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**SEEKING VICTORY AT A DISCOUNT:
THE IMPACT OF THE MILITARY-TECHNICAL
REVOLUTION ON FORCE-LEVEL DECISIONS DURING
PLANNING FOR OPERATION IRAQI FREEDOM**

by

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ON FORCE-LEVEL DECISIONS DURING PLANNING FOR
OPERATION IRAQI FREEDOM**

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ABSTRACT

This thesis examines one central question: How did the paradigm shift of the Military-Technical Revolution impact force-level decisions for the initial phase of Operation Iraqi Freedom in 2003? This issue encompasses an additional question: namely, why did the Bush administration decide to dramatically reduce the force-level recommendations embodied by pre-9/11 Iraq war plans? By applying the theoretical construct of Kuhn's paradigm shift to the notion of Revolutions in Military Affairs, I conclude that the Military-Technical Revolution convinced military planners that a whole new strategy was appropriate for the era of the war on terror. This constituted a radical break with the manpower-heavy requirements of the previous Decisive Force paradigm. The thesis ends with implications for the current security environment, where rising tensions with China and Russia and a host of new technologies (artificial intelligence, hypersonic missiles, etc.) seem to some to offer the potential to remake warfare.

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LIST OF ACRONYMS AND ABBREVIATIONS

AAR	After-Action Report
AEF	American Expeditionary Forces
CENTCOM	United States Central Command
DOD	Department of Defense
DPG	Defense Planning Guidance
IFOR	Implementation Force
KFOR	Kosovo Force
NATO	North Atlantic Treaty Organization
OIF	Operation Iraqi Freedom
OPLAN	operation plan
PGM	precision-guided munition
QDR	Quadrennial Defense Review
RDO	Rapid Decisive Operations
RMA	Revolution in Military Affairs
SFOR	Stabilization Force
TRADOC	U.S. Army Training and Doctrine Command

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I. INTRODUCTION AND RESEARCH OUTLINE

A. PROBLEM STATEMENT

This thesis examines one central question: How did the paradigm shift of the Military-Technical Revolution impact force-level decisions for the initial phase of Operation Iraqi Freedom (OIF)? In 2001, when the Bush administration first began to seriously consider an invasion of Iraq, the existing plans for a military intervention there called for up to half a million troops and envisioned the need for extensive support from allies and partners, to include Iraq's neighbors.¹ But by the time the invasion began in March 2003, the force consisted of about 145,000 troops and far less regional and allied support than the original war plans envisioned.² The reasons for the Bush administration's decision to invade Iraq after September 11 are largely beyond the purview of this project. The reasons behind its decision to dramatically reduce the number of forces to conduct the invasion are the primary focus of this thesis.

B. SIGNIFICANCE OF THE RESEARCH QUESTION

Despite the large body of literature already generated, study of the decisions surrounding the 2003 invasion of Iraq remains a field worthy of inquiry. Discussions of the war's cost in terms of human life, monetary expenditures, and geostrategic prestige are well documented and do not require repetition here.³ Two decades after their arrival, U.S. ground forces remain in Iraq and, based on recent comments from Iraq's prime minister, it seems unlikely that they may leave in the near future.⁴ The presence of American troops twenty years on begs questions about their original mission, how that mission was intended

¹ Michael R. Gordon and Bernard E. Trainor, *Cobra II: The Inside Story of the Invasion and Occupation of Iraq* (New York: Random House, 2006), 4.

² Thomas E. Ricks, *Fiasco: The American Military Adventure in Iraq* (New York: The Penguin Press, 2006), 117.

³ Michael J. Mazarr, *Leap of Faith: Hubris, Negligence, and America's Greatest Foreign Policy Tragedy* (New York: PublicAffairs, 2019), 3–4.

⁴ Jack Detsch, "'They Have to Balance': New Iraqi Leader Tilts the Scales Toward U.S.," *Foreign Policy*, last modified January 24, 2023, <https://foreignpolicy.com/2023/01/24/iraq-new-prime-minister-sudani-us-troops/>.

to be accomplished, and how that intention shaped decisions about the forces sent to Iraq. Regardless of one's personal views about foreign policy or the role of military force, a sober assessment of the historical record indicates that there is no shortage of threats that the United States may find itself contending with overseas.⁵ Thus, analysis of America's force-level decisions leading up to its largest recent overseas combat deployment is worthy of further study to glean insights that may be germane for future contingencies requiring a similarly substantial commitment. The ongoing war in Ukraine and the growing confrontation with China are two such potential contingencies.

This thesis seeks to examine the role that advancing technology played in the decision of how to invade Iraq based on the belief that this case could demonstrate a linkage between perceived technological capability and political decision-making on whether and under what conditions to use force. We continue to live in a time of accelerated technical innovation that promises to limit the risks posed to military forces. It seems prudent to review a previous operation where ideas of this type drove decision-making. As one recent trenchant analysis stated "This belief, that war is a problem solved through the correct application of science and technology, continues to characterize American approaches to conflict; and the United States, as the leading western military power, has impacts on the behavior of allied countries."⁶ The rise of robotics and AI, simultaneous with the rise of China as a threat, makes this risk all the more relevant as these advanced technologies spread to friends and allies—as well as enemies.

C. LITERATURE REVIEW

A researcher looking into the impact of the Military-Technical Revolution on decisions about force-levels for OIF has an immense amount of material to draw from. These sources include empirically-built histories of American involvement in the Middle

⁵ For a review of the breath of historical and current U.S. military deployments see Barbara Salazar Torreon and Sofia Plagakis, *Instances of Use of United States Armed Forces Abroad, 1798–2022*, CRS Report No. R42738, (Washington, DC: Congressional Research Service, 2022), 17–18, <https://crsreports.congress.gov/product/pdf/R/R42738>.

⁶ Stephanie Carvin, "How Not to War," *International Affairs* 98, no. 5 (September 2022): 1696, <https://doi.org/10.1093/ia/iiacl89>.

East and the concept of the Military-Technical Revolution, voluminous secondary works specifically addressing OIF (much of it derived from detailed interviews with key participants responsible for shaping policy), and a vast primary source literature drawing on speeches, think tank reports, congressional testimony, and a number of government documents concerning military strategy in general and Iraq in particular. However, the most foundational topic to begin this investigation is the concept of paradigm shift.

This thesis draws upon the concept of the paradigm as an instrument through which to analyze the relationship between the Military-Technical Revolution and political decision-making. Its central contention is that the Bush administration's embrace of the Military-Technical Revolution represented a paradigm shift towards a new concept of warfighting. This paradigm shift explains the decision to invade Iraq with a force structure that radically departed from the thinking of the previous Decisive Force paradigm. While one can find some evidence of the influence of the Military-Technical Revolution on United States Central Command's (CENTCOM) war plans prior to the global war on terrorism, I argue that it was only with the 2001 invasion of Afghanistan that the new paradigm became dominant. As outlined in later sections, the perceived success of the new paradigm in Afghanistan convinced policymakers that it could also be applied on a much grander scale to the 2003 invasion of Iraq.

1. Paradigm Shift

The ubiquity and longevity of Kuhn's notion of paradigm shift by themselves make it a very attractive concept for any researcher in need of intellectual architecture that might prove useful for explaining an instance of evolution or change. Indeed, at least one learned commentator has claimed that *The Structure of Scientific Revolutions* "has had a wider influence than any other book on the history of science."⁷ While Kuhn's initial academic discipline was physics and *Structure* draws examples primarily from the physical sciences, his theory's broader implications are widely acknowledged. Indeed, as a key text in the canon of the philosophy of science, its use in security studies might be particularly apropos,

⁷ Steven Weinberg, "The Revolution that Didn't Happen," *New York Review of Books*, <https://www.nybooks.com/articles/1998/10/08/the-revolution-that-didnt-happen/>.

as both fields of study are noted for their diverse interdisciplinary natures.⁸ In the preface to *Structure*, Kuhn notes that in addition to the study of science and pure history of science, his ideas were also influenced by his reading of psychology, linguistics, and sociology.⁹

Of particular importance to this study is paradigm shift's proposition that changes in intellectual frameworks are predicated on the inability of existing schools of thought to solve new problems or accommodate novel information.¹⁰ As Kuhn wrote "Failure of existing rules is the prelude to the search for new ones."¹¹ It is perhaps in this sense that the notion of paradigm shift most closely intercepts with a core idea in security studies, the concept of a Revolution in Military Affairs.

2. Revolutions in Military Affairs / Military Revolutions

It is clear that military institutions in the United States are continuously evaluating the optimal ways to fight wars in their quest to assert that supremacy on the battlefield should it become necessary. The United States Army, for example, has an entire organization called the Training and Doctrine Command (TRADOC) that is engaged in this exercise and, in parallel, writing down its conclusions in generalizable form for operating forces. In other words, organizations like TRADOC are instrumentally engaged in trying to determine whether change in military doctrine and force structure is warranted. Over the last quarter century, a principal focus of TRADOC and all of the military departments has been a paradigm shift in security studies under the notion of what have been called Revolutions in Military Affairs (RMAs), or sometimes also referred to as military revolutions.

⁸ Security Studies: Stephen M. Walt, "The Renaissance of Security Studies," *International Studies Quarterly* 35, no. 2, (June 1991): 211, <https://doi.org/10.2307/2600471>; and Marie I. Kaiser, Marie Kronfeldner, and Robert Meunier, "Interdisciplinarity in Philosophy of Science," *Journal for General Philosophy of Science* 45 (Suppl 1), (October 2014): 59, <https://doi.org/10.1007/s10838-014-9269-1>.

⁹ Thomas Kuhn, *The Structure of Scientific Revolutions* (Chicago, IL: University of Chicago Press, 2012), xl-xli.

¹⁰ Kuhn, *The Structure of Scientific Revolutions*, 68.

¹¹ Kuhn, *The Structure of Scientific Revolutions*, 68.

There is strong evidence for thinking about RMAs as a kind of paradigm shift. Some definitions of what constitutes an RMA explicitly incorporate the term “paradigm shift.”¹² Freedman emphasizes that the “revolution” in RMA implies more than mere incremental change, but instead indicates “a moment of transformation” in the way that wars are fought.¹³ Many descriptions of historical RMA events point to specific technological innovations as their defining features. These include the introduction of gunpowder in Medieval Europe and the employment of aircraft, tanks, and submarines during the First World War.¹⁴ Other definitions of RMA stress that while the technological element is important, new organizational and operational concepts about how to employ said technology are also critical.¹⁵ While different definitions and case studies carry specific nuances and areas of emphasis, one begins to get a common picture of an RMA/military revolution as a category of event that focuses on the way that innovation enables a military to gain a decisive advantage over its competitors. In this sense, RMA is closely related to paradigm shift, especially Kuhn’s emphasis on how a need to solve new problems or assimilate new observations spurs the development of a new paradigm.

3. The Military-Technical Revolution as an Example of RMA

Within the historical narrative of RMA and military revolutions, there emerges a notion of a specific event beginning in the 1970s called the Military-Technical Revolution.¹⁶ This specific development seems to have technological change as its preeminent quality, even above and beyond the central role that technology is seen to play in all RMAs. The term originated in the Soviet Union to describe the seemingly

¹² Richard Hundley, *Past Revolutions, Future Transformations: What Can the History of Revolutions in Military Affairs Tell Us About Transforming the U.S. Military?* (Santa Monica, CA: RAND, 1999), xiii, https://www.rand.org/pubs/monograph_reports/MR1029.html.

¹³ Lawrence Freedman, “Introduction,” *The Adelphi Papers* 38, no. 318 (1998): 7, <https://doi.org/10.1080/05679329808449499>.

¹⁴ Williamson Murray and MacGregor Knox, “Thinking About Revolutions in Warfare,” in *The Dynamics of Military Revolution: 1300–2050*, ed. MacGregor Knox and Williamson Murray (New York: Cambridge University Press, 2003), 13.

¹⁵ Andrew Krepinevich, “Calvary to Computer: The Pattern of Military Revolutions,” *The National Interest*, September 1, 1994, <https://nationalinterest.org/article/cavalry-to-computer-the-pattern-of-military-revolutions-848>.

¹⁶ Murray and Knox, “Thinking About Revolutions in Warfare,” 3.

simultaneous emergence of groundbreaking American defense technologies like precision guided munitions (PGMs), cruise missiles, and stealth aircraft.¹⁷ Adamsky notes the paradox of the fact that while it is was the United States that first developed the technology of the Military-Technical Revolution, it was the Soviets (who themselves could not reproduce the technology) who realized its potential to remake warfare.¹⁸

In addition, some theorists proposed that the Military-Technical Revolution would allow states to field highly efficient forces made up of far fewer troops than armies in wars past, thereby lowering the monetary and human cost to the state applying force. For example, in an article on the Military-Technical Revolution in *Foreign Affairs*, Johns Hopkins political scientist Eliot Cohen opined:

In the nineteenth and early twentieth centuries, God may not always have been on the side of the bigger battalions, as the saying went, but victory certainly was. Future technologies, however, may create pockets of military capability that will allow very small states to hold off larger ones, much as companies of Swiss pikemen could stop armies sweeping through their mountain passes or a single, well-fortified castle could hold immensely larger forces at bay for months.¹⁹

While Cohen's article referenced the potential increase in lethality of small forces as a boon to small states, the United States as well could benefit from these technological developments. How to deal with these technologies and the potential advantages they offered is what presented an anomaly in the Kuhnian sense, e.g., a problem that the old paradigm was not prepared to reckon with. That previous paradigm, called Decisive Force, emphasized very different elements of military power than the Military-Technical Revolution.

A brief note on terminology: The term Military-Technical Revolution will be used throughout this thesis for consistency and clarity. The term Military-Technical Revolution

¹⁷ Murray and Knox, "Thinking About Revolutions in Warfare," 3.

¹⁸ Dima P. Adamsky, *The Culture of Military Innovation : The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the U.S., and Israel* (Stanford, CA: Stanford University Press, 2010), 32.

¹⁹ Eliot Cohen, "A Revolution in Warfare," *Foreign Affairs*, 75 no. 2 (March-April 1996), 53, <https://www.jstor.org/stable/pdf/20047487.pdf>.

represents the culmination of change in military institutions drawing upon advanced technologies that conceptually started with observations by Soviet theorists and continued through different political administrations in the United States.²⁰ After the Soviets attached the term Military-Technical Revolution to the phenomenon, various names were assigned to describe their notion in the West. Sometimes it was referred to using the generic label of “RMA” and, later, “transformation.”²¹ More recently, the phenomenon has been referred to as “the Second Offset.”²² For the purposes of this thesis, these terms are essentially interchangeable—drawing upon the Soviet’s initial formulation.

4. The Old Paradigm: Decisive Force

The novelty of the defining characteristics of the Military-Technical Revolution as described above—most especially its emphasis on technology’s potential to supplant raw numbers and brute strength as the keys to victory—appear in stark relief when compared to the old paradigm of Decisive Force. In his 1973 classic work appropriately titled *The American Way of War*, Weigley described “the strategy of annihilation” as being “characteristically the American way in war.”²³ He went on to describe the essence of this strategy as “the destruction of the enemy’s armed force and with it the complete overthrow of the enemy.”²⁴ Weigley contended that while the beginnings of this tradition were evident during the American Revolution and wars against Native American tribes, it was not until the Civil War that the Union Army possessed sufficient military strength to wholeheartedly adopt this approach to war.²⁵

²⁰ Adamsky, *The Culture of Military Innovation*, 3.

²¹ Hundley, *Past Revolutions, Future Transformations*, 7–8; and Mark G. Czelusta, *Business as Usual: An Assessment of Donald Rumsfeld’s Transformation Vision and Transformation’s Prospects for the Future, Occasional Paper Series 18* (Garmisch-Partenkirchen, Germany: George C. Marshall Center for European Security Studies, 2008), 4, https://ciaotest.cc.columbia.edu/wps/mc/0017002/f_0017002_14539.pdf.

²² Shawn Brimley, “Offset Strategies and Warfighting Regimes,” War on the Rocks, last modified October 15, 2014, <https://warontherocks.com/2014/10/offset-strategies-warfighting-regimes/>.

²³ Russel F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington, IN: Indiana University Press, 1973), xxii.

²⁴ Weigley, *The American Way of War*, xxii.

²⁵ Weigley, *The American Way of War*, xxi.

In his 1996 volume *Decisive Force*, Hoffman stated that “the U.S. military shows a marked predisposition for strategic offenses supported by full national mobilization ... to bring to bear a preponderance of power in the most direct and decisive manner possible.”²⁶ While Hoffman of course recognized that American history featured a number of what he termed “limited wars” (perhaps the most frequent example of which are various interventions in Latin America), he described them as “not preferred” and in conflict with a “cultural orientation...towards large scale, production line, conventional warfare.”²⁷ As with Weigley, Hoffman’s description of the American military’s traditional emphasis on large numbers of conventional clearly contrasts with the Military-Technical Revolution’s aspiration to minimize force-levels through the use of new technology.

