategic Culture*, p. 12.
new technology is a corollary of the predisposition to solve problems quickly and in simple, direct terms.\textsuperscript{174}

Initially, America’s romance with machinery, particularly with mechanical means of transportation, was a result of the need to conquer the wilderness. Population density on the frontier, together with an acute shortage of skilled artisans obliged Americans to invent substitutes for human skill and muscle.\textsuperscript{175} The new society responded to this shortage by ingeniously embracing machines and taking the lead in the production of mechanical tools. Since the early nineteenth century the United States has been a land of technological marvels and developed an extraordinary rate of technology dependency.\textsuperscript{176}

The fascination with technology was not unique to the military; it characterized the culture as a whole. In contrast to Europe, American history has few examples of mobs destroying industrial machines. As Andrew May has shown, the capitalist economy fueled, and even demanded, ongoing innovation while the relentless character of the competition and the constant pressure to improve pushed scientists, technologists, and consumers closer together. American thinking is unusually innovative and enthusiastic with regards to technology. In the broader popular narrative, technology is generally seen as bringing benefits.\textsuperscript{177} The liberal American tradition saw technology as an instrument for preserving the nation’s immunity from war rather than as new means for waging it.\textsuperscript{178}

One of the principal by-products of technology was a faith in technology.\textsuperscript{179} American strategic culture viewed technology as a panacea in global affairs, and sought ways to expand its scope and to apply technical solutions to strategic issues.\textsuperscript{180} Weigley, in discussing the

\begin{footnotesize}
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\item Skuta, \textit{Poker, Blackjack \ldots}, p. 16.
\end{enumerate}
\end{footnotesize}
American way of war, argues that the pragmatic qualities of the American character have fostered a national penchant for seeking refuge from difficult problems of strategy in technology. This predisposition to technicity — to the exaggerated significance of the technical — was characteristic of American policymakers, as well. Many military historians regard the technology of warfare as one of the most important independent variables in the country’s military thought. Technological romanticism engendered visions of a mystical silver bullet promising decisive victory.

The zeal for technology was further fueled by a desire to get more “bang for the buck” while minimizing American, if not enemy casualties. The desire to minimize human losses (typical of democratic regimes) is another trait of American strategic culture. American society could not abide a high rate of casualties and the military sought a style of fighting designed to minimize fatalities. Thus, it became American practice to send metal into battle in place of vulnerable flesh. The preference to expend bombs and machines rather than personnel also led the United States to prefer to wreak destruction from a distance. According to Eliot Cohen, these elements are mutually reinforcing. The armed forces opt for air power, stand-off strikes, overwhelming firepower, and high technology as a mean to reduce the forces’ vulnerability in military operations.

This technological enthusiasm varies across the distinct subcultures of the American military services. The air force and navy were traditionally the most techno-friendly and techno-dependent. The army

184 Tilford, pp. 10–11; Gray, Strategy and History, p. 165.
189 Builder, The Masks of War.
kept its distance from such techno-bias and the marines valued technology the least. Being “boots-on-the-ground” services, the army and marines rely to a relatively greater extent on the human element than on machines and put the former at the center of warfare; hence the saying that the air force and navy man the equipment, while the army and marine corps equip the man. However, scholars agree that in spite of these differences, techno-centric romantic culture was ingrained in all four of the American military services and also served as a common denominator for civilian policymakers involved in military affairs.190

Within the defense establishment, debates about technology and budgets frequently usurped the place of strategy. The traditional orientation toward quick action and results, an attachment for things new and futuristic, and a disinclination to wage long wars was frequently in keeping with the almost instinctive reliance of American strategists on technology as a panacea in national security affairs.191 This pragmatism can result in a technical approach to international security, and a conception of complicated issues as problems requiring engineering solutions.192 American reliance on technology, according to Thomas Mahnken, was a poor but ubiquitous substitute for strategic thinking in international security.193

An Inclination to Ethnocentrism

The US has historically seen itself as an arbiter of morality, with a special moral-political mission in the world.194 It has been argued that this

190 Mahnken, United States Strategic Culture, pp. 16–18; Builder, The Masks of Wart, pp. 3–4; Farrell, “Strategic Culture and American Empire”; Murray, “The Future of American Military Culture”: 36; Sociological research characterizes US military officers as “technological optimists”. Thomas Mahnken and James F. Simmons, The Limits of Transformation: Officer Attitudes toward the Revolution in Military Affairs, Newport Paper no. 17, (Newport: Naval War College Press, 2003), ch. 6; and also see Mahnken, United States Strategic Culture, p. 12.


193 Mahnken, United States Strategic Culture, p. 13.

vision, fueled by the isolationist tradition, has sometimes created an ethnocentric belief among Americans that they occupy the moral high ground and their inclination to view the world primarily through the perspective of their own culture. The early ideologies of American colonists were influenced by the Protestantism of the Puritan settlers who believed that they were God’s people - chosen to lead the other nations of the world. John Winthrop gave this notion metaphoric expression in his description of America as a “City upon a Hill.” The successful course of political and military history in the US has provided justification for its belief in its own optimism, a self-confident sense of superiority, and invulnerability. Americans’ high estimation of themselves as a nation, including a collective narrative which emphasizes political and moral uniqueness, liberty, a divine mission, and a multidimensional sense of national greatness has made it difficult for them to accept the beliefs, habits, and behaviors of foreign cultures.

American history, at least up until the Vietnam War, was presented as an extremely positive narrative. Young colonies evolved into a power capable of carrying out the world’s most important endeavors. This generated an extraordinary optimism regarding what could be achieved by the American way of war. The early wars – the Seven Years War (1756–63), the Revolutionary War (1775–83), and the War of 1812 – regardless of how they had begun, were victorious at a relatively small cost. The late American entry into both World Wars was followed by a steady march toward victory. Successful involvement in both wars are recounted with considerable ignorance, minimizing the role played by Britain, Russia, and France, and a belief that the United States had ultimately won in both cases. This was a narrative which perpetuated ethnocentrism and bolstered the existing strategic culture. The overwhelmingly victorious historical experience kept Americans from ex-


196 Bremer, John Winthrop.


Ethnocentrism is known to produce a phenomenon known as mirror-imaging, a cognitive situation in which decision-makers or intelligence analysts project their thought processes or their value system onto the subject under reference. The tendency for mirror imaging also comes from insufficient interest in the opponent’s way of thinking. This “pathology” has been diagnosed in the American security and intelligence experience. It primarily hampers the ability to properly identify and assess emerging foreign methods of warfare. Thomas Mahnken has detected signs of mirror imaging among American intelligence officers monitoring developments in Japan and in Nazi Germany during the World War Two. In addition, technical developments were often assessed on the basis of the analyst’s own technology. Robert Bathurst has reported on constant “mirror imaging” in the routine work of American intelligence officers analyzing the Soviet military doctrine and technological capabilities during the Cold War. The adversary’s practices are studied not only in order to understand the potential enemy but also in order to learn alternative military art to emulate valuable ideas. In this regard, ethnocentrism can prove to be a serious obstacle. While the Soviet Army showed no reluctance to imitate and copy ideas from the US, this was not usually the case in reverse. Western nations, and the American military in particular, were less flexible in their attitudes, exhibiting a ”not invented here“ mentality.

203 Richards J. Heuer, Physiology of Intelligence Analysis (Washington DC.: Center for the Study of Intelligence, 1999), pp. 70–71.
204 Andrew Stuart, Friction in U.S. Foreign Policy: Cultural Difficulties with the World (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2006).
205 Mahnken, Uncovering Ways of War, pp. 11, 50.
206 Bathurst, Intelligence and the Mirror.
207 Donnelly, Red Banner, pp. 131–132, 206.
Cultural Factors and the American RMA

The cultivation of the technological seeds of the American RMA preceded the maturation of the conceptual ones. The US developed technology and weaponry for about a decade without realizing their revolutionary implications. Why did it take the US defense community close to a decade to acknowledge the accuracy of Soviet assumptions and to translate MTR theoretical postulates into a radical military reform? Several qualities of American strategic culture prevented its swift comprehension of the paradigmatic change in the nature of warfare discussed in the case under study.