A review of U.S. military planning for war in the Middle East from 1979 through 2003 provides a unique case study for reviewing the paradigm change from *Decisive Force* to the Military-Technical Revolution. This period witnessed both a growing U.S. military presence in the region as well as early recognition of the potential impacts of the Military-Technical Revolution.²⁸ As seen in the following sections, this thesis contends that while some vestigial elements of the Military-Technical Revolution are observable in American Middle East strategy prior to 2001, the true paradigm shift away from *Decisive Force* occurred with the wars in Afghanistan and Iraq.

5. The Military-Technical Revolution and American War Planning in the Middle East Prior to the Global War on Terrorism

Sustained American military interest in the Persian Gulf originated with the January 1980 proclamation of the Carter Doctrine, and the twin crises that preceded it in 1979, namely the Iranian Revolution and the Soviet invasion of Afghanistan.²⁹ The Carter Doctrine stated that the United States would use military force to repulse a foreign power

²⁶ F. G. Hoffman, *Decisive Force: The New American Way of War* (Westport, CT: Praeger Publishers, 1996), 1.

²⁷ Hoffman, *Decisive Force*, 5.

²⁸ Andrew J. Bacevich, *America’s War for the Greater Middle East: A Military History* (New York: Random House, 2016), 24–29; and Murray and Knox, “Thinking About Revolutions in Warfare,” 3.

²⁹ Bacevich, *America’s War for the Greater Middle East*, 24–29.

that invaded the Persian Gulf.³⁰ The chief concern was that the Soviet Union's ambitions would stretch all the way to the Middle East, jeopardizing America's supply of oil. This newfound interest in the Persian Gulf also spawned the creation of the Rapid Deployment Joint Task Force in 1980, which eventually became CENTCOM.³¹ CENTCOM's first war plan, called 'Operation Plan (OPLAN) 1021: Defense of the Arabian Peninsula' envisioned a scenario whereby the United States would defend against a Soviet effort to capture Iran.³² According to the plan, heavy American divisions would deploy from bases in the U.S. to the Zagros mountains in Iran. Of course, OPLAN 1021 was never executed. Between CENTCOM's creation and Iraq's 1990 invasion of Kuwait, American military engagements in the Middle East were decidedly limited affairs like the Marine Corps peacekeeping contingent deployed to Lebanon in 1982–1983 or naval intervention in the Persian Gulf during the so-called Tanker War between Iraq and Iran in 1987–1988.³³ It would be with Operations Desert Shield and Desert Storm in 1990–1991 that the United States would make its major military debut in the Middle East, and it would do so in way that clearly indicated the influence of the Decisive Force paradigm.³⁴

While Desert Storm showcased some of the technological innovations that were associated with the Military-Technical Revolution (e.g. PGMs and stealth aircraft), there were at least two major ways in which it was emblematic of the Decisive Force paradigm.³⁵ First, Desert Storm was preceded by 'Desert Shield' the 5 ½ months long operation to move troops into the theater, ostensibly for the defense of Saudi Arabia, but ultimately as the

³⁰ Andrew J. Bacevich, *The New American Militarism: How Americans are Seduced by War* (Oxford: Oxford University Press, 2005), 181.

³¹ Bacevich, *America's War for the Greater Middle East*, 34–35.

³² Bacevich, *America's War for the Greater Middle East*, 38–39.

³³ Salazar Torreon and Plagakis, *Instances of Use of United States Armed Forces Abroad, 1798–2022*, 12–13.

³⁴ Hoffman, *Decisive Force*, 81.

³⁵ Bob Woodward, *The Commanders: The Pentagon and the First Gulf War, 1989–1991* (New York: Simon & Schuster Paperbacks, 2005), 349, 352, 371.

offensive force to expel the Iraqi Army from Kuwait.³⁶ In addition, the total U.S. troop level mustered for the conflict was approximately 540,000.³⁷ For all its technological advances, Desert Storm's long and deliberate build time and massive troop footprint were decidedly not features of the Military-Technical Revolution. Whatever crisis was created by the anomaly of new technology during this period, it was not sufficient to affect a paradigm shift away from Decisive Force. It would take a new era of U.S. military involvement in the Middle East to bring about full conversion to the Military-Technical Revolution.

The preceding sections examine the absence of a Decisive Force to Military-Technical Revolution paradigm shift in pre-9/11 CENTCOM. Not surprisingly, this tendency was reflected in CENTCOM's Iraq contingency planning that took place after Desert Storm but prior to 9/11. The plan that the George W. Bush Administration inherited, called OPLAN 1003-98, called for the deployment of up to half a million troops and was clearly the product of Decisive Force thinking.³⁸ Given the predilection that members of the George W. Bush administration had shown early on for the Military-Technical Revolution, it is in retrospect not surprising that they would demand a revised plan for intervention in Iraq. We now turn to some of the early evidence for Military-Technical Revolution thinking among key Bush administration officials.

6. The RMA Meets Policy Decision-Makers: The Impact of the Military-Technical Revolution on George W. Bush Administration Officials Prior to 9/11

Kuhn identified the important role played by early converts in the process of bringing about paradigm shift.³⁹ For the shift to the Military-Technical Revolution paradigm, key figures in the George W. Bush administration were arguably in this

³⁶ John M. Collins, *Desert Shield and Desert Storm Implications for Future U.S. Force Requirements*, CRS Report No. 91-361RCO (Washington, DC: Congressional Research Service, 1991), 1, <https://www.everycrsreport.com/reports/91-361RCO.html>.

³⁷ Collins, *Desert Shield and Desert Storm Implications for Future U.S. Force Requirements*, 4.

³⁸ Gordon and Trainor, *Cobra II*, 4.

³⁹ Kuhn, *The Structure of Scientific Revolutions*, 157.

vanguard of new believers. Even before the global war on terrorism, it was clear that the Military-Technical Revolution had a major impact on the administration's thinking. This is particularly clear when examining the cases of three individuals: President George W. Bush, Secretary of Defense Donald Rumsfeld, and Deputy Secretary of Defense Paul Wolfowitz.

Proclivities to Military-Technical Revolution thinking are reflected in early speeches made by President Bush. These include remarks made during the 2000 presidential election cycle as well as during his first few months in office. For example, Bush spoke about opportunities provided by a "revolution" in military technology and insisted on the need to create formations that were defined by "mobility and swiftness" rather than size.⁴⁰

Given the thoughts Bush expressed on military matters, it is not surprising that officials selected to serve in his administration expressed similar views. This is perhaps most clear in statements made by Bush's top two appointments at the Pentagon, Rumsfeld, and Wolfowitz. For example, in their congressional confirmation hearings, both men employed language that was clearly influenced by Military-Technical Revolution thinking. In his opening statement Rumsfeld said, "We must take advantage of the new possibilities that the ongoing technological revolution offers to create the military of the next century."⁴¹ He would go on in his statement to insist that "the U.S. defense establishment must be transformed to address our new circumstances." Wolfowitz' testimony echoed Rumsfeld's Military-Technical Revolution-themed statements when he emphasized that one of President Bush's key defense goals was to "take advantage of the technological revolution to help us create a military for the 21st century."⁴² In describing what a future

⁴⁰ John W. Dietrich, ed. *The George W. Bush Foreign Policy Reader: Presidential Speeches and Commentary* (New York: Taylor and Routledge, 2015), 25; and "Remarks by the President at the U.S. Naval Academy Commencement," May 25, 2001, <https://georgewbush-whitehouse.archives.gov/news/releases/2001/05/20010525-1.html>.

⁴¹ *Nominations Before the Senate Armed Services Committee*, 107th Cong. 1 (2001), <https://www.congress.gov/event/107th-congress/senate-event/LC16272/text>.

⁴² *Prepared Statement of Dr. Paul Wolfowitz for his Confirmation Hearing before The Senate Armed Services Committee*, 107th Cong. 1 (2001) (Statement by Paul Wolfowitz), https://www.globalsecurity.org/military/library/congress/2001_hr/010227pw.pdf.

military force must look like, he stated that it should be “at once more agile, more lethal, and more rapidly deployable” all common examples of the kind of qualities that the Military-Technical Revolution was believed to enhance.

After 9/11, the commitment of Bush, Rumsfeld and Wolfowitz to the Military-Technical Revolution would become even more apparent. The need for military action after terrorist attacks on American soil provided an opportunity to fully effect the paradigm change from Decisive Force to the Military-Technical Revolution. As one commentator has observed “The war in Afghanistan provided the first test case” for this new way of war.⁴³

7. The Trial Run: Military-Technical Revolution and Afghanistan

Bacevich notes that it is clear that the Bush administration’s first post-9/11 overseas military campaign, Operation Enduring Freedom, was seen as a validation of the Military-Technical Revolution.⁴⁴ Consisting of only 45,000 Afghan and foreign fighters, a contingent of American special forces, and substantial airpower, the initial U.S.-aligned force achieved an impressively quick margin of victory over the Taliban in places like Mazar-e-Sharif.⁴⁵ By December 2001, a provisional Afghan government was installed in Kabul and the CENTCOM commander, General Tommy Franks, estimated that only 10,000 U.S. troops would be needed to maintain order.⁴⁶ Bolstering Franks’ comments, Rumsfeld also regarded Afghanistan as a triumph of the military-technical revolution. In a 2002 essay in *Foreign Affairs*, he asserted that Afghanistan showed “that a revolution in military affairs is about more than building new high-tech weapons—although that is certainly part of it. It is also about new ways of thinking and new ways of fighting.”⁴⁷

⁴³ Dan Caldwell, “Iraq: ‘The Wrong War at the Wrong Time with the Wrong Strategy,’” Columbia International Affairs Online, August 5, 2007, <https://ciaotest.cc.columbia.edu/casestudy/ciao10029/index.html>.

⁴⁴ Bacevich, *America’s War for the Greater Middle East*, 224.

⁴⁵ Bacevich, *America’s War for the Greater Middle East*, 225–228.

⁴⁶ Bacevich, *America’s War for the Greater Middle East*, 230–231.

⁴⁷ Donald H. Rumsfeld, “Transforming the Military,” in *Foreign Affairs* 81, no. 3 (May/June 2002): <https://www.foreignaffairs.com/articles/2002-05-01/transforming-military>.

While events in the near future, like Operation Anaconda, would demonstrate these positive assessments to be overly optimistic, at the time they provided validation that America's new way of war, inspired by the Military-Technical Revolution, was a recipe for success.⁴⁸ Arguably, this provided further evidence for those in the administration who would seek to use Military-Technical Revolution thinking to guide planning for a future conflict in Iraq.

8. Post-9/11 Iraq War Planning

The contrasts of the Iraq plan the Bush administration started with and what it executed in March 2003 clearly show the fingerprints of the Military-Technical Revolution. The OIF literature contains many excellent explanations detailing the saga of the plan developed by CENTCOM after 9/11 to execute the 2003 invasion of Iraq. *The 9/11 Commission Report* includes multiple examples of senior Bush administration officials discussing the possibility of military action in Iraq in the days and weeks after September 11th.⁴⁹ The original OPLAN 1003-98 that was presented to Secretary Rumsfeld in late 2001, with its half a million-troop threshold and extensive logistical requirements, was a non-starter.⁵⁰ The CENTCOM commander General Franks also expressed his dissatisfaction with OPLAN 1003-98 in a 2014 interview with the Miller Center at the University of Virginia. He provided his recollection of the plan as “massive and cumbersome and very slow.”⁵¹ What followed the initial Iraq brief to Rumsfeld was an iterative planning process between the secretary and his senior staff and General Franks.⁵² As planning progressed, the size of the invasion force shrank ever smaller. By the time the war began in March 2003, the ground invasion force totaled only 145,000 troops.⁵³

⁴⁸ Bacevich, *America's War for the Greater Middle East*, 234.

⁴⁹ National Commission on Terrorist Attacks, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States* (New York: Norton, 2004). 334–336.

⁵⁰ Gordon and Trainor, *Cobra II*, 4.

⁵¹ “Tommy Franks Interview,” George W. Bush Oral History Project, Miller Center, University of Virginia, October 22, 2014, <https://millercenter.org/the-presidency/presidential-oral-histories/tommy-franks-oral-history>.

⁵² Gordon and Trainor, *Cobra II*, 5.

⁵³ Ricks, *Fiasco*, 117.

Gregory Hooker, the senior intelligence analyst for Iraq at CENTCOM when the planning occurred, provides a useful summary of the various intermediate plans in his book *Shaping the Plan for Operation Iraqi Freedom*.⁵⁴

In addition, the Bush administration's comparative lack of planning for post-war stability operations, often referred to as Phase IV, is also well-documented. Perhaps the fundamental flaw in the administration's approach to postwar planning was a mistaken notion that there existed in Iraq an educated, technocratic core who could quickly transition into power after major combat operations ended.⁵⁵ This fact is particularly puzzling because as Ryan points out in *Full Spectrum Dominance*, the Army published FM 3-07, its first field manual specifically devoted to stability operations, in February 2003.⁵⁶ That the Army would publish such a document a month before the invasion began indicates that thinking about stability and thinking about Iraq occurred on simultaneous but parallel tracks that somehow never intersected. The unfortunate consequences that resulted from the combination of a low force level and a lack of post-war planning are perhaps the most important reason this topic warrants continued study.

D. POTENTIAL EXPLANATIONS AND HYPOTHESES

A review of the literature presents at least three hypotheses that warrant detailed examination. Each hypothesis is grounded in the notion that the Bush administration's approach to the Iraq invasion plan in 2003 represented the culmination of a paradigm shift to a new Military-Technical Revolution mental construct.⁵⁷

One hypothesis is that a fixation with the Military-Technical Revolution systematically diverted Bush administration attention from postwar planning (e.g., stability operations and the potential for an insurgency). Postwar planning deals chiefly with the

⁵⁴ Gregory Hooker, *Shaping the Plan for Operation Iraqi Freedom: The Role of Military Intelligence Assessments* (Washington, DC: The Washington Institute for Near East Policy, 2005), 1–7.

⁵⁵ Mazarr, *Leap of Faith*, 96.

⁵⁶ Maria Ryan, *Full Spectrum Dominance: Irregular Warfare and the War on Terror* (Stanford, CA: Stanford University Press, 2019), 40.

⁵⁷ Ricks, *Fiasco*, 127–129.

human domain of warfare, an area not well addressed by a paradigm that largely focused on the employment of new weapons systems.⁵⁸

A second hypothesis is that the Military-Technical Revolution's emphasis on lethality and the ability to swiftly deploy forces biased the Bush administration against deploying large numbers of support troops, the kind of forces that would play a crucial role in Phase IV operations.

A third hypothesis is that early success of the invasion of Afghanistan was a major factor in the decision to approach the Iraq invasion with a minimal force-level. The appeal of the so-called Afghan model was so strong that it led senior leaders to overlook the very obvious and dramatic differences between the two scenarios.

E. RESEARCH DESIGN

This thesis will use Kuhn's concept of paradigm shift to explore the decision to invade Iraq in 2003 with far fewer forces than called for by pre-existing war plans and other analyses of a potential war in Iraq. Using primary government sources like speeches, congressional testimony, declassified briefings and intra-Department of Defense memorandums, as well as secondary sources, I track the rise of a new Military-Technical Revolution paradigm that culminated with the decision to invade Iraq with 145,000 ground troops. The emphasis will be on tracing the prevalence of relevant terms like "Military-Technical Revolution," "Revolution in Military Affairs," and "transformation" as well as explicit arguments stating that new technologies could be substituted for "boots on the ground" force structure, or comparable phrases.

⁵⁸ "Human domain" is a term coined by LTG(R) Charles Cleveland, the former commander of U.S. Army Special Operations Command. He defined it as "that totality of the physical, cognitive, social, cultural, and information elements affecting and influencing human behavior" found at John D. Gresham, "Interview with Lt. Gen. Charles Cleveland, USA, Commanding General, U.S. Army Special Operations Command (USASOC)," Defense media Network, June 16, 2014, <https://www.defensemedianetwork.com/stories/interview-with-lt-gen-charles-cleveland-usa-commanding-general-u-s-army-special-operations-command-usasoc/>.

F. THESIS OUTLINE

The remainder of this thesis will proceed as follows:

The second chapter of the thesis will be a detailed treatment of Kuhn's paradigm shift. It will seek to relate the process of paradigm shift to the notion of RMA. The chapter will show the utility of paradigm shift for this type of analysis, while acknowledging the limitations of applying Kuhn's ideas to a field in security studies.

The third chapter explores the history of the Decisive Force paradigm and compares and contrasts it with the Military-Technical Revolution. It will contain a detailed explanation of origins of Military-Technical Revolution to include the rise of relevant technology in the U.S. during the 1970s, the Soviet conceptual literature on the Military-Technical Revolution, and the broad evolution of U.S. military strategic paradigms from the 1970s to the 1990s.

The fourth chapter is a review of the history of CENTCOM's war plans, starting with OPLAN 1021 and its vision of Soviet invasion of the Persian Gulf, continuing with OPLAN 1002-90 and Desert Storm, and concluding with the version of OPLAN 1003-98 that existed on 9/11. The intent is to clearly demonstrate what level of impact Decisive Force (as opposed to the Military-Technical Revolution) influenced thinking had on American military plans in the Middle East prior to the George W. Bush administration.

The fifth chapter is a detailed analysis of the planning for Iraq that occurred after 9/11, seeking to explore each of the hypotheses mentioned in the research design. The intent is to demonstrate how the Bush administration's commitment to the Military-Technical Revolution affected force-level decisions for the 2003 invasion of Iraq.

The sixth and final chapter will explore the implications of the thesis findings for policy and future research. The United States is likely to find itself with global military responsibilities for the foreseeable future. These commitments might require intervention during a period worldwide dramatic technological change in the shape of AI, quantum computing, hypersonic weapons, etc. What can the lessons of the planning for the 2003 invasion of Iraq provide for us as we seek to make decisions about force posture in future conflicts?

II. PARADIGM SHIFT AND RMA

How does Kuhn's theory of paradigm shift relate to the idea of RMA? This chapter will describe the conceptual relationship between paradigm shift and RMA and why paradigm shift is a useful framework for analyzing the Department of Defense's (DOD) transition from Decisive Force to the Military-Technical Revolution as the mental framework used for planning the invasion of Iraq. The use of the paradigm shift model is highly appropriate for this study because of the similar roles that crises, versions of the notion of normal science, incommensurability, and early converts play in both Kuhn's paradigm shift and RMA. Nevertheless, there are some limitations of applying a model based on the study of the physical sciences to a security studies problem set, most especially in terms of differences in how open the scientific and military communities are to cooperation and external oversight. But before scrutinizing these areas of particular interest, it would be helpful to give slightly more detailed overviews of the key ideas behind paradigm shift and RMA.

A. KUHN'S PARADIGM SHIFT

Thomas Kuhn's landmark volume *The Structure of Scientific Revolutions* analogized paradigms to textbooks that "define the legitimate problems and methods of a research field for succeeding generations of practitioners."⁵⁹ Furthermore, Kuhn noted that paradigms are defined by their ability to "attract an enduring group of adherents away from competing modes of scientific activity" while also being "sufficiently open-ended to leave all sorts of problems for the re-defined group of practitioners to resolve." Kuhn stated that the trigger for a shift in paradigms occurs when an "anomaly" is discovered resulting in "the recognition that nature has somehow violated the paradigm-induced expectations that govern normal science."⁶⁰ Kuhn defined an anomaly as "a phenomenon for which the paradigm had not yet readied the investigator."⁶¹

⁵⁹ Kuhn, *The Structure of Scientific Revolutions*, 10.

⁶⁰ Kuhn, *The Structure of Scientific Revolutions*, 52.

⁶¹ Kuhn, *The Structure of Scientific Revolutions*, 57.

Kuhn went on to describe the sense of crisis that this newfound anomaly imposes on a discipline, resulting in a “period of profound professional insecurity” and an acknowledgement that the “failure of existing rules” precedes the “search for new ones.”⁶² Of course, ingrained ways of thinking are hard to change. Adherents of the old paradigm will seek to gradually modify their preferred concept rather than abandon it in favor of the new model.⁶³ Kuhn acknowledged that conversion happens at the individual level and as such “rather than a single group conversion, what occurs is an increasing shift in the distribution of professional allegiances.”⁶⁴ If it is strong enough, the newfound paradigm will continue to attract believers who will devote their work to proving its validity and expanding its applicability.⁶⁵ Kuhn recognized the new paradigm may never convert everyone in the discipline, but that one who refuses to accept it inevitably becomes a kind of outcast who is effectively exiled from the profession. In the concluding pages of his analysis, Kuhn compared paradigm shift to Darwinian evolution.⁶⁶ Like evolution, paradigm shift has no definitive end state. New paradigms continue to arise in response to anomalies, supplanting their predecessors by virtue of their ability to resolve the resulting crises.

While Kuhn’s work focused on paradigm shifts in the history of the physical sciences, his ideas are readily transportable to other disciplines. Kuhn recognized the wide relevance of his ideas when he wrote “it is not only the scientific community that must be special.”⁶⁷ Indeed, security studies would seem to be one of the fields outside of the physical sciences where discussion of paradigm shift is valuable, especially as it relates to the concept of RMA

⁶² Kuhn, *The Structure of Scientific Revolutions*, 68.

⁶³ Kuhn, *The Structure of Scientific Revolutions*, 155.

⁶⁴ Kuhn, *The Structure of Scientific Revolutions*, 157.

⁶⁵ Kuhn, *The Structure of Scientific Revolutions*, 158.

⁶⁶ Kuhn, *The Structure of Scientific Revolutions*, 171–172.

⁶⁷ Kuhn, *The Structure of Scientific Revolutions*, 172.

B. REVOLUTION IN MILITARY AFFAIRS

The relevance of paradigms shift to RMA is robust and well documented in existing literature. For example, a landmark 1999 RAND Corporation study conducted under the auspices of the Defense Advanced Research Projects Agency provided an especially insightful definition of RMA. For this study, an RMA was “a paradigm shift in the nature and conduct of military operations” that “either renders obsolete or irrelevant one or more core competencies of a dominant player” and/or “creates one or more new core competencies in some new dimension of warfare.”⁶⁸

Using the synonymous term “military revolution” instead of RMA, noted defense analyst Andrew Krepinevich described such a phenomenon as happening “when the application of new technologies into a significant number of military systems combines with innovative operational concepts and organizational adaptation in a way that fundamentally alters the character and conduct of conflict.”⁶⁹ Longtime Office of Net Assessment director Andrew W. Marshall also largely employed the “military revolution” terminology when discussing this phenomenon. In what would become an influential memorandum, Marshall emphasized that while technology was an important aspect of military revolutions, the most essential aspects was the development of pioneering “concepts of operation” and “organizational changes” that would permit a military force to maximize the utility of both existing technology and new technology.⁷⁰ Murray and Knox note that oft-cited examples of historical military revolutions include the development of gunpowder and new fortress architecture during the Middle Ages, the dawn of industrial age warfare defined by telegraph, railroads, and economic mobilization, and the military revolution of WWI that included the use of aircraft, submarines, and combined arms tactics.⁷¹ While different definitions vary slightly, they are united in their understanding

⁶⁸ Hundley, *Past Revolutions, Future Transformations*, xiii.

⁶⁹ Andrew Krepinevich, “Calvary to Computer: The Pattern of Military Revolutions.”

⁷⁰ Andrew W. Marshall, “Some Thoughts on Military Revolutions: Second Version” (official memorandum, Washington, DC: Department of Defense, 1993), 1, <https://stacks.stanford.edu/file/druid:yx275qm3713/yx275qm3713.pdf>.

⁷¹ Williamson Murray and MacGregor Knox, “Thinking About Revolutions in Warfare,” 13.

of the RMA/military revolution as a phenomenon where military forces seek to use innovation (perhaps most prominently but certainly not solely technological innovation) to achieve superiority over their adversaries.

C. PARADIGM SHIFT AND RMA THEORY: AREAS OF INTELLECTUAL INTEROPERABILITY

While the preceding paragraphs should demonstrate the general overlap between Kuhn’s “paradigm shift” and the concept of RMA, their relationship goes far beyond the surface level, with multiple aspects warranting detailed investigation. These include the nature of the paradigmatic crisis as expressed by Kuhn in *Structure* and as experienced historically during RMAs, the relationship between what Kuhn calls normal science and the term operational design, Kuhn’s concept of incommensurability and certain terminological challenges posed by new military technology, and the importance of early converts in both situations.

To begin, a first similarity bearing mentioning is Kuhn’s description of the crisis that spurs scientific revolution and the way a community of military strategists processes competing theories in response to new technology during an RMA. Kuhn wrote that the anomaly-induced crisis before a scientific revolution is characterized by a “proliferation of competing articulations, the willingness to try anything, the expression of explicit discontent, the recourse to philosophy and to debate over fundamentals.”⁷² To reinforce the point, Kuhn quotes Einstein’s description of the scientific crisis that gripped his era: “It was as if the ground had been pulled out from under one, with no firm foundation to be seen anywhere, upon which one could have built.”⁷³

Historical descriptions of RMAs strike similar themes. For example, Johnson’s *Fast Tanks and Heavy Bombers* contains detailed descriptions of debates over how to handle the innovations of aviation and armor during the interwar period. Capturing the spirit of the era he writes:

⁷² Kuhn, *The Structure of Scientific Revolutions*, 91.

⁷³ Kuhn, *The Structure of Scientific Revolutions*, 83–84.

The military forces of France, Great Britain, Germany, and the United States had all experimented with tanks and airplanes on the western front. During the two decades that followed the Great War, these nations and others grappled with the implications of these new weapons and debated the means by which the technologies would be assimilated into their military institutions. From the conceptual choices, tank and airplane doctrines and designs emerged. The results varied from country to country.⁷⁴

In a section specifically addressing the realization by American leaders during World War II that their strategy for bombing Germany would need substantial revision, Johnson writes “When, in the summer of 1943, the Germans proved that heavy bomber formations could not survive without fighter escorts, the Army Air Forces faced a technological crisis.”⁷⁵ As with the struggle for scientific disciplines to integrate data that does not confirm to existing paradigms, militaries must determine how to incorporate revolutionary new technologies (or how to respond to adversaries who incorporate the new technologies first) in order gain an advantage over their opponent.

In addition, there appears to be a strong resemblance between what Kuhn calls normal science and the security studies term operational design and its relationship to RMA-induced paradigm shift. For Kuhn, normal science is what consumes the bulk of a scientific community’s time before the onset of the crisis that heralds the arrival of a paradigm shift.⁷⁶ It is defined as “research firmly based upon one or most past scientific achievements, achievements that some particular scientific community acknowledges for a time as supplying the foundation for its further practice.”⁷⁷ He writes that normal science is “directed to the articulation of those phenomenon and theories that the paradigm already supplies.”⁷⁸ Normal science is like “puzzle-solving” in that the fundamental rules

⁷⁴ David E. Johnson, *Fast Tanks and Heavy Bombers: Innovation in the U.S. Army 1917–1945* (Ithaca, NY: Cornell University Press, 2003), 2.

⁷⁵ Johnson, *Fast Tanks and Heavy Bombers*, 225.

⁷⁶ Kuhn, *The Structure of Scientific Revolutions*, 24.

⁷⁷ Kuhn, *The Structure of Scientific Revolutions*, 24.

⁷⁸ Kuhn, *The Structure of Scientific Revolutions*, 24.

concerning the question at hand are already agreed upon, what falls to the researcher is simply how to employ them to answer the immediate problem.⁷⁹

In a similar way, the security studies term operational design is like a kind of puzzle-solving methodology that seeks to answer a military problem, but without questioning the overall strategic paradigm it exists within. As normal science defines the limits of the kinds of research that can be done withing a given scientific paradigm, operational design might represent the borders of problem solving that can occur during a given RMA-era. DOD Joint Publication 1-02 defines operational design as “The conception and construction of the framework that underpins a campaign or major operation plan and its subsequent execution.”⁸⁰ Joint Publication 5-0 elaborates on this definition, stating that operational design is an “analytical framework that underpins planning. Operational design supports commanders and planners in organizing and understanding the [Operational Environment] as a complex interactive system.”⁸¹ Joint Publication 3-0 provides a checklist of the “elements” of operational design, that includes things like “forces and functions,” “lines of operation” and the “military end state.”⁸² From the discussion in these publications, one could imagine operational design as something akin to Kuhnian normal science. It is not equipped to challenge the foundations of the prevailing conception of the character of warfare, instead it is more of an intellectual toolkit for resolving the puzzles that the existing military paradigm knows to exist and is comfortable addressing. In the same way that it takes an anomaly that normal science cannot account for to trigger a crisis and subsequent scientific revolution, it may well be the case that the failure of the existing elements of operational design to address a new military problem might induce a crisis that could lead to an RMA.

⁷⁹ Kuhn, *The Structure of Scientific Revolutions*, 42.

⁸⁰ Joint Chiefs of Staff, *Department of Defense Dictionary of Military and Associated Terms*, JP 1-02 (Washington, DC: Joint Chiefs of Staff, 2016), 175, <https://apps.dtic.mil/sti/pdfs/AD1024397.pdf>.

⁸¹ Joint Chiefs of Staff, *Joint Planning*, JP 5-0 (Washington, DC: Joint Chiefs of Staff, 2020), xxi, https://irp.fas.org/doddir/dod/jp5_0.pdf.

⁸² Joint Chiefs of Staff, *Joint Operations*, JP 3-0 (Washington, DC: Joint Chiefs of Staff, 2011), II-5, <https://www.benning.army.mil/mssp/security%20topics/Potential%20Adversaries/content/pdf/JP%203-0.pdf>.

Kuhn's notion of incommensurability and the problems that it poses for using common terms across different paradigms would also seem to have RMA implications. He describes "incommensurability" as a situation where "proponents of competing paradigms...fail to make complete contact with each other's viewpoints."⁸³ Kuhn notes that this is at least in part because different paradigms might use the same term to describe totally different phenomenon.⁸⁴ For example, Newton and Einstein both employed the term "space" but they had very distinct conceptions of what that word mean in the context of their competing theories of physics. Carried to its logical extreme, Kuhn notes that the people operating under different paradigms would seem to be living in "different worlds."⁸⁵

The same incommensurability problem would seem to plague military theorists existing across two different RMA-eras. For example, for centuries, in many armies ideas about reconnaissance were inextricably linked to the notion of horse cavalry.⁸⁶ But with the mechanization RMA that began during World War I, this notion quickly became wholly antiquated.⁸⁷ Indeed, even the meaning of "cavalry" itself radically evolved over time to become, in a practical sense, totally dissociated with horses by the second half of the 20th century.⁸⁸ Likewise, the radical changes made to military strategy after the introduction of nuclear weapons (to include a slew of new terminology) could be thought of as rendering people occupying opposite sides of that RMA as living in "different worlds" per Kuhn's conception.⁸⁹

⁸³ Kuhn, *The Structure of Scientific Revolutions*, 147.

⁸⁴ Kuhn, *The Structure of Scientific Revolutions*, 148.

⁸⁵ Kuhn, *The Structure of Scientific Revolutions*, 149.

⁸⁶ John J. McGrath, *Scouts Out! The Development of Reconnaissance Units in Modern Armies* (Fort Leavenworth, KS: Combat Studies Institute, 2008), 1, https://permanent.fdlp.gov/LPS113722/LPS113722/www-cgsc.army.mil/carl/download/csipubs/scouts_out.pdf.

⁸⁷ John J. McGrath, *Scouts Out!*, 197.

⁸⁸ John J. McGrath, *Scouts Out!*, 2.

⁸⁹ Andrew L. Ross, "The Role of Nuclear Weapons in International Politics," (lecture, Foreign Policy Research Institute History Institute on "Teaching the Nuclear Age," Atomic Testing Museum, Las Vegas, NV 28–29 March, 2009), <https://www.fpri.org/wp-content/uploads/2015/08/ross.nuclearintlpoliticsslides1.pdf>; and Kuhn, *The Structure of Scientific Revolutions*, 149.

A final point of similarity worth discussing here is the important role played by early converts in both systems. Kuhn says of early converts that “Any new interpretation of nature, whether a discovery or a theory, emerges first in the mind of a few individuals. It is they who learn to see science and the world differently.”⁹⁰ He goes on to identify two characteristics that define these early converts and separate them from the rest of the field: their relative youth or inexperience within the discipline and their intense focus on the areas of study that have generated the anomaly producing crisis. Kuhn recognizes that these young converts also recognize their limited ability to convince established scientists invested in the old paradigms of the validity of their new findings.⁹¹ For example, he notes that it took almost 50 years for the ideas Newton expressed in *Principia* to gain a wide audience, and that Darwin’s theory of natural selection also met fierce resistance. Nevertheless, the new paradigm’s ability to solve problems irresolvable under the old paradigm ultimately wins out, even if that does not occur until the previous generation of eminent scientists passes away.⁹²

Early converts also play a pivotal role in RMAs, and often have the same qualities of relative youth and intense subject area focus described by Kuhn. For example, one of the fathers of American military aviation, Billy Mitchell, began having a substantive impact on the American use of aircraft during World War I while only a major.⁹³ Mitchell started working in assignments in Army aviation before the United States entered the war, and also served as a military observer of the conflict in Europe before the United States declared war.⁹⁴ These experiences provided him with unique insight that made his opinions on aviation valuable to senior officers, despite his junior rank. Mitchell’s recommendation that the American Expeditionary Force (AEF) create an air arm were forwarded to a board convened to study AEF aviation policy. The board found Mitchell’s recommendations highly compelling and reiterated his sentiments when it stated that “It is now a cardinal

⁹⁰ Kuhn, *The Structure of Scientific Revolutions*, 143.

⁹¹ Kuhn, *The Structure of Scientific Revolutions*, 150.

⁹² Kuhn, *The Structure of Scientific Revolution*, 152.

⁹³ Johnson, *Fast Tanks and Heavy Bombers*, 45.