During the introduction of PGM weaponry to the battlefield, mainstream American military experts concentrated on the focal point – the mechanical application of the new technologies on the tactical level, and detached it from the context - the implications of this new weaponry on the ways and means of conducting operations. This concentration on the focal technologies at the expense of the broader contextual implications hampered the US military from the swift comprehension of the paradigmatic change in the nature of war. The US forecasting efforts were piecemeal, extrapolated ahead from current capabilities, rather than trying to anticipate qualitative leaps in military regimes. The ALB innovation aimed to satisfy specific requirements related to a narrow, techno-tactical, yet relevant set of operational threats. The US military long saw in the stand-off PGMs no more than a perfect and immediate remedy for the Soviet echelonment doctrine. The US possessed only an intuitive understanding of the revolution that was about to occur, and was not consciously thinking in terms of a revolution. Not until Andrew Marshall and his colleagues from ONA introduced the notion of the RMA into the professional military discourse did the emerging discontinuity reach the consciousness of the American defense community.
In keeping with the inductive approach to understanding reality, a paradigmatic change among the mainstream of the US military did not occur before the particular empirical experience (Gulf War) had been observed and generalized.

Why did ONA experts reach better assessments than the rest of the American intelligence community on what the Soviets were thinking? As Colin Gray has noted in one of his publications, “a security community may have more than one strategic culture.”208 Led by Andrew W. Marshall ever since, the ONA experts succeeded in grasping this discontinuity because they did not embody – in fact had consciously suppressed – most of the traits of American strategic culture. The intellectual conduct of ONA was the striking exception to the rule, which nevertheless proved the rule. Eclectic, holistic and synthetic in its nature, the thinking style and the intellectual atmosphere inside the ONA diverged remarkably from the logical-analytical approach of mainstream American strategic culture. ONA experts consciously stressed the importance of context-dependence in the course of their analytical activity and sought to distance themselves from mainstream mechanical focalism. In contrast to the prevalent American cost-effectiveness approach which was procedural and prescriptive, ONA was consciously committed to producing descriptive knowledge.209

American strategic culture was less prepared institutionally and intellectually to think in terms of revolutions in military affairs. Institutionally, in keeping with a decentralized liberal culture, relevant conceptual and organizational military innovations, such as ALB, originated in a bottom-up manner, from the services and not top-down from the JCS or DoD. In keeping with the American cultural tendency to divide strategic problems into discrete parts in order to solve them, discerning the whole was frequently difficult. The American JCS had no ethos of being a “brain of the military”, and consequently strategic and long-term defense planning was weakly institutionalized there. The JCS lacked a powerful bureaucracy capable of producing an effective cross-service vision and advice that could affect the long-term development of US military power. The Chairman was a budgetary manager and occasional operational planner but not a deductive thinker about the nature of war. He remained a captive of the service’s parochialism

and lacked the intellectual capital to generate deep, cross-cutting, long-term observations.

Intellectually, the US military was unprepared for grasping the RMA as well. For generations, an integral battle of annihilation and enemy attrition by superior firepower had been an American way of war. This industrial approach to warfare accounts for the relative disfavor of the American theoretical military tradition. One implication was that the notion of operational art as a theoretical concept was rejected by the US military tradition until 1980s. The aim of “collapsing the enemy” by operational maneuver rather than simply annihilating it by firepower conceptually diverged from the established American strategic tradition. Because ideas about paradigmatic changes in the nature of war originate on the operational level of military thought, the lack of this intellectual layer was a serious obstacle that prevented thinking in terms of the RMA.210