⁹⁴ Johnson, *Fast Tanks and Heavy Bombers*, 45–46.

principle in warfare that a decision in the air must be sought and obtained before a decision on the ground can be reached.... The side which can at critical times dominate the enemy in the air has taken the first, if not the vital, step toward victory.”⁹⁵

Similarly, Hyman Rickover’s early experience as a submarine officer, his exceptional engineering competence, and his tour of duty at the Oak Ridge National laboratory were critical factors in his rise as the Navy’s top nuclear expert and ultimately paving the way for his status as father of the nuclear Navy.⁹⁶ The chief historian of the Atomic Energy Commission noted that “Rickover as an individual made the difference between an ordinary developmental project and one that was truly exceptional” and also assessed that “it seems clear that Rickover demonstrated the effectiveness of a highly personalized approach to technological innovation.”⁹⁷ Together, the cases of Mitchell and Rickover demonstrate the applicability of Kuhn’s insights about the personal characteristics and potential for influence of early scientific converts also extends to military innovation pioneers during RMAs.

D. CHIEF DIFFERENCE: COOPERATION INCENTIVES

Perhaps the single biggest difference between Kuhn’s paradigm shift and an RMA are the incentive structures supporting/inhibiting cooperation that are at play for members of scientific communities as compared to military communities. The collaborative nature of scientific research, with its public peer-reviewed journals and requirement to build on the findings of others would seem to make it a relatively open space well suited for sharing new information. This would perhaps serve to expedite the transition to a new scientific paradigm. But military communities, by their very nature concerned with threats from adversaries and habituated to keeping secrets, might not be as well suited to publicize their realization of an emerging RMA out of concern that doing so might cede advantages to a potential threat.

⁹⁵ Johnson, *Fast Tanks and Heavy Bombers*, 45–46.

⁹⁶ Richard G. Hewlett and Francis Duncan, *Nuclear Navy: 1946–1962* (Chicago, IL: The University of Chicago Press, 1974), 32, 192–193, <https://www.energy.gov/sites/prod/files/2013/08/f2/HewlettandDuncanNuclearNavyComplete.pdf>.

⁹⁷ Hewlett and Duncan, *Nuclear Navy*, 384, 391.

Kuhn's description of the scientific community at large makes it out to be a place almost ideally constructed for working together in for the creation and propagation of new knowledge. In the postscript to *Structure*, he wrote "the members of a scientific community see themselves and are seen by others as the men uniquely responsible for the pursuit of a set of shared goals, including the training of their successors."⁹⁸ He went on to make the point even more explicit when he stated that "within such groups communication is relatively full and professional judgment relatively unanimous." In general, these qualities are less applicable to military communities.

Military communities, especially those existing in different countries that are not politically aligned, are not well-suited for open communication and information sharing. Therefore, I argue that recognition of an emerging RMA might not gain widespread recognition as quickly as a newly discovered paradigm does in the scientific community. To begin, the need to keep national security secrets is a natural impediment to international military cooperation on some matters. Even if the existence of the relevant technologies is not a secret, strategic rivalry as well as linguistic and cultural factors might impede wide dissemination of recognition of a new RMA. For example, although it was the United States that first developed the technological components of what could become the Military-Technical Revolution (PGMs, etc.) it was the Soviet Union that first championed the argument that the "new range of technological innovations constituted a fundamental discontinuity in military affairs."⁹⁹ The fact that American defense analysts only came to this realization later would seem to indicate the lack of easy information flow across at least some elements of the international defense intellectual community.

Furthermore, individual military services do not exist within a vacuum. At the national level, they must compete for finite budgetary resources. It is conceivable that if an emerging technology might herald a new RMA, and if that RMA will not necessarily benefit all services equally, then it will not experience mass adoption or recognition. For example, the Eisenhower administration recognized the development of nuclear weapons

⁹⁸ Kuhn, *The Structure of Scientific Revolutions*, 176.

⁹⁹ Adamsky, *The Culture of Military Innovation*, 24.

as an RMA-event and responded accordingly with its New Look strategy, which aimed at deterring nuclear war through the threat of massive retaliation while making budget saving cuts to conventional ground forces.¹⁰⁰ Because the new nuclear paradigm threatened its prestige and resources, senior American Army leaders resisted embracing at least some of the prevailing notions of this RMA.

Notwithstanding these differences, using Kuhn's paradigm shift as the methodological approach for exploring an instance of RMA change is highly appropriate. In addition to the general resemblance of the two ideas, they are deeply related when it comes to the similar roles that crises, versions of the notion of normal science, incommensurability, and early converts play in both concepts. With this structure in mind, we will now turn to an examination of the origins of two competing security paradigms: Decisive Force and the Military-Technical Revolution.

¹⁰⁰ Andrew J. Bacevich, *The Pentomic Era: the U.S. Army Between Korea and Vietnam* (Barakaldo Books E-Book Edition, 2020 edition), 25.

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III. DECISIVE FORCE AND THE MILITARY-TECHNICAL REVOLUTION

Between the 1970s and early aughts, the U.S. defense establishment underwent a paradigm shift that, by the time of the George W. Bush administration, fundamentally transformed its approach to planning for war.¹⁰¹ This was the paradigm shift from the concept of Decisive Force to the Military-Technical Revolution. While both paradigms had roots in the 1970s, it was Decisive Force that became dominant first, especially in light of the perceived overwhelming success of Coalition forces in ousting Iraq from Kuwait during Desert Storm in 1991. But in the following decade, Decisive Force would come to appear ill-suited for meeting America's post-Cold War security requirements. This perception, coupled with advances in technology, were anomalies in the Khunian sense that opened the door for a crisis that led to an RMA resulting in the transition to the Military-Technical Revolution as the reigning American national security paradigm.

This chapter will begin with an overview of Decisive Force, beginning with its definition and a sketch of its history beginning with its origins in the post-Vietnam era and culminating with its official endorsement by the Joint Staff in the early 1990s. The discussion will then shift to perceived shortcomings of Decisive Force and how the Military-Technical Revolution paradigm came to be viewed as holding the solution for these problems. This discussion is critical, because it sets the stage for the following two chapters, which trace the changing relative influence of Decisive Force and Military-Technical Revolution thinking on CENTCOM war planning in the periods prior to and after September 11, 2001.

A. DECISIVE FORCE: DEFINITIONS AND ORIGINS

The 1992 National Military Strategy described Decisive Force in these terms:

Once a decision for military action has been made, half-measures and confused objectives exact a severe price in the form of a protracted conflict which can cause needless waste of human lives and material resources, a divided nation at home, and defeat. Therefore, one of the essential elements

¹⁰¹ Bacevich, *The New American Militarism*, 149.

of our national military strategy is the ability to rapidly assemble the forces needed to win—the concept of applying decisive force to overwhelm our adversaries and thereby terminate conflicts swiftly with minimum loss of life.¹⁰²

Hoffman saw Decisive Force as a concept with a strong precedent in American strategic culture. His book favorably quotes Weigley's *The American Way of War*, which states that Americans are habituated to favor “winning victory by the means sanctioned by the most deeply rooted historical American conceptions of strategy, the destruction of the enemy's armed forces and his ability to wage war.”¹⁰³ Speaking in even more stark terms, Hoffman contended that Americans have “a preference for total war” in the Clausewitzian sense of marshalling the full power of the state and society in pursuit of violent and overwhelming victory.¹⁰⁴ Hoffman described this inclination as “absolutism,” which he defined as “warfare fought for unlimited ends by the complete destruction of the enemy's capacity to resist, including both the enemy's military forces and war-making capability.”¹⁰⁵

In his definitive history of the Decisive Force paradigm, Hoffman traced the concept's modern origins back to the post-Vietnam War period, when some American officers, in an effort to explain why the United States had been unable to secure victory over what seemed to be an obviously inferior foe, began to claim that political leaders in Washington had forced the military to “fight with one hand tied behind its back” by not providing adequate resources to fight the war and limiting the operational freedom of commanders on the ground.¹⁰⁶ This theme is evident in the memoirs of senior leaders, to include General Westmoreland's *A Soldier Reports* and former Pacific Command Commander in Chief Admiral U.S. Grant Sharp's *Strategy for Defeat*.¹⁰⁷ While Hoffman

¹⁰² Joint Chiefs of Staff, *The National Military Strategy of the United States of America* (Washington, DC: The Joint Chiefs of Staff, 1992), 10, <https://history.defense.gov/Portals/70/Documents/nms/nms1992.pdf?ver=AsfWYUHa-HtcvnGGAuWXAg%3d%3d>.

¹⁰³ Weigley, *The American Way of War*, 464–465.

¹⁰⁴ Hoffman, *Decisive Force*, 8.

¹⁰⁵ Hoffman, *Decisive Force*, 9–10.

¹⁰⁶ Hoffman, *Decisive Force*, 21.

¹⁰⁷ Hoffman, *Decisive Force*, 22.

found this to be a dubious claim, he demonstrated that it had tremendous currency within the military and that it led to a conviction that future wars would need to be properly resourced to avoid defeat, to include ensuring that sufficient troops were provided for the mission at hand.¹⁰⁸

To put things in a Kuhnian paradigm shift perspective, the American defeat in Vietnam represented an anomaly in American military history that led to kind of intellectual crisis. How could the military of one of the world's only two superpowers, the military that had triumphed in the Pacific Theater and the European Western Front, the only military to use a nuclear weapon in combat, how could that military lose to a band of revolutionary peasants in a small Asian country? For many military officers, the answer was that "the war was won on the battlefield tactically, but lost at the strategic and political level due to self-imposed limitations on force."¹⁰⁹ *Decisive Force* would serve as a new paradigm that would seem to promise to resolve the contradictions of Vietnam.

Hoffman went on to argue that the 1982–1983 U.S. Marine Corps peacekeeping intervention in Lebanon reinforced the aforementioned lessons from Vietnam.¹¹⁰ Once again, the argument went, the military force deployed was too small and under resourced for the mission at hand, resulting in the needless death of 241 Marines from a terrorist bombing. In response, Secretary of Defense Caspar Weinberger (who had been critical of the decision to send the Marines to Lebanon) issued a six-point checklist of the conditions that would need to be met in the future to reasonably deploy military forces.¹¹¹ Per the so-called Weinberger Doctrine, future military deployments should only occur:

1. In support of vital U.S. interests.
2. With the full and wholehearted intent of "winning."
3. With clearly defined political and military objectives.
4. When circumstances change, reassessments must determine if force is still required.
5. With "reasonable assurance" of public and congressional support.

¹⁰⁸ Hoffman, *Decisive Force*, 32–33.

¹⁰⁹ Hoffman, *Decisive Force*, 21.

¹¹⁰ Hoffman, *Decisive Force*, 54.

¹¹¹ Hoffman, *Decisive Force*, 47.

6. Only as a last resort, when all other means have failed.¹¹²

According to Hoffman, these criteria were in keeping with the lessons from Vietnam and were an important milestone on the road to the codification of Decisive Force in 1992.

Operation Just Cause, the 1989 invasion of Panama to depose Manuel Noriega, marked the turning point for when the principles of Decisive Force were firmly applied to an American military operation in the post-Vietnam era.¹¹³ Involving 25,000 troops, hundreds of fixed and rotary winged aircraft, and a plan to attack 27 separate targets, Panama showcased the kind of application of overwhelming force in pursuit of a clear objective that critics claimed was missing from Vietnam.¹¹⁴ In the words of one biographer of General Colin Powell, Panama was “exactly what Operation Desert Storm would later become: a distillation of nearly every lesson learned from the Vietnam War.”¹¹⁵ Powell himself made a similar point in an interview for a documentary marking the fifth anniversary of the Panama conflict when he said “From 1973 roughly, to the time of Desert Storm, we rebuilt the Army, we got rid of our syndrome, we internalized the way we’re supposed to fight wars. We fought war that way in Panama when we went in and took down the Noriega regime, and we fought it again in Desert Shield and Storm.”¹¹⁶

Hoffman states that if Operation Just Cause was a kind of “dress rehearsal” for Decisive Force, then Operation Desert Storm was the “real show.”¹¹⁷ Desert Storm ultimately involved over 500,000 troops, a number that exceeded even CENTCOM’s request. The introductory overview to the Pentagon’s official after action report on Desert Storm states that President George H.W. Bush “sought to ensure that if U.S. forces were to go into battle, they would possess decisive force— the U.S. would have enough military

¹¹² Hoffman, *Decisive Force*, 47.

¹¹³ Hoffman, *Decisive Force*, 62.

¹¹⁴ Hoffman, *Decisive Force*, 73.

¹¹⁵ Howard Means, *Colin Powell: A Biography* (New York: Ballantine, 1992), 246.

¹¹⁶ “Oral History: Colin Powell,” PBS, last modified January 9, 1996, <https://www.pbs.org/wgbh/pages/frontline/gulf/oral/powell/1.html>.

¹¹⁷ Hoffman, *Decisive Force*, 81.

strength to be able to seize and maintain the initiative and to avoid getting bogged down in a long, inconclusive war.”¹¹⁸ Explicitly linking the success of Desert Storm to lessons learned from the failures of Vietnam, the report states that “the foundation of Operation Desert Storm was laid in the immediate aftermath of Vietnam.”¹¹⁹

It is possible to draw a bright line from perceptions about the reasons for American failure and Vietnam and the rise of the Decisive Force paradigm.¹²⁰ Those lessons about the importance of overwhelming force were learned in Vietnam, reinforced in Lebanon, tested in Panama and perceived as validated in Iraq during Desert Storm.¹²¹ The inclusion of the phrase Decisive Force in the 1992 NMS represented the apex of its status as the dominant paradigm.¹²² But as with the natural selection metaphor Kuhn used to describe paradigms in the context scientific revolutions, military strategic paradigms are also not destined to be eternal. Early on, there were concerns about the ideas behind Decisive Force, ideas that in some ways came to a head in the 1990s. These anomalies would arguably set the stage for the paradigm shift to the Military-Technical Revolution.

B. ANOMALIES AND THE CRISIS OF DECISIVE FORCE

To begin, in the aftermath of the Vietnam War, there were dissenters from the Decisive Force narrative who argued that it was not a lack of resources or troops that led to American defeat in Vietnam. Hoffman notes that some argued that the United States had never really committed itself to the kind of counterinsurgency operations that the war in Vietnam required, and that larger numbers of conventional forces would not have made the difference necessary to win.¹²³ He points to Krepinevich, who published *The Army and Vietnam* while still on active duty as an Army major, as an example of such a person..

¹¹⁸ Department of Defense, *Conduct of the Persian Gulf War: Final Report to Congress* (Washington, DC: Department of Defense, 1992), x, <https://apps.dtic.mil/sti/pdfs/ADA249270.pdf>.

¹¹⁹ Department of Defense, *Conduct of the Persian Gulf War*, 413.

¹²⁰ Hoffman, *Decisive Force*, 21.

¹²¹ Hoffman, *Decisive Force*, xii-xiii.

¹²² Hoffman, *Decisive Force*, 100.

¹²³ Hoffman, *Decisive Force*, 24.

Another active duty major, Mark Clodfelter of the Air Force, advanced a similar argument as it relates to air power in his book *The Limits of Airpower*.¹²⁴ He contended that the central air war issue in Vietnam was not a lack of bombing as claimed by advocates for the aerial aspect of Decisive Force, but that the strategic bombing missions the Air Force developed in the European theater during WWII were not appropriate to the counterinsurgency war in Vietnam. Like Krepinevich, he represented a dissenting voice to the origin story of Decisive Force.

In addition to whatever foundational gaps the logic for Decisive Force may have had, additional problems began to arise during the 1990s when it became apparent that the post-Cold War world might call for U.S. military interventions not suitable to rapid and overwhelming deployment of U.S. forces. Chief among its early critics was Congressman Les Aspin, the Chairman of the House Armed Services Committee and later President Clinton's Secretary of Defense.¹²⁵ Aspin criticized what he called the "all or nothing" logic of Decisive Force, and instead advocated for the "limited objectives" school of thought, which saw a major role for military forces in scenarios short of the kind of major conventional conflict represented by Desert Storm. In the months after Aspin's confirmation as the Secretary of Defense, the Pentagon conducted a "bottom-up review" in response to "the dramatic changes that have occurred in the world as a result of the end of the Cold War" and the attendant need to "reassess all of our defense concepts, plans, and programs from the ground up."¹²⁶ While it of course did not discount the possibility that the United States might need to fight another major conventional war, *The Report on the Bottom-Up Review* did find that "in this new era, U.S. military forces are more likely to be involved in operations short of declared or intense war."¹²⁷ Aspin noted the recent American intervention in Somalia's civil war and noncombatant evacuation operations in

¹²⁴ Hoffman, *Decisive Force*, 26.

¹²⁵ Hoffman, *Decisive Force*, 101–102.

¹²⁶ Les Aspin, *Report on the Bottom-Up Review* (Washington, DC: Department of Defense, 1993), iii, <https://apps.dtic.mil/sti/pdfs/ADA359953.pdf>.

¹²⁷ Les Aspin, *Report on the Bottom-Up Review*, 8.

Liberia as examples of this kind of operation that had already occurred.¹²⁸ The report recognized the role that new technologies would need to play in these missions when it stated:

The revolution in weapons technology also suggests that we must reexamine our concepts for employing certain weapons—tanks, aircraft, missiles, and the like—on the battlefield. Advances in information technology, materials and electronics, if properly incorporated into weapons, hold promise for providing significant advantages for U.S. forces against potential adversaries.¹²⁹

It would seem that with the report, the Pentagon was acknowledging that the national security world might be undergoing another RMA paradigm shift. Just as Decisive Force arose to account for the crisis posed by America's anomalous losses in Vietnam and Lebanon, a new paradigm was needed to account for changes in technology and missions for which Desert Storm seemed poor preparation. As a result, the stage was set for embracing the lessons of the Military-Technical Revolution, the topic to which our attention now turns.

C. THE ORIGINS OF THE MILITARY-TECHNICAL REVOLUTION: AMERICAN WEAPONS AND SOVIET IDEAS

While the majority of the American defense establishment would not realize their full significance for some time, the seeds of Military-Technical Revolution were planted during the same era that the lessons of Vietnam were shaping Decisive Force. In *The Culture of Military Innovation*, Adamsky notes that the foundational technologies of the Military-Technical Revolution were developed by the United States in the 1970s when “stand-off, precision guided munitions were introduced.”¹³⁰ PGMs that offered the possibility of hitting targets with near certainty, saw service in Vietnam near the end of the war.¹³¹ However, while it was the Americans who first developed PGMs, it was the Soviets

¹²⁸ Les Aspin, *Report on the Bottom-Up Review*, 9.

¹²⁹ Les Aspin, *Report on the Bottom-Up Review*, 33.

¹³⁰ Adamsky, *The Culture of Military Innovation*, 3.

¹³¹ Bacevich, *The New American Militarism*, 159.

who realized their potential strategic significance, and decreed that their arrival marked the dawn of what they called the Military-Technical Revolution.¹³²

Beginning in the late 1970s, military strategists in the USSR began to produce groundbreaking works on the potential impact of the Military-Technical Revolution. Moran identified one key milestone as a 1984 article in the magazine *Krasnaya Zvezda* (Red Star) where Nikolai V. Ogarkov, the Soviet chief of the general staff, warned that these developments could possibly create parity between conventional and tactical nuclear weapons.¹³³ Furthermore, Soviet theorists recognized that these deep-strike weapons had the potential to upset the balance between offensive and defensive forces, because defenders were now able to repel potential attackers before they even crossed the border to leave their own country.¹³⁴

However, for all their theoretical insight, the Soviets were unable to capitalize on their ideas. There are a number of reasons for this. First, Orgakov, the Soviet general most closely associated with the Military-Technical Revolution, lost support from senior political leaders, tainting his ideas in the process.¹³⁵ Furthermore, by this late stage in its history, the Soviet Union's economic wherewithal was not sufficient to undertake a major defense research and rearmament program.¹³⁶ In addition, starting from 1979, the USSR was bogged down waging a counterinsurgency in Afghanistan, a style of combat generally ill-suited for the kind of warfare advocated by the Military-Technical Revolution.¹³⁷ Finally, there was arguably something in the Soviet strategic culture that appeared to be inconsistent to waging war on the terms of the Military-Technical Revolution.¹³⁸ This style of combat called for decentralized decision-making and for junior leaders to seize the

¹³² Adamsky, *The Culture of Military Innovation*, 3.

¹³³ Murray and Knox, "Thinking About Revolutions in Warfare," 3. Daniel Moran, "On Revolution" in *Transforming Defense Capabilities: New Approaches for International Security*, ed. Scott Jasper (Boulder: Lynne Rienner Publishers 2009): 28.

¹³⁴ Adamsky, *The Culture of Military Innovation*, 30–31.

¹³⁵ Adamsky, *The Culture of Military Innovation*, 37.

¹³⁶ Adamsky, *The Culture of Military Innovation*, 38.

¹³⁷ Adamsky, *The Culture of Military Innovation*, 39.

¹³⁸ Adamsky, *The Culture of Military Innovation*, 53.

initiative. These were not attributes of military units in the USSR, which were highly hierarchical and defined by strict command and control channel. In addition, despite the materialist underpinnings of their communist ideology, Soviet military leaders remained skeptical of technology in general, tending to believe that the key to victory lay in the mass application of human force and the moral superiority of the Russian people.¹³⁹ For all of these reasons, it fell to the United States to bring the Military-Technical Revolution to fruition.

D. THE BEGINNINGS OF THE AMERICAN MILITARY'S PARADIGM SHIFT TO THE MILITARY-TECHNICAL REVOLUTION

While they would arguably not come into prominence until the 1990s, there were early American advocates who foresaw the potential for something like the Military-Technical Revolution as far back as the Vietnam War. One of its American intellectual godfathers was the political scientist and onetime RAND analyst Albert Wohlstetter. Bacevich notes that as early as 1968, Wohlstetter became concerned that discontent with Vietnam might convince both the American public and senior Pentagon leaders that military force was, in Bacevich's words, "something to be employed with considerable reluctance and only when truly vital national interests were at stake."¹⁴⁰ Although Vietnam shaped the preference of many military officers in the image of what would become Decisive Force, for Wohlstetter and likeminded defense intellectuals, this "all or nothing" approach was a dangerous proposition in a world of nuclear weapons. Instead, they argued that the American military needed tools that would allow for intervention without the resort to mass armies.¹⁴¹

Per Wohlstetter, the PGMs introduced during the final years of the Vietnam War represented a potential innovation in this direction.¹⁴² In a 1983 article in *Commentary*, he stated that "a tenfold improvement in accuracy is roughly equal in effectiveness to a

¹³⁹ Adamsky, *The Culture of Military Innovation*, 44–45.

¹⁴⁰ Bacevich, *The New American Militarism*, 158.

¹⁴¹ Bacevich, *The New American Militarism*, 159.

¹⁴² Bacevich, *The New American Militarism*, 159.

thousandfold increase in the explosive energy released by a weapon” that would improve “blast effectiveness against a small, hard military target.”¹⁴³ He went on to predict that “terminal guidance systems in development now that can be deployed in the late 1980s could further reduce inaccuracies at extended ranges by another order of magnitude. That would permit a conventional weapon to replace nuclear bombs in a wide variety of missions.”¹⁴⁴

The apex of Wohlstetter’s contribution to helping the United States understand the significance of the Military-Technical Revolution was his co-chairing of the 1987 Commission on Integrated Long-Term Strategy.¹⁴⁵ Titled *Discriminate Deterrence*, the committee’s final report stated that the United States needed to “exploit emerging technologies of precision, control, and intelligence that can provide our conventional forces with more selective and more effective capabilities for destroying military targets.”¹⁴⁶ The report also called for “versatile, mobile forces, minimally dependent on overseas bases, that can deliver precisely controlled strikes against distant military targets.”¹⁴⁷ One can clearly see the influence of the Military-Technical Revolution in these recommendations, even in the midst of the era when Decisive Force was the dominant paradigm. The Commission on Integrated Long-Term Strategy formed an ad hoc task force in 1988 with Andrew W. Marshall, head of the Pentagon’s Office of Net Assessment, as a co-chair.¹⁴⁸ It would be Marshall who would pick up Wohlstetter’s advocacy mantle for the notion that innovations in information technology would remake war’s conduct.¹⁴⁹

¹⁴³ Albert Wohlstetter, “Bishops, Statesmen, and Other Strategists on the Bombing of Innocents,” *Commentary* 75 no. 6 (June 1983), 573, <https://www.jstor.org/stable/resrep12137.26>.

¹⁴⁴ Wohlstetter, “Bishops, Statesmen, and Other Strategists on the Bombing of Innocents,” 573.

¹⁴⁵ Adamksy, *The Culture of Military Innovation*, 66.

¹⁴⁶ Fred C. Ikle and Albert Wohlstetter, *Discriminate Deterrence: Report of the Commission on Integrated Long-Term Strategy* (Washington, DC: Department of Defense, 1988), 2, <https://ntrl.ntis.gov/NTRL/dashboard/searchResults/titleDetail/PB89219307.xhtml>.

¹⁴⁷ Ikle and Wohlstetter, *Discriminate Deterrence*, 3.

¹⁴⁸ Adamsky, *The Culture of Military Innovation*, 66.

¹⁴⁹ Bacevich, *The New American Militarism*, 165.

After Wohlstetter, Andrew W. Marshall was the other great American advocate of the Military-Technical Revolution paradigm during the era of Decisive Force's dominance. The working group that Marshall was appointed to by Wohlstetter produced a report called *The Future Security Environment* published in October 1988. It stated that new technologies had the potential to "enable armed forces to strike more deeply and accurately than ever before" but that in an adversary's hands they could "increase the likelihood of sustained and effective attacks on [American military] command and control organs."¹⁵⁰ The report called out stealth technology, unmanned vehicles, and "standoff, very high accuracy weapons" as examples of the kinds of innovations they forecasted as arising in the near future to change the character of warfare.¹⁵¹

Perhaps Marshall's most well-known contribution to advancing thinking about the Military-Technical Revolution paradigm was a memorandum he wrote in 1993 called "Some Thoughts on Military Revolutions." In the memorandum, Marshall made extensive reference to Soviet theories about innovation and identifies two key areas that he thought would define the emerging military paradigm: "long range precision strike" and "information warfare."¹⁵² He noted that the Soviets had referred to their long range precision weapons systems as "reconnaissance strike complexes" and anticipated that in the future these "operations may also play a very prominent role in power projection, war at sea, and space."¹⁵³ Of information warfare, Marshall expected that it "may become increasingly central to the outcome of battles and engagements, and therefore the strategy and tactics of establishing information superiority over one's adversary will become a major focus of the operational art." Interestingly, although Desert Storm was regarded by most people in the early 1990s as the epitome of a Decisive Force paradigm operation, Marshall saw additional variables at play. From a military innovation perspective, Marshall

¹⁵⁰ Andrew W. Marshall and Charles Wolf, *The Future Security Environment: Report of the Future Security Environment Working Group, submitted to the Committee on Integrated Long-Term Strategy* (Washington, DC: Department of Defense, 1988), 27, <https://apps.dtic.mil/sti/pdfs/ADA528366.pdf>.

¹⁵¹ Marshall and Wolf, *The Future Security Environment*, 28–30.

¹⁵² Andrew W. Marshall, "Some Thoughts on Military Revolutions: Second Version" (official memorandum, Washington, DC: Department of Defense, 1993), 3–4, <https://stacks.stanford.edu/file/druid:yx275qm3713/yx275qm3713.pdf>.

¹⁵³ Marshall, "Some Thoughts on Military Revolutions," 4.

compared Desert Storm to Cambrai, the World War I battle known for its pioneering integration of massed-tank assault and large scale artillery barrage.¹⁵⁴ Like Cambrai, Desert Storm was “a first trial of new technology and new ways of operating.”¹⁵⁵ Seemingly for Marshall, it was not the large mass of forces involved in Desert Storm that would provide enduring lessons for strategists, but the fact that the war had seen the use of emerging technologies like cruise missiles and stealth aircraft.¹⁵⁶

E. THE 1997 QUADRENNIAL DEFENSE REVIEW AS A DECISIVE FORCE/MILITARY-TECHNICAL REVOLUTION COMPROMISE

It seems that by the late 1990s, the United States military found itself in a period of paradigmatic uncertainty. On one hand, the 1991 Gulf War still stood out in recent memory as a generational triumph that validated the Decisive Force paradigm and, in the words of President George H.W. Bush, “licked the Vietnam syndrome once and for all.”¹⁵⁷ On the other hand, the work of defense intellectuals like Wohlstetter and Marshall, as well as Secretary Aspin’s *Report on the Bottom-Up Review*, indicated that the combination of emerging technologies and new mission sets brought on by the end of the Cold War could leave Decisive Force wanting. For them, the Military-Technical Revolution would be the more appropriate strategic framework for this new era.

The 1997 *Quadrennial Defense Review* (QDR) perfectly captures this intellectual tug of war between Decisive Force and the Military-Technical Revolution, and it is a fitting place to conclude the present chapter. Per a DOD factsheet on the QDR, the document was required by Congress as a part of the 1997 National Defense Authorization Act.¹⁵⁸ Congress mandated that the Secretary of Defense:

¹⁵⁴ Marshall, “Some Thoughts on Military Revolutions,” 3; and Peter Hart, *The Great War: A Combat History of the First World War* (Oxford: Oxford University Press, 2015), 370.

¹⁵⁵ Marshall, “Some Thoughts on Military Revolutions,” 3.

¹⁵⁶ Murray and Knox, “Thinking About Revolutions in Warfare,” 3.

¹⁵⁷ Hoffman, *Decisive Force*, 94.

¹⁵⁸ “QDR 101: What You Should Know,” U.S. Department of Defense Office of Public Affairs, January 2010, https://dod.defense.gov/Portals/1/features/defenseReviews/QDR/QDR_101_FACT_SHEET_January_2010.pdf.

Conduct a comprehensive examination (to be known as a “quadrennial defense review”) of the national defense strategy, force structure, force modernization plans, infrastructure, budget plan, and other elements of the defense program and policies of the United States with a view toward determining and expressing the defense strategy of the United States and establishing a defense program for the next 20 years.¹⁵⁹

Among its intended the functions, the QDR was mean to establish “strategic priorities to drive the Department’s force structure, modernization, and resource decisions” as well as provide “the foundation for follow-on strategic planning and other DOD processes.”¹⁶⁰ With its forward-looking strategic focus, the QDR is an ideal document for capturing paradigmatic thinking within the DOD.

In his opening comments to the QDR, Secretary of Defense William S. Cohen stated that the United States military had potential three strategies it could pursue in the late 1990s. The first was to “focus more on current dangers and opportunities.”¹⁶¹ This line of thinking was based on the assumption that present threats to national security were sufficiently severe that they must be attended to immediately, and that emerging threats were sufficiently distant enough to not react to immediately. In Cohen’s words “this option would maintain the current force structure exactly as it is” at the expense of not “fully exploiting the Revolution in Military Affairs.” Although Cohen did not use the words “Decisive Force” this is clearly the paradigm he was referring to.

A second potential strategy suggested by Cohen is “to focus more on future dangers and opportunities.”¹⁶² While this strategy would not totally discount the threat of a near term major conventional war it would accept some risk in this area to “devote more resources to building the future force.”¹⁶³ The Secretary acknowledged that doing this would necessitate “significant reductions in the current force.” This strategy, with its

¹⁵⁹ “QDR 101: What You Should Know.”

¹⁶⁰ “QDR 101: What You Should Know.”

¹⁶¹ William S. Cohen, *Report of the Quadrennial Defense Review* (Washington, DC: Department of Defense, 1997), iv, <https://history.defense.gov/Portals/70/Documents/quadrennial/QDR1997.pdf?ver=qba2TZwCFGClTKIgPIPNvg%3d%3d>.

¹⁶² Cohen, *Quadrennial Defense Review*, iv.

¹⁶³ Cohen, *Quadrennial Defense Review*, v.

emphasis on future technological innovation at the expense of troop numbers, is analogous with the Military-Technical Revolution.

The third strategy, the one that Cohen ultimately identified as the correct approach for the United States military in the late 1990s, is a kind of hybrid approach. This strategy “strikes a balance between the present and future, recognizing that our interests and responsibilities do not permit us to choose between the two.”¹⁶⁴ The compromise strategy would retain “sufficient force structure to sustain American global leadership” while also investing in “a focused modernization plan that embraces the Revolution in Military Affairs.” In this way, the 1997 QDR is perfectly representative of the 1990s as a period of paradigmatic transition between Decisive Force and the Military-Technical Revolution. It showed the defense establishment recognizing the shortcoming of Decisive Force but unwilling to fully embrace the Military-Technical Revolution. Kuhn’s quote about paradigmatic crises as periods defined by a “proliferation of competing articulations” seems especially apropos.¹⁶⁵

With this background in mind, we will now transition to an examination of how these competing paradigms were reflected in CENTCOM’s OPLANs from the command’s inception in 1980, until the dawn of the Bush Administration’s global war on terrorism.

¹⁶⁴ Cohen, *Quadrennial Defense Review*, v.

¹⁶⁵ Kuhn, *The Structure of Scientific Revolutions*, 91.

IV. CENTCOM PLANNING PRIOR TO 9/11

By looking at the history of CENTCOM War Planning Prior to 9/11, one can clearly see the overriding influence of Decisive Force-inspired thinking. Even when elements resembling the Military-Technical Revolution paradigm emerge, they are not the dominant influence prior to 9/11. By reviewing pre-global war on terrorism CENTOM war plans, one has a strong basis with which to contrast the planning for OIF discussed in the next chapter, where the Military-Technical Revolution paradigm was decidedly dominant. The following analysis will focus on three major CENTCOM War Plans that existed prior to 2001: OPLAN 1021, OPLAN 1002–90, and OPLAN 1003-98 (to include discussion about 1003-98 that occurred at the Desert Crossing Seminar in 1999).