The traditional orientation toward quick action and results, an attachment to things new and futuristic, and a disinclination to wage a long war, resulted in the almost instinctive reliance of American strategists on technology as a panacea in national security affairs. An optimistic and engineering approach to security, an industrial approach to warfare, annihilation and attrition by firepower, the positive role of machines in the American cultural narrative, the desire for cost-effective firepower, while minimizing casualties, made the US probably the most techno-centric military in the world. In this atmosphere, a functional and mostly tactical application of the advanced technologies took center stage. With certain variations, techno-euphoria was deeply ingrained in all four military services. During the 1970s, this technological romanticism disinclined the defense establishment to perceive the broader impact of this technological breakthrough upon the nature of war and to make a quantum leap in the sphere of military thought. American thinking appeared to focus more on how new technologies could be used to enhance the performance of existing missions. The PGMs were seen as just another, albeit significant, force multiplier in the military

210 Flawed thinking about the impact of technology on the character of future war occurred not only at the stage of the paradigmatic change. H.R. McMaster has clearly shown how the US military frequently failed to understand the implications of the RMA. The superficial thinking that accompanied the uncritical embracing of the RMA corrupted American strategic and operational thought in subsequent decades. According to McMaster, “influential organizations within the US military focused on how US forces might prefer to fight and then assumed that preference was relevant to the problem of future war.” H.R. McMaster, “On War: Lessons to be Learned,” Survival, vol. 50, no. 1 (February-March 2008): 19–30.
arsenal. Notwithstanding ONA's intent to focus the professional attention of the US defense community on the symbiotic relationship between technology, concepts and organizational structures, "techno-euphoria" blossomed once again during the implementation stage of the American RMA in the late 1990s.

Historically, ethnocentricity was a considerable factor in American strategic culture. The US saw itself as an arbiter of morality, with a special moral-political mission in the world. This vision inclined the US to view the world primarily through the perspective of its own culture. Ethnocentricity increased the likelihood of such analytical pathologies as “mirror-imaging”, in which foreign-security developments were measured by American standards. This unmotivated analytical bias of the US analysts made them less receptive to certain military innovations from abroad, since they did not correspond to the common wisdom of the American defense establishment. In keeping with this cultural trait, in their evaluations of the Soviet MTR, American experts projected their own perceptions. They measured the Soviets by the standards of the US military and on the basis of American technology. Until the ONA assessment, the US defense community had failed to grasp the essence of the Soviet MTR developments, and avoided accepting controversial futuristic conclusions offered by the Russians. Soviet writings about the revolutionary impact of the new weaponry were skeptically treated by the US experts as futuristic nonsense. Ironically, Soviet theories ultimately provided a kind of a "mirror" for US strategists. By analyzing how American military power was reflected in Soviet eyes in the early 1980s, US strategists were able to realize during the early 1990s the value of the revolutionary treasure they possessed.
Bibliography

Books, Chapters in Books, and Monographs in English


Arquilla, John, and David Ronfeldt: *In Athena’s Camp: Preparing for Conflict in the Information Age* (Santa Monica: Rand, 1997).


Defence and Security Studies 1-2008


Ehrhard, Tom: *Net Assessment* (Syllabus, Strategic Studies Course 660.756, SAIS, Johns Hopkins University, 2007).


—: *Recognizing and Understanding Revolutionary Change in Warfare* (Carlisle: US Army War College, 2006).

—: *Postmodern War* (York: Guilford Press, 1997).


Hudson, Valerie: *Culture and Foreign Policy* (Boulder, CO: Lynne Rienner Publishers, 1997).

Hundley, Richard: *Past Revolutions, Future Transformation: What can the history of revolutions in military affairs tell us about transforming the US Military?* (Santa Monica: RAND, 1999).


Isaacson, Jeffrey, Christopher Layne and John Arquilla: *Predicting Military Innovation* (Santa Monica: RAND, 1999).


Leites, Nathan: *Soviet Style at War* (New York: Crane, Russak, 1982).
—-: *Soviet Style in Management* (New York: Crane Russak, 1985).


MacKenzie, Donald and Judy Wajcman, eds: *The Social Shaping of Technology* (Milton Keynes, UK: Open UP, 1999).