A. CENTCOM ORIGINS AND OPLAN 1021

Per Bacevich, Sustained American military interest in the Persian Gulf originated with the January 1980 proclamation of the Carter Doctrine, and the twin crises that preceded it in 1979, namely the Iranian Revolution and the Soviet invasion of Afghanistan.¹⁶⁶ The Carter Doctrine stated that the United States would use military force to repulse a foreign power that invaded the Persian Gulf. The United States' chief concern was that the Soviet Union's ambitions would stretch all the way to the Persian Gulf, jeopardizing America's supply of oil. This newfound interest in the Middle East spawned the creation of the Rapid Deployment Joint Task Force in 1980, which eventually became CENTCOM.¹⁶⁷ CENTCOM's first major war plan envisioned a scenario whereby the United States would defend against a Soviet incursion into Iran.¹⁶⁸ Titled OPLAN 1021, it called for five and 2/3 U.S. divisions to deploy from bases in the U.S. to the Zagros mountains in Iran.¹⁶⁹ In addition, air and naval assets would arrive in the Persian Gulf to

¹⁶⁶ Bacevich, *America's War for the Greater Middle East*, 24–29.

¹⁶⁷ Bacevich, *America's War for the Greater Middle East*, 34–35.

¹⁶⁸ Bacevich, *America's War for the Greater Middle East*, 38–39.

¹⁶⁹ Richard M. Swain, *"Lucky War:" Third Army in Desert Storm* (Fort Leavenworth, KS: Command and General Staff College Press, 1994), 6, https://history.army.mil/html/bookshelves/resmat/dshield_dstorm/LuckyWar.pdf.

support ground operations.¹⁷⁰ While the U.S. forces deployed would be too small to counter the 23 attacking Soviet divisions that the plan envisioned, they were expected be able to supply critical support to local Iranian forces while securing a highly defensible foothold that would give U.S. policymakers room for a larger operation should they decide to escalate and deploy a more substantial force.¹⁷¹

In many ways, OPLAN 1021 was representative of the still evolving post-Vietnam Decisive Force paradigm. The plan emphasized the use of conventional forces, to include heavy armor units.¹⁷² In addition, the inherently defensive nature of its mission, and the fact that said mission was to deny the Soviet Union access to strategic oil reserves, was in keeping with the Weinberger Doctrine's emphasis on only resorting to the use of force for the sake of vital national interests with a clear political purpose.¹⁷³

In addition, while OPLAN 1021 anticipated the requirement for U.S.-based forces to deploy to the Middle East, CENTCOM also had major infrastructure projects underway in the 1980s designed to facilitate the possibility for staging a long-term U.S. presence in the region. This included American investment in ports and airfields in Egypt, Kenya, Morocco, Oman, and Somalia, as well as the construction of an extensive network of (at the time unoccupied) military bases in Saudi Arabia.¹⁷⁴ This creation of an infrastructure footprint would facilitate the presence of large force that could perform a mission in keeping with Decisive Force's call to "overwhelm our adversaries."¹⁷⁵

Finally, the Decisive Force nature of OPLAN 1021 is evident from criticisms of the plan. CENTCOM's second commander, General George B. Crist, once expressed concern that countries in his area of responsibility felt that CENTCOM's "sole purpose was to go

¹⁷⁰ Bacevich, *America's War for the Greater Middle East*, 37.

¹⁷¹ "OPLAN 1002 Defense of the Arabian Peninsula," GlobalSecurity.org, accessed February 25, 2023, <https://www.globalsecurity.org/military/ops/oplan-1002.htm>.

¹⁷² Swain, "Lucky War," 6.

¹⁷³ "The Uses of Military Force," November 28, 1984, PBS, <https://www.pbs.org/wgbh/pages/frontline/shows/military/force/weinberger.html>.

¹⁷⁴ Bacevich, *America's War for the Greater Middle East*, 40.

¹⁷⁵ Joint Chiefs of Staff, 1992 *National Military Strategy*, 10.

to Iran and wage World War III against the Russians.”¹⁷⁶ Crist also stated that he feared that those same countries regarded CENTCOM as “little more than a major intervention force designed to operate solely for U.S. purposes without their consultation or participation.” These worries undoubtedly stemmed from a perception of OPLAN 1021’s Decisive Force qualities, namely its emphasis on large scale ground combat using conventional forces.

B. OPLAN 1002-90 AND DESERT STORM

As discussed in the preceding chapter, Operation Desert Storm is often held out as the foremost example of the Decisive Force paradigm in action.¹⁷⁷ The revised war plan under which Desert Storm was conducted, OPLAN 1002, actually predated Saddam’s invasion of Kuwait. On October 16, 1989, the Chairman of the Joint Chiefs of Staff instructed CENTCOM to change the priority of its planning from a scenario premised on a Soviet invasion to one focused on Iraq as the dominant regional threat.¹⁷⁸ This was based on the decline of the Soviet Union as a credible military threat and the conclusion of the Iran-Iraq War.¹⁷⁹ In January 1990 the CENTCOM Commander, General Norman Schwarzkopf, testified to the Senate that “Iraq is now the preeminent military power in the Gulf, and it is assuming a broader leadership role throughout the Arab world. Iraq has the capability to militarily coerce its neighboring states should diplomatic efforts fail to produce the desired results.”¹⁸⁰ Internal war games and analysis within CENTCOM revealed that the previously planned force allocations to the Middle East were inadequate and would not be able to arrive in the region fast to enough to avert an Iraqi invasion of a neighboring Arab state.¹⁸¹ The draft version of the new Iraq-focused plan was called

¹⁷⁶ Anthony H. Cordesman, *USCENTCOM History and Mission* (Washington, DC: Center for Strategic and International Studies, 1998), 9, https://csis-website-prod.s3.amazonaws.com/s3fs-public/legacy_files/files/media/csis/pubs/uscentcom3%5B1%5D.pdf.

¹⁷⁷ Hoffman, *Decisive Force*, 81.

¹⁷⁸ Eliot Cohen et al., *Gulf War Air Power Survey Volume III: Logistics and Support* (Washington, DC: Department of the Air Force, 1994), 58, <https://apps.dtic.mil/sti/pdfs/ADA279743.pdf>.

¹⁷⁹ Bacevich, *America’s War for the Greater Middle East*, 44.

¹⁸⁰ Swain, “*Lucky War*,” 5.

¹⁸¹ Swain, “*Lucky War*,” 6.

OPLAN 1002–90, and would serve as the basis for Desert Shield and Desert Storm after Iraq’s invasion of Kuwait.¹⁸²

OPLAN 1002-90 consisted of three phases: the initial massing of a corps-sized force in theater, the protection of critical infrastructure like ports and airfields, and a counteroffensive to expel Iraqi forces from the invaded country.¹⁸³ In July 1990, the new plan was tested in a CENTCOM exercise called Internal Look, which revealed that the planned force of 253,000 troops would not be adequate to execute the operation.¹⁸⁴ As a result of Internal Look, the Department of the Army consented to increasing the number of heavy forces allocated to executing OPLAN 1002-90 and also the inclusion of Patriot missile air defense units.¹⁸⁵ These adjustments to the war plan would prove fortuitous the following month when Iraq invaded Kuwait in August 1990. The Persian Gulf War proceeded in a fashion that justifies its reputation as the ultimate Decisive Force conflict. Desert Storm was preceded by ‘Desert Shield’ the over 5 months long troop buildup of the forces necessary to repulse the Iraqi occupation of Kuwait.¹⁸⁶ By October 1990, the original one-corps war plan was expanded to a two-corps plan, to provide additional ground forces.¹⁸⁷ The total Coalition force mustered for the conflict was approximately 540,000.¹⁸⁸

Despite Desert Storm’s strong alignment with the Decisive Force paradigm, it is important to note that this war did see the use of weaponry that is often associated with the Military-Technical Revolution. For example, U.S. forces employed technologies like

¹⁸² Swain, “*Lucky War*,” 7.

¹⁸³ Swain, “*Lucky War*,” 9.

¹⁸⁴ Swain, “*Lucky War*,” 10, 39.

¹⁸⁵ Swain, “*Lucky War*,” 11.

¹⁸⁶ John M. Collins, *Desert Shield and Desert Storm Implications for Future U.S. Force Requirements*, CRS Report No. 91–361RCO (Washington, DC: Congressional Research Service, 1991), 1, <https://www.everycrsreport.com/reports/91-361RCO.html>.

¹⁸⁷ Anthony H. Cordesman, *Lessons of the Gulf War: 1990–1991* (Washington, DC: Center for Strategic and International Studies, 2013), 79, <https://www.csis.org/programs/emeritus-chair-strategy/us-strategic-and-defense-efforts/lessons-war/gulf-war>.

¹⁸⁸ Collins, *Desert Shield and Desert Storm Implications for Future U.S. Force Requirements*, 4.

PGMs, advanced counterfire radars, and stealth bombers.¹⁸⁹ However, given the relatively nascent level of explicit focus on the Military-Technical Revolution in the U.S. defense community during this time, it is probably more accurate to consider the use of these technologies in the context of AirLand Battle. Freedman argues that Desert Storm was heavily influenced by AirLand Battle doctrine.¹⁹⁰ Codified in 1982 and developed in the context of the United States and its North Atlantic Treaty Organization (NATO) allies needing to overcome Soviet forces in Central Europe, AirLand Battle placed an emphasis on winning by the aggressive use of maneuver warfare instead of the kind of attritional war of endurance that defined conflict in Vietnam. In this way, AirLand Battle promulgated “initiative, depth, agility, and synchronization” as the principles that won wars.¹⁹¹ AirLand Battle promised the possibility of defeating a numerically superior military with its goal to allow NATO forces to “fight outnumbered and win” against Warsaw Pact adversaries.¹⁹² This admittedly sounds similar to predictions that Cohen and others made during the 1990s about the possibility of the Military-Technical Revolution to allow smaller armies to defeat larger ones due to new technologies.¹⁹³ But there are limits to the applicability of AirLand battle paradigm to Desert Storm.

To begin, Coalition forces did not “fight outnumbered and win” against Iraq in 1991. An authoritative study from the Center for Strategic and International Studies found that when conflict commenced, the Iraqi Army had 336,000 ground forces in the Kuwait theater, compared to 540,000 Coalition ground forces in the region (334,000 of whom came from the United States).¹⁹⁴ In addition, the ground combat in Desert Storm was preceded by a “massive air war of attrition,” that deviated from the kind of integrated air and ground

¹⁸⁹ Bob Woodward, *The Commanders*, 349, 352, 371.

¹⁹⁰ Lawrence Freedman, *A Choice of Enemies: American Confronts the Middle East* (New York: PublicAffairs, 2008), 379–380.

¹⁹¹ Department of the Army, *Operations*, FM 100–5 (Washington, DC: Department of the Army, 1982), 8–8, <https://cgsc.contentdm.oclc.org/digital/collection/p4013coll9/id/976>.

¹⁹² Cordesman, *Lessons of the Gulf War*, 504.

¹⁹³ Cohen, “A Revolution in Warfare,” 53.

¹⁹⁴ Cordesman, *Lessons of the Gulf War*, 105, 131.

maneuver envisioned under AirLand Battle.¹⁹⁵ Finally, AirLand Battle was devised for war between peer forces in Europe, not the poorly equipped, trained, and motivated forces that the Coalition encountered in Iraq. While there are clear resonances between AirLand Battle's emphasis on seizing the offensive initiative and the U.S. strategy in Operation Desert Storm, the Decisive Force paradigm, with its emphasis on overwhelming numbers and brute power, is clearly the best strategic paradigm through which to view the Persian Gulf War.

C. OPLAN 1003-98 AND DESERT CROSSING

U.S. plans for how a second war in Iraq might unfold continued in the period after the Persian Gulf War. Immediately after the conflict, the revised war plan for Iraq very much resembled Desert Storm and was predicated on an anticipated Iraqi invasion of Kuwait or Saudi Arabia.¹⁹⁶ The planning logic changed after the Clinton Administration's 1993 *Bottom-Up Review*, which forecasted the need for the United States to simultaneously fight two 'Major Regional Conflicts' (one in Iraq and one in North Korea) at time when the post-Cold War military was downsizing.¹⁹⁷ As a result, two versions of the Iraq war plan existed: one with Iraq as the initial main effort that would shift to North Korea after victory in the Middle East, and a contingency that saw North Korea as the initial main effort and would surge in Iraq after victory in East Asia.¹⁹⁸ The Iraq contingency plan where North Korea was the initial main effort relied upon the heavy use of reserve forces and was widely disparaged by CENTCOM planners as excessively risky.¹⁹⁹ But events in 1998 would lead to a renewed focus on what a future war with Iraq might require.

¹⁹⁵ Cordesman, *Lessons of the Gulf War*, 606.

¹⁹⁶ Jourdan Travis Moger, *Between Desert Storm and Iraqi Freedom: U.S. Army Operations in the Middle East 1991–2001* (Washington, DC: United States Army Center for Military History, 2021), 57–58, https://history.army.mil/html/books/057/57-1-1/cmhPub_57-1-1.pdf.

¹⁹⁷ Moger, *Between Desert Storm and Iraqi Freedom*, 58.

¹⁹⁸ Moger, *Between Desert Storm and Iraqi Freedom*, 59.

¹⁹⁹ Moger, *Between Desert Storm and Iraqi Freedom*, 60.

By 1998, what the war plan for Iraq once called OPLAN 1002 had evolved into OPLAN 1003-98.²⁰⁰ This plan, based on a scenario of responding to Iraqi aggression in the region or the internal collapse of the Iraqi regime instead of a preemptive U.S. invasion, called for up to 500,000 troops.²⁰¹ OPLAN 1003-98 was refined by a CENTCOM war game called Desert Crossing that occurred in 1999.²⁰² Mazarr notes that the impetus for Desert Crossing was the success of the Clinton administration's 1998 Operation Desert Fox, a series of aerial strikes on Iraq in response to Saddam's non-compliance with UN weapons inspectors.²⁰³ Contrary to Saddam's dismissal of Desert Fox as inconsequential, intelligence later reached American officials that indicated that the operation had shaken his regime so severely that it nearly collapsed. The United States did not have a serious plan to deal with an ungoverned Iraq, which led CENTCOM Commander General Anthony Zinni, to host Desert Crossing. In the words of Colonel Roland J. Tiso, General Zinni's executive officer, the CENTCOM commander "recognized the need for a large force in OPLAN 1003 not so much for the destruction of the Republican Guard, but for the occupation to follow."²⁰⁴

The after-action report (AAR) and other material from Desert Crossing have since been declassified, and they demonstrate a number of prescient findings in light of subsequent developments in Iraq. In its opening section, the AAR notes that "the dimensions of preparing a post-Saddam policy for Iraq and the region are vast and complex" and acknowledges the "likelihood that intervention will be costly in terms of casualties and resources."²⁰⁵ Given the scale of the challenges at hand, Desert Crossing urged that "Political/Military planning should begin immediately." Of particular concern to CENTCOM strategists was the risk that regime change would lead to anarchy in Iraq,

²⁰⁰ Moger, *Between Desert Storm and Iraqi Freedom*, 59; and Gordon and Trainor, *Cobra II*, 4.

²⁰¹ Gordon and Trainor, *Cobra II*, 4.

²⁰² Gordon and Trainor, *Cobra II*, 30.

²⁰³ Mazarr, *Leap of Faith*, 53–54, 60–61.

²⁰⁴ Moger, *Between Desert Storm and Iraqi Freedom*, 115.

²⁰⁵ United States Central Command, *Desert Crossing Seminar: After Action Report* (Tampa, FL: CENTCOM, 1999), 3, https://nsarchive2.gwu.edu/NSAEBB/NSAEBB207/Desert%20Crossing%20After%20Action%20Report_1999-06-28.pdf.

with the AAR noting “a number of factors including aggressive neighbors, fragmentation along religious and/or ethnic lines, and chaos created by rival forces bidding for power could adversely affect regional stability.”²⁰⁶ Of special interest was how Iran might react to an invasion of Iraq, with the AAR stating that “the worst-case scenario is one in which Iran feels pressured and lashes out asymmetrically in moves that range from harassment of U.S. forces to terrorist attacks.”

Desert Crossing was intended as a starting point for additional conversations about managing postwar Iraq, and not designed to produce final answers.²⁰⁷ However, the recommendations it considered demonstrated an overwhelming preference for Decisive-Force influenced approaches, predicated on a massive ground troop presence. In order to demonstrate its resolve to Arab partners in the region, the Desert Crossing AAR stated that the United States “must be able to commit to a large-scale, decisive mission that would include substantial ground forces.”²⁰⁸ In a similar passage discussing Arab membership in a future U.S.-led coalition, the AAR predicted that “Arab allies...would come on board once they realized the United States was serious about the size and decisiveness of its force.”²⁰⁹ The only passage from the declassified AAR that explicitly addressed anticipated troop levels stated that a U.S. action would involve “up to 300,000 ground troops in the region.”²¹⁰ Even in the event that there was not total collapse of government in Iraq after the end of Saddam’s regime (due to a coup or his death from natural causes), the AAR claimed that the United States needed to “be prepared to allay regional allies’ concerns by positioning a Desert Thunder-like force in the area.”²¹¹

Also interesting is the extent to which the *Desert Crossing AAR* called upon analogies related to U.S. military actions in the Balkans to describe possibilities for a post-Saddam Iraq. Indeed, many of the potential issues that the Desert Crossing Seminar

²⁰⁶ CENTCOM, *Desert Crossing Seminar AAR*, 4.

²⁰⁷ CENTCOM, *Desert Crossing Seminar AAR*, 4.

²⁰⁸ CENTCOM, *Desert Crossing Seminar AAR*, 17.

²⁰⁹ CENTCOM, *Desert Crossing Seminar AAR*, 20–21.

²¹⁰ CENTCOM, *Desert Crossing Seminar AAR*, 20.

²¹¹ CENTCOM, *Desert Crossing Seminar AAR*, 16.

envisioned in a post-war Iraq—ethnic tension, the collapse of strong central government, concerns about hostile neighbors taking advantage of chaos—were key features of U.S. involvement in the Balkans. For example, in an effort to mitigate Iranian fears about a pro-Western government in Iraq, some Desert Crossing participants suggested the option of “treating Iran as a non-coalition partner similar to how Russia is being handled in Kosovo.”²¹² In another section that attempted to anticipate how long the United States might be required to remain in Iraq, the AAR stated that “a Bosnia scenario is more likely—which means U.S. involvement could last for at least 10 years.”²¹³ In a passage concerning options for determining Iraq’s post-Saddam leader, the AAR discussed the possibility of employing the “Bosnia model” by which it meant “letting an Iraqi leader emerge to take control of a transitional government.”²¹⁴

D. PARALLELS BETWEEN BALKANS OPERATIONS AND IRAQ WAR PLANNING PRE-9/11

The Balkans case study’s influence on Desert Crossing provides an interesting coda on which to conclude this chapter’s discussion of the influence of Decisive Force on war planning during the 1990s. While not part of CENTCOM’s geographic area of responsibility, Bacevich argued that Bosnia and Kosovo might be thought of as part of the “Greater Middle East” because of their Islamic heritage and history as a part of the Ottoman Empire.²¹⁵ He went on to state that “of all the various military actions undertaken by the United States in the Islamic world since 1980, these two appear to have come closest to achieving real success.”

With the signing of a December 1995 peace agreement by the leaders of Croatia, Bosnia, and Serbia, the United States committed to sending ground troops to Bosnia as part

²¹² CENTCOM, *Desert Crossing Seminar AAR*, 19.

²¹³ CENTCOM, *Desert Crossing Seminar AAR*, 30.

²¹⁴ CENTCOM, *Desert Crossing Seminar AAR*, 25.

²¹⁵ Bacevich, *America’s War for the Greater Middle East*, 163.

of NATO's Implementation Force (IFOR).²¹⁶ The total IFOR ground troop element consisted of approximately 54,000 troops. 20,000 U.S. military personnel were deployed as a part of IFOR to Bosnia, and 12,000 additional American troops were sent to neighboring Balkan states, Hungary, and Italy.²¹⁷ In December 1996, IFOR was renamed as the Stabilization Force (SFOR) with a mission to "provide continued military presence in order to deter renewed hostilities, stabilize and consolidate the peace, and thus contribute to a secure environment and provide and maintain broad support for civil implementation plans."²¹⁸

NATO involvement in Kosovo began in March 1999, when Serbian forces began escalating their longstanding campaign of human rights violations against that region's Albanian ethnic majority.²¹⁹ Interestingly, NATO's initial response was a Military-Technical Revolution-influenced air campaign focused on Serbian military, logistical, and communications infrastructure targets that failed to quickly halt Serbian forces' attacks on Kosovars.²²⁰ A 2004 CRS report on the NATO operation in Kosovo stated that "Some also suggested in the wake of the 1991 Persian Gulf War, some advocates have overemphasized the capabilities of air power, encouraging the belief that ground forces are no longer crucial to achieving military objectives."²²¹ Serbia only agreed to peace terms after 78 days of bombing, by which time Kosovar militia forces had started offensive operations and threat of a NATO ground-invasion loomed.²²² After the ceasefire, a 50,000 member peacekeeping force called the Kosovo Force (KFOR) entered Kosovo under the command of an American general and containing 7,000 U.S. troops.²²³

²¹⁶ Steve Bowman, *Bosnia and Kosovo: U.S. Military Operations*, CRS Report RL32282 (Washington, DC: Congressional Research Service, 2004), 2, <https://www.everycrsreport.com/reports/RL32282.html>.

²¹⁷ Salazar Torreon and Plagakis, *Instances of Use of United States Armed Forces Abroad*, 16.

²¹⁸ Bowman, *Bosnia and Kosovo: U.S. Military Operations*, 2.

²¹⁹ Bowman, *Bosnia and Kosovo: U.S. Military Operations*, 7.

²²⁰ Bowman, *Bosnia and Kosovo: U.S. Military Operations*, 8.

²²¹ Bowman, *Bosnia and Kosovo: U.S. Military Operations*, 9.

²²² Bowman, *Bosnia and Kosovo: U.S. Military Operations*, 9; and Bacevich, *America's War for the Greater Middle East*, 192–193.

²²³ Bacevich, *America's War for the Greater Middle East*, 193.

SFOR and KFOR's missions sounded remarkably similar to the kind of role that CENTCOM foresaw for U.S. forces in postwar Iraq during its Desert Crossing Seminar. In addition, U.S. forces were deployed to Bosnia and Kosovo in the years prior to 2001 and remained there in the period after 9/11 when the Bush administration began its preparation for OIF. One would expect that the largest ongoing overseas U.S. military deployment prior to 9/11 might inform planning for Iraq, especially in regarding postwar peacekeeping efforts, given the type of operations conducted in the Balkans and anticipated after the fall of Saddam.

Some rough math reinforces the underlying logic of this point further. In 1997, Bosnia's population was 3.73 million.²²⁴ Given an SFOR element of 54,000 troops, this works out to 69 Bosnians per peacekeeper. Kosovo's population in 1999 was 1.762 million.²²⁵ Given 50,000 KFOR troops, this works out to about 35 Kosovars per peacekeeper. Interestingly, the proposed forces for Iraq under OPLAN 1003-98 fit comfortably in this range. Iraq's 1999 population was estimated at 23.82 million.²²⁶ Using the 500,000 troops called for in OPLAN 1003-98, this would have rendered about 48 Iraqis per soldier, comfortably within the Balkans force ratio range.

With their emphasis on coalition-building, and an overwhelming troop footprint, OPLAN 1003-98 and the *Desert Crossing Seminar* displayed a strong Decisive Force influence. The fact that the Desert Crossing Seminar AAR made multiple references to U.S. operations in the Balkans is particularly significant. The Bosnia and Kosovo missions both relied heavily upon the presence of ground forces to keep the peace after major combat operations concluded. The importance of this lesson obviously left an impression on CENTOCM strategists during this period. Clearly, the DNA of Decisive Force remained deeply embedded in American war planning for Iraq during the late 1990s.

²²⁴ "Bosnia and Herzegovina," Data Commons, https://datacommons.org/tools/timeline#&place=country/BIH&statsVar=Count_Person.

²²⁵ "Population Growth in the Kosovo," WorldData.info, <https://www.worlddata.info/europe/kosovo/populationgrowth.php>.

²²⁶ "Iraq 1999," Population Pyramid, <https://www.populationpyramid.net/iraq/1999/>.

E. CONCLUSION

Throughout the first two decades of its history, CENTCOM's war plans strongly resembled the Decisive Force paradigm. This was especially the case during and after Desert Storm. However, as discussed in the following chapter, some in the defense community perceived that were Khunian anomalies at work that Decisive Force could not account for. For senior officials in the Bush administration, the need to address the technological innovations inherent in the Military-Technical Revolution demanded a change of strategic paradigms. That included CENTCOM's plans for how to deal with Saddam Hussein.

V. OIF PLANNING

Although Decisive Force was the overriding strategic paradigm in CENTCOM before 9/11, the Military-Technical Revolution clearly supplanted it by the March 2003 invasion of Iraq. Chapter 3 discussed the origin of the Military-Technical Revolution and how some defense thinkers believed it had the potential to deal with two major Khunian anomalies that plagued Decisive Force: namely the promise of new technology to reduce the number of troops needed for military operations and Decisive Force's perceived unsuitability as a paradigm for most post-Cold War mission sets. As this chapter will argue, 9/11 and the resulting global war on terrorism presented the final Khunian crisis that triggered the shift to a new paradigm that would resolve these anomalies.

First, this chapter will establish the strong predisposition towards Military-Technical Revolution paradigm thinking that senior Bush administration officials had even before 9/11. Next, it will move to a discussion of how the initial invasion of Afghanistan presented a kind of trial run for the new paradigm, a test that it seemed to pass with flying colors. From here it will demonstrate the evolution of the Iraq war plan that happened after 9/11, and how the Decisive Force elements that defined OPLAN 1003-98 were dramatically transformed by March 2003. Finally, the chapter will show how early assessments of the first phase of OIF credited its perceived successes or perceived failures to the Military-Technical Revolution.

A. PRESIDENT BUSH: MILITARY-TECHNICAL REVOLUTION THINKING BEFORE 9/11

It is logical to assume that the policy preferences of a given presidential administration might emanate from the top. When it comes to the Bush administration's devotion to the Military-Technical Revolution paradigm, there is evidence for this premise even before the administration began. In 1999, while still a candidate for the Republican Party presidential nomination, then-Governor Bush proclaimed in a speech at the Citadel that the United States had a "chance to project" its "peaceful influence" both

geographically around the world and temporally far into the future.²²⁷ Bush stated that this opportunity was possible because of “a revolution in the technology of war” and noted that a military force’s power was now determined “not by mass or size, but by mobility and swiftness.” He went on to decry that the U.S. military was still preparing to conduct “industrial age operations, rather than for information age battles” and vowed to fix this if elected.

These are themes that Bush would again return to early in his presidency. At remarks he gave marking Donald Rumsfeld’s swearing in as Secretary of Defense on January 26, 2001, President Bush enumerated a list of the top priorities Rumsfeld was charged with executing. Among these was “creating the military of the future, one that takes full advantage of revolutionary new technologies. We will promote peace by redefining the way wars will be fought.”²²⁸

During a presidential radio address on February 10, 2001, President Bush again emphasized fundamental transformations that he believed that the Military-Technical Revolution was having on warfare. Bush stated that “America has some big choices to make as we prepare for the challenges and dangers of modern warfare.”²²⁹ Emphasizing what he saw as technology’s potential to supplant the raw numbers of troops, he said “Battles will no longer be won by size alone; stealth and speed will matter more.”

During a May 2001 commencement address at the U.S. Naval Academy, Bush clearly emphasized ideas from the Military-Technical Revolution when he proclaimed that “we must build forces that draw upon the revolutionary advances in the technology of war that will allow us to keep the peace by redefining war on our terms.”²³⁰ Bush continued this theme stating that he was “committed to building a future force that is defined less by

²²⁷ Dieterich, *The George W. Bush Foreign Policy Reader*, 25.

²²⁸ *Public Papers of the Presidents of the United States: George W. Bush 2001 (In Two Books) Book I-January 20 to June 20, 2001* (Washington, DC: Office of the Federal Register, 2003), 22.

²²⁹ *Public Papers of the Presidents of the United States: George W. Bush 2001 (In Two Books) Book I*, 72.

²³⁰ George W. Bush, Speech at the U.S. Naval Academy “Remarks by the President at the U.S. Naval Academy Commencement,” May 25, 2001, <https://georgewbush-whitehouse.archives.gov/news/releases/2001/05/20010525-1.html>.

size and more by mobility and swiftness, one that is easier to deploy and sustain, one that relies more heavily on stealth, precision weaponry and information technologies.”

As the preceding statements make clear, long before the September 11 attacks and the onset of the global war on terrorism, President Bush’s vision of national security was closely intertwined with the ideas of the Military-Technical Revolution. Given his father’s role as Commander in Chief during Desert Storm, the ultimate Decisive Force operation, George W. Bush would seem to have to be aware that he was advocating something decidedly different. Advocacy for the potential of the Military-Technical Revolution would then appear to be a highly distinct and intentional choice by his administration.

B. SECRETARY OF DEFENSE RUMSFELD: MILITARY-TECHNICAL REVOLUTION THINKING BEFORE 9/11

As one would expect, Bush’s pick for Secretary of Defense, Donald Rumsfeld, shared the president’s thinking about strategic military paradigms. While in his 2011 memoir Rumsfeld argued that his interest in implementing changes originating from the Military-Technical Revolution (that he often referred to as a “transformation agenda”) was often overstated by the press, there is significant evidence in the primary and secondary literature that this was actually a key pillar of his thinking.²³¹ Freedman describes the common view of Rumsfeld as desiring to make full use of the opportunities offered by the Military-Technical Revolution to transform the American forces from the “lumbering military formations of the Cold War days” into a more nimble force.²³² During his January 11, 2001 confirmation hearing, Rumsfeld’s belief in the importance of Military-Technical Revolution-inspired thinking became very clear. In his opening remarks he stated that one of the tasks he looked forward to working on was “the challenge of bringing the American military successfully into the 21st century.”²³³ In reference to the evolving world that the United States found itself inhabiting, Rumsfeld insisted that the United States must rethink how it conducts deterrence because “the old deterrence of the Cold War era is imperfect

²³¹ Donald Rumsfeld, *Known and Unknown: A Memoir* (New York: Sentinel, 2011), 293.

²³² Freedman, *A Choice of Enemies*, 374.

²³³ *Nominations Before the Senate Armed Services Committee*, 107th Cong. 1 (2001), <https://www.congress.gov/event/107th-congress/senate-event/LC16272/text>.

for dissuading the threats of the new century and for maintaining stability in our new national security environment.” He also insisted that “...we must take advantage of the new possibilities that the ongoing technological revolution offers to create the military of the next century.”²³⁴ From these quotes alone it appears quite plain that Rumsfeld entered the Pentagon with a desire to implement changes stemming from his understanding of the potential promises and challenges of the Military-Technical Revolution.

Once in office, Rumsfeld made early moves seeming to indicate a commitment to the Military-Technical Revolution. In his speech at his official welcoming ceremony to the Pentagon, Rumsfeld noted that one of President Bush’s top goals was “to build a military that takes advantage of remarkable new technologies to confront the new threats of this century.”²³⁵ Graham notes that one of Bush’s first presidential decrees, Presidential Directive 3, gave Rumsfeld extensive powers to implement his defense transformation agenda, stating that “The secretary of defense is hereby given a broad mandate to challenge the status quo and establish new and innovative practices and processes for acquiring U.S. defense capabilities for decades to come.”²³⁶ Early in time as Secretary of Defense, Rumsfeld made a public display of being seen to eat lunch with Andrew Marshall (still employed as the head of the Office of Net Assessments in 2001 at the age of 79) to signal his support for Marshall’s ideas about the Military-Technical Revolution, ideas that had largely fallen out of favor in the Pentagon prior to Rumsfeld’s arrival.²³⁷

Rumsfeld’s ideas about the transformative potential of the Military-Technical Revolution were shared by his pick of Deputy Secretary of Defense Paul Wolfowitz. In fact, Wolfowitz’, Military-Technical Revolution pedigree was perhaps even more extensive than Rumsfeld’s. An examination of his life indicates that Wolfowitz spent

²³⁴ *Nominations Before the Senate Armed Services Committee*, 107th Cong. 1 (2001), <https://www.congress.gov/event/107th-congress/senate-event/LC16272/text>.

²³⁵ Jeffrey A. Krames, *The Rumsfeld Way: Leadership Wisdom of a Battle-Hardened Maverick* (New York: McGraw-Hill, 2002), 159.

²³⁶ Bradley Graham, *By His Own Rules: The Ambitions, Successes, and Ultimate Failures of Donald Rumsfeld* (New York: PublicAffairs, 2009), 208.

²³⁷ Graham, *By His Own Rules*, 209.

decades thinking about the potential implication of the Military-Technical Revolution prior to his service in the George W. Bush administration.

C. DEPUTY SECRETARY OF DEFENSE PAUL WOLFOWITZ: MILITARY-TECHNICAL REVOLUTION THINKING BEFORE 9/11

One of the seminal intellectual influences on Paul Wolfowitz' thinking on security matters was his professor as a graduate student at the University of Chicago, Albert Wohlstetter.²³⁸ Recall from Chapter III that Wohlstetter was one of the American intellectual pioneers of Military-Technical Revolution thinking.²³⁹ In a May 2003 interview with Vanity Fair magazine, Wolfowitz said of Wohlstetter that he "was one of the first people, most influential people, to understand what a dramatic difference it would make to have accurate weapons."²⁴⁰ He went on to state of his mentor that "if you wanted to understand Albert Wohlstetter you've got to understand how somebody can perceive that a seemingly cold technical fact like this fact about accuracy translates into a whole transformation of strategy and politics." Clearly, Wohlstetter's understanding of the implications of the Military-Technical Revolution had a major impact on Wolfowitz.

Wolfowitz became an experienced policymaker whose government service before the George W. Bush administration included time as the Under Secretary of Defense for Policy during the George H. W. Bush administration. Ricks notes that Wolfowitz' views were shaped by Operation Provide Comfort, the 1991 post-Desert Storm effort by the United States to give security and relief to Kurds in Northern Iraq during a renewed wave of oppression from Saddam Hussein.²⁴¹ Wolfowitz was impressed by the idea of a highly joint operation that involved deploying a small force deep into the Middle East where it leveraged technology (principally airpower) to ward off a much larger the Iraqi Army. Wolfowitz actually arranged a brief trip to northern Iraq to interview commanders of the

²³⁸ Bacevich, *The New American Militarism*, 161.