——: *United States Strategic Culture* (Defense Threat Reduction Agency: SAIC, 2006).


McNaugher, Thomas L. and Roger L. Sperry: “Improving Military Coordination: the Goldwater-Nichols Reorganization of the
Defence and Security Studies 1-2008


Wendt, Alexander: *Social Theory of International Politics* (Cambridge University Press, 1999).


Articles in English


Cohen, Eliot: “Change and Transformation in Military Affairs”, *Journal of Strategic Studies*, vol. 27, no. 3 (September 2004).
—–: “Net Assessment: An American Approach”, *Jaffe Center for Strategic Studies Memorandum*, no. 29 (Tel Aviv University, April 1990).


Defence and Security Studies 1-2008


Jacobs, Walter: "Operational Art", *Army*, no. 11 (1961),


Kiszely, John: “Thinking About the Operational Level”, *RUSI Journal*, vol. 150, no. 6 (December 2005).


Lantis, Jeffrey: "Strategic Culture: from Clausewitz to Constructivism", *Strategic Insights*, vol. IV, issue 10 (October 2005).


McKitrick, Jeffrey: “Adding to Net Assessment”, *Parameters* (summer 2006).


Wendt, Alexander, “Anarchy is What States Make of It: The Social
Construction of Power Politics”, International Organization, vol. 46, no. 2
(spring 1992).
—: “Constructing International Politics”, International Security, vol. 20, no. 1

Wohlstetter, Albert: “Between an Unfree World and None: Increasing Our
Choices”, Foreign Affairs, vol. 63, no. 5 (summer 1985).
—: “Threats and Promises of Peace: Europe and America in the New Era”,
ORBIS, vol. 17, no. 4 (winter 1974).

Books, Chapters in Books, and Monographs in Russian

Anureev, I.I.: Nauchno tekhnicheskii prog res i ego ispol'zovanie v voennom dele
[Scientific-technical progress and its implications to military affairs]
(Moscow: Obshchestvo Znanie, 1982).

Altukhov, P.K.: Osnovy teorii upravleniya voyskami [The Basics of the Forces
Command] (Moscow: Voenizdat, 1984).


Baranov, A.O.: Sushchnost' sovremennoi voenno-tekhnichekoi revoliutsii [The

Bondarenko, V.M.: Nauchno tekhnicheskii prog res i voennoe delo [Scientific-
technical progress and military affairs] (Moscow: Centralnyi Dom SA
—: Sovremennaya voennaya nauka i razvitie voennogo dela [The Modern Science
and The Development of Military Affairs] (Moscow: Voenizdat, 1976).

Derevianko, P.M.: Revolyutsiya v voennom dele: vchem ee sushchnost’? [The Essence
of the Revolution in Military Affairs] (Moscow: Ministerstvo Oborony
SSSR, 1967).

Frunze, M.V.: Edinka voennaya doktrina i Krasnaya armiya [The Unified
—: Edi zavtra voina? [If the War Comes Tomorrow] (Moscow: Vladar,
1995).

Gareev, M.A.: M.V. Frunze – Voennyi Teoretik [M.V.Frunze – Military
Theoretician] (Moscow: Voenizdat, 1982).
—: Sobranie sochinenii [Selected Works] (Moscow: Voen Izdat, 1929).


Gilmanov, A.Z.: *O Nauchno tekhnicheskoi revoliutcii kak vazhnom faktore sozdaniia materialno-tekhnicheskoi bazy komunizma* [Scientific revolution as an important factor in the material – technical base of communism] (Kazan’: Kazanskoe Vysshie Voennoe Inzhenernoe Uchilishe, 1982).


Gorbunov, V.A.: *Effektivnost’ obnaruzheniia celei* [Effective Targeting] (Moscow: Ministerstvo Oborony, 1980).


Grinevskii, Oleg: *Perelom: ot Brezhneva k Gorbachevu* [The Clash: from Brezhnev to Gorbachev] (Moscow, Olma Press, 2004).


Konoplev, V.K.: *Nauchnoe predvidenie v voennom dele* [Scientific Forecasting in Military Affairs] (Moscow: Voenizdat, 1974).


Lomov, N.A.: *Nauchno tekhnicheskii progress i revoliutsiia v voennom dele* [Scientific Technological Progress and Revolution in Military Affairs] (Moscow: Minisiterstvo Oborony, 1973).


——: *Voina budashchego* [Future War] (Moscow: Obochkhestvenni Nauchnii Fond, 1999).

——: *Voiny Shestogo pokoleniia: Oruzhie i voennoe iskusstvo budashchego* [Wars of the Six Generation] (Moscow: Veche, 2002).


——: *Strategia* [Strategy] (Moscow: Voennyi Vestnik, 1927).


Zakharov, M.V.: *General’nyi shtab v predvoennye gody* [The General Staff in the Years Prior to the WWII] (Moscow: Voenizdat, 1989).


**Articles in Russian**


—–: “Bor’ba s tankami na bolshikh dal’nostiah” [Engaging the Tanks from the Greater Distances], ZVO, no. 12 (1979): 12–13.


Filippov, V. “Soedineniia novogo tipa v armii SShA” [New Formations in the US Army], ZVO, no. 7 (1978): 29.


—: “Vydaiuschiisia voennyi reformator” [The Distinguished Military Reformer], KZ, 30 October 2002.

Golushko, I.: “Tyl v usloviah ispolzovania protivnikom vysoko-tochnogo oruzhiia” [The Rear in the Ear of the PGMs], Tyl i snabzhenie, no. 7 (July 1984).


—: “Voevat' ne chislom a umeniem” [To Fight by the Quality and not by the Quantity], VM, no. 6 (1983): 34–42.


Kruglov, V.V.: “Novyi podhod k analizy sovremennogo protivoborstva” [The New Approach to the Analysis of the Modern Combat], VM, no. 12, December 2006.


Krymtsev, V.G. and Iu.I. Molostov: “Vysokotochnoe protivotankovoe oruzhie armii stran NATO i perspektivy ego razvitiia” [The PGMs in the NATO Forces and the Perspectives of Its Development], VM, no. 10 (1984): 73–79.


Makarebskiy, V.: "Blitzkrieg v epokhu nauchno tekhnicheskoi revoliucii" [Blitzkrieg in the Period of the MTR], VZ, no. 9 (September 1986).
——: "Gonka obychnykh vooruzhenii I problemi ee ogranichenia" [Convnetional Arms Race – The Problems and Limitations], Mirovaya ekonomika i mezhdunarodnye otnoshenii, no. 5 (May 1984).


Molostov, Iu.: "Vysokotochnoe protivotankovoe oruzhie i obshevoiskovoi boi" [The PGMs and the Comnived Arms Battle], VV (October 1986).
——: "Zashchita ot Vysokotochnogo Oruzhia" [The Defense from the PGMs], VV 2 (1987): 83–86.


Nechaev, N.: "Voennye sistemy sviazi: tendencii ikh razvitiiia" [The Development of Combat Communication Systems], Tekhnika i vooruzheniia, no. 6 (July) 1986.


Ponomarev, A.N.: “Sostoianie i osnovnye napravlennia razvitiia aviasionnoi tekhniki VVS SShA i drugikh stran NATO” [The Main Directions in the Development of the Air Technologies in the US and Other NATO Countries], VM, no. 6 (1977): 71–81.


Shipovalov, V.P.: “Bor’ba s tankami” [The Combat Against Tanks], ViZh, no. 9 (September 1986).


–––: “Novye vooruzheniia I principi taktiki” [New Weaponry and Tactics Principles], Sovetskoe voennoe obozrenie, no. 2 (February 1987).
—: "O tvorchestve I novatorstve v taktike" [On Creativity and Novelty in Tactics], VM, no. 3 (1988).
—: "Sovremennoe vooruzhienie i taktika" [Modern Weaponry and Tactics], KZ, 15 September 1984.