²³⁹ Bacevich, *The New American Militarism*, 158–159.

²⁴⁰ "News Transcript from United States Department of Defense: Wolfowitz Interview with Vanity Fair's Tannenhaus," U.S. Department of Defense, May 30, 2003, <https://www.scoop.co.nz/stories/WO0305/S00308.htm>.

²⁴¹ Ricks, *Fiasco*, 8–10.

American forces involved. While Ricks' retelling of the anecdote does not use the term 'Military-Technical Revolution' to describe the reason for Wolfowitz' fascination with Provide Comfort, in retrospect this would clearly seem to be a major source of its appeal.

Two anecdotes from the end of Wolfowitz' tenure in the George H.W. Bush administration also show pre-9/11 evidence for his desire to remake defense policy in light of the Military-Technical Revolution. First, Wolfowitz played an important role in drafting the DOD's 1992 Defense Planning Guidance (DPG), the unclassified version of which was published in January 1993 as the 'Defense Strategy for the 1990s.'²⁴² The document expressed clear familiarity with ideas from the Military-Technical Revolution. In a section titled "Technological Superiority," the document stated that "The onset of a new military-technological revolution presents continued challenges not only in the realm of technological superiority, but also in the way we organize, train, and employ our forces."²⁴³ The document also includes a line stating that U.S. forces must be "sustained at levels necessary to assure that" they "dominate the military-technological revolution."

A second item of note from the end the George H.W. Bush administration was Wolfowitz' desire to rewrite the Iraq contingency plan to be more in accord with the promise of the Military-Technical Revolution to reduce the need for the presence of large ground forces. In late 1992, CENTCOM representatives came to the Pentagon to discuss a new OPLAN for Iraq that very much resembled the strategy for Desert Storm.²⁴⁴ Wolfowitz contended that advances in PGMs and other technology (combined with the damage done to the Iraqi Army during the Persian Gulf War) meant that the war plan should be revised to account for a much smaller force than what was employed in Desert Storm. Wolfowitz' objections were apparently overruled by then-Secretary of Defense Dick

²⁴² James Mann, "The True Rational? It's a Decade Old," *Washington Post*, Marcy 7, 2004, <https://www.washingtonpost.com/archive/opinions/2004/03/07/the-true-rationale-its-a-decade-old/81f7247b-bc7b-4750-94c6-e9896dabdaa5/>.

²⁴³ Dick Cheney, *Defense Strategy for the 1990s: The Regional Defense Strategy* (Washington, DC: Department of Defense, January 1993), 10, <https://nsarchive2.gwu.edu/nukevault/ebb245/doc15.pdf>.

²⁴⁴ Moger, *Between Desert Storm and Iraqi Freedom*, 57.

Cheney.²⁴⁵ Ultimately however, they would prove to be a harbinger of things to come during the George W. Bush administration.

By 2001 when Rumsfeld tapped him for the Deputy Secretary of Defense position, Wolfowitz' views on the Military-Technical Revolution remained strong. In his prepared statement to the Senate at the time of his confirmation as Rumsfeld's deputy in 2001, Wolfowitz made clear his commitment to an agenda inspired by the promise of a new military revolution. He insisted to the Senate that "We must begin a long overdue renovation and transformation of the Armed Forces in order to preserve and extend the peace well into the twenty-first century."²⁴⁶ In response to a question about whether or not force structure might need to adjust to deal with future military threats, Wolfowitz answered that "The technological revolution makes possible new forces and concepts of operations that can transform the way we fight in the future."²⁴⁷

From the available evidence, it seems quite certain that President Bush and his two most senior Pentagon officials entered the new administration with a long-established preference for the Military-Technical Revolution paradigm, and a belief that it was a more appropriate framework through which to view the strategic problems of the United States in the early 21st Century.²⁴⁸ The attacks of September 11 and the perceived need to militarily respond in Iraq and Afghanistan, would present the ultimate Khunian crisis for which a paradigm shift to the Military-Technical Revolution was thought to be the solution.

D. AFGHANISTAN AS TRIAL RUN FOR THE MILITARY-TECHNICAL REVOLUTION

There is extensive evidence that senior leaders in the Bush Administration saw Operation Enduring Freedom as an opportunity to test Military-Technical Revolution

²⁴⁵ Moger, *Between Desert Storm and Iraqi Freedom*, 58.

²⁴⁶ *Prepared Statement of Dr. Paul Wolfowitz for his Confirmation Hearing before The Senate Armed Services Committee*, 107th Cong. 1 (2001) (Statement by Paul Wolfowitz), https://www.globalsecurity.org/military/library/congress/2001_hr/010227pw.pdf.

²⁴⁷ *Nominations Before the Senate Armed Services Committee*, 107th Cong. 1 (2001), <https://www.congress.gov/event/107th-congress/senate-event/LC16272/text>.

²⁴⁸ Gordon and Trainor, *Cobra II*, 5–6, 11–12.

principles in combat. Folse supplies evidence that prior to 9/11, the Bush Administration had been largely unable to implement its desired shift away from the Decisive Force paradigm, to include being unable to terminate the American commitment to ongoing NATO ground operations in the Balkans.²⁴⁹ The opening phase of the global war on terrorism offered an opportunity for the administration to conduct a war on its own Military-Technical Revolution inspired terms. CENTCOM actually had no war plan for Afghanistan prior to September 11, 2001.²⁵⁰ CENTCOM's post-9/11 Afghanistan plan, focused on naval and air-based strikes followed by insertion of small teams of special forces and CIA personnel to work with the Northern Alliance, clearly reflected the new administration's preferences.²⁵¹ This decentralized force structure also required less of a logistical and administrative footprint than a conventional operation.²⁵² One could point to this aspect as another benefit of Military-Technical Revolution mission over a Decisive Force operation. In addition, as demonstrated from an internal memorandum written by Secretary of Defense Rumsfeld, the Bush administration early on envisioned Afghanistan as just one of many future theatres in the war on terrorism, and therefore wanted to avoid becoming decisively committed in one location.²⁵³ The same memorandum also makes it clear that the United States saw its future role in these wars as primarily leveraging its special operations and intelligence capabilities in support of local forces, not large-scale Decisive Force-style deployments.

By March 2002, it appeared that Operation Enduring Freedom had largely succeeded in accomplishing its initial war aims.²⁵⁴ The Taliban was out of power and the

²⁴⁹ Mark R. Folse, *Operation Enduring Freedom: September 2001 – March 2002* (Washington, D.C.: U.S. Army Center for Military History, 2022), 17–18, https://history.army.mil/html/books/070/70-83/cmhPub_70-83-1.pdf.

²⁵⁰ Edmund J. Degen and Mark J. Reardon, *Modern War in an Ancient Land: The United States Army in Afghanistan 2001–2014 – Volume I* (Washington, D.C.: U.S. Army Center for Military History, 2021), 50, https://history.army.mil/html/books/059/59-1/cmhPub_59-1_voll.pdf.

²⁵¹ Folse, *Operation Enduring Freedom*, 20–21.

²⁵² Folse, *Operation Enduring Freedom*, 26.

²⁵³ Donald Rumsfeld, “Strategic Thoughts” (official memorandum, Washington D.C: Department of Defense, 2001), <http://library.rumsfeld.com/doclib/sp/272/2001-09-30%20to%20President%20Bush%20re%20Strategic%20Thoughts.pdf>

²⁵⁴ Folse, *Operation Enduring Freedom*, 69.

new U.S.-backed interim leader, Hamid Karzai was installed. In addition, the U.S.-backed forces greatly degraded al-Qaeda's presence in Afghanistan. It is true that the administration's failure to clearly articulate and resource concrete strategic ends for the war would soon become apparent.²⁵⁵ But in early 2002, as the United States planned its next move in the global war on terrorism, it was still possible to point to Afghanistan as the poster child example of how to fight and win a war in accordance with Military-Technical Revolution principles.

One source of evidence for the influence of Afghanistan on Iraq war planning comes from General Tommy Franks, the CENTCOM commander who oversaw the invasions of both Afghanistan and Iraq. In his 2004 memoir *American Soldier*, Franks stated of the pre-9/11 Iraq war plan that:

The existing plan, OPLAN 1003, had last been updated after Desert Fox in 1998, but it was based on Desert Storm-era thinking. It was troop-heavy, involving a long buildup and a series of air strikes before boots hit the ground. It didn't account for our current troop dispositions, advances in Precision-Guided Munitions, or break-throughs in command-and-control technology—not to mention the lessons we were learning in Afghanistan.²⁵⁶

In another part of the memoir where he recounts an early briefing he had about Iraq with Rumsfeld, Franks noted that OPLAN 1003-98 was based on assessments about American and Iraqi forces from the early 1990s.²⁵⁷ But Franks argued that this was an outdated planning factor because “our own forces are much different. We see that in Afghanistan.” While Franks acknowledged that war in Iraq would present “a vastly more difficult challenge” it is nevertheless clear that Afghanistan shaped his thinking on the matter.²⁵⁸

Another source of evidence for the influence of the perceived success on Afghanistan comes from an article by Rumsfeld titled “Transforming the Military” that

²⁵⁵ Folse, *Operation Enduring Freedom*, 71–72.

²⁵⁶ Tommy Franks, *American Soldier* (New York: Regan Books, 2004), 329.

²⁵⁷ Franks, *American Soldier*, 333.

²⁵⁸ Franks, *American Soldier*, 336.

Foreign Affairs published in May 2002. He opened the article by recounting the fight against the Taliban in Mazar-i-Sharif where Rumsfeld claimed that victory was achieved thanks to “a combination of the ingenuity of special forces, the most advanced, precision-guided munitions in the U.S. arsenal” and the bravery of Northern Alliance fighters.²⁵⁹ He also touted the important role that ground penetrating munitions and drones played during the opening phase of Operation Enduring Freedom. Overall, Rumsfeld noted that “our experiences on September 11 and in the subsequent Afghan campaign have reinforced the need to move the U.S. defense posture” towards the so-called transformation goals he had advocated since his return to the Pentagon at the start of the Bush administration. While Rumsfeld was careful to note that he did not expect the Afghan model to be precisely replicable in every future war, he nevertheless held it out as an example for the potential benefits gained from operating under a Military-Technical Revolution paradigm.

Furthermore, multiple analyses of a potential future war in Iraq written in 2002 or early 2003 explicitly reference the possibility that the United States might use its success in Afghanistan to justify a minimum force-level in Iraq. In 2002, a former CIA Middle East Analyst named Kenneth M. Pollack published a book titled *The Threatening Storm: The Case for Invading Iraq*, which, as its name implies, laid out a detailed argument advocating for the United States to overthrow Saddam. However, Pollack devoted an entire chapter of the book to refute “a small but vocal group who has argued that the United States should employ the same concept of operations that prevailed in Afghanistan to try to oust Saddam as well.”²⁶⁰ Likewise, *Iraq at the Crossroads*, a January 2003 monograph published by the London-based International Institute for Strategic Studies, specifically highlighted the risks of the U.S. pursuing a so-called “Afghan model” in a future invasion of Iraq.²⁶¹ In addition, a February 2003 report published by the United States Army War College explicitly warned against assuming that a transition to civil authority in Iraq following a future war would

²⁵⁹ Rumsfeld, “Transforming the Military.”

²⁶⁰ Kenneth M. Pollack, *The Threatening Storm: The Case for Invading Iraq* (New York: Random House, 2002), 293–334.

²⁶¹ Judith S. Yaphe, “America’s War on Iraq: Myths and Opportunities,” in *Iraq at the Crossroads: State and Society in Shadow of Regime Change*, ed. Toby Dodge and Steven Simon (Oxford: Oxford University Press, 2002), 35–36.

occur as quickly as that process had in Afghanistan in 2001.²⁶² Taken together these documents, all published before the March 2003 onset of OIF, indicate a widespread feeling that senior U.S. defense leaders would be tempted to apply the perceived Military-Technical Revolution success lessons of the war in Afghanistan to a future war in Iraq. As demonstrated below, it was in fact the case that defense leaders sought to heavily apply a Military-Technical Revolution paradigm to Iraq, most especially in terms of the potential to minimize the commitment of ground forces.

E. POST 9/11 IRAQ WAR PLANNING AND THE MILITARY-TECHNICAL REVOLUTION

Given the Military-Technical Revolution preferences of senior Bush administration officials that existed even before 9/11, and the seeming success of these preferences during the first phase of Operation Enduring Freedom, it is in retrospect perfectly foreseeable that they guided decisions about force levels in planning for the March 2003 invasion of Iraq.²⁶³ Shortly after 9/11, when Rumsfeld first received a brief on OPLAN 1003-98 from the Joint Staff, he was aghast at the 500,000 troops requirement and declared that even 125,000 ground forces might be excessive.²⁶⁴ In late 2001 as the Bush administration considered the possibility of future military intervention in Iraq, it would again fall to General Franks to produce a more acceptable war plan.

The dialogue that took place between CENTCOM and DOD in the preparation of a strategy for OIF might be characterized as a continuous effort to bring the war plan in alignment with Military-Technical Revolution principles. This was manifest in DOD's enduring desire for ground forces to be kept to a minimum.²⁶⁵ While General Franks generally supported a larger force than civilian officials at the Pentagon, he nevertheless largely agreed that OPLAN 1003-98 was a Cold War relic. He described it as "too big, too

²⁶² Conrad C. Crane and Andrew W. Terrill, *Reconstructing Iraq: Insights, Challenges, And Missions for Military Forces in a Post-Conflict Scenario* (Carlisle, PA: United States Army War College Press, 2003), 44.

²⁶³ Gordon and Trainor, *Cobra II*, 4–5; and Ricks, *Fiasco*, 75.

²⁶⁴ Gordon and Trainor, *Cobra II*, 4.

²⁶⁵ Hooker, *Shaping the Plan for Operation Iraqi Freedom*, 19.

slow, and too out-of-date” and “stale, conventional, predictable.”²⁶⁶ By a December 4, 2001 teleconference with Rumsfeld, Franks reduced the force structure for an Iraq invasion from half a million to 400,000.²⁶⁷ However, Franks recognized that even this number was too large. The December 4 meeting marked the beginning of a long iterative process where Franks would meet with Rumsfeld and other senior administration officials to update them on the status of planning. At a December 28th meeting with President Bush, Franks again emphasized his belief that the current version of OPLAN 1003-98 failed to account for the fact that “our advances in precision weapons and command and control make our forces much more capable than they were” during Desert Storm.²⁶⁸ Rumsfeld helped to ensure that the war plan developed in accordance with his thinking by embedding a team from the office of Douglas Feith, the undersecretary of defense for policy, in the CENTCOM war plans cell.²⁶⁹ Feith was widely recognized as a close personal confidant of Rumsfeld.²⁷⁰ Despite some differences, DOD and General Franks were united in a desire to see the Iraq war plan shaped in a way that made it more in alignment with the promise of the Military-Technical Revolution to reduce force requirements.

The iterative process continued with three full versions of an updated Iraq war plan produced, each calling for a faster buildup time for forces in the region in addition to an overall lower number of troops.²⁷¹ The new plan was named 1003V.²⁷² The minimization of ground troop requirements was a defining feature of 1003V. Rather than using the DOD’s time-phased force and deployment list, which uses software to decide the appropriate logistical and administrative units that should accompany the combat forces earmarked for a war plan, Rumsfeld insisted on personally approving units.²⁷³ His

²⁶⁶ Franks, *American Soldier*, 331.

²⁶⁷ Franks, *American Soldier*, 333.

²⁶⁸ Franks, *American Soldier*, 349.

²⁶⁹ Gordon and Trainor, *Cobra II*, 36–37.

²⁷⁰ Gordon and Trainor, *Cobra II*, 11.

²⁷¹ Hooker, *Shaping the Plan for Operation Iraqi Freedom*, xi.

²⁷² Hooker, *Shaping the Plan for Operation Iraqi Freedom*, 6.

²⁷³ Gordon and Trainor, *Cobra II*, 110.

skepticism about the need for support forces led to a lower level of troops than what CENTCOM planners initially envisioned, to include fewer troops responsible for running ports and airfields, and less military police.²⁷⁴ Ultimately, Rumsfeld approved the deployment of 145,000 ground troops for the invasion force, less than half than what OPLAN 1003-98 had anticipated.²⁷⁵ Based on the troops to local population ratios used during the Balkans operations, it quickly becomes apparent how dramatically different 1003V was from predecessor plans. Using Kosovo's force ratio as the standard for Iraq would have resulted in an invasion force of 480,000.²⁷⁶ Using Bosnia's lower force ratio would still have resulted in an Iraq invasion force of 364,000. Clearly, the Bush administration believed that the advantages of the Military-Technical Revolution were so profound, and the demands of postwar peacekeeping would be so minimal that all historical precedent for troop levels was no longer relevant.

In addition to its low level of ground troops, 1003V was also influenced by the Military-Technical Revolution in regards to its use of air power. Unlike during Desert Storm, where the ground phase of the campaign was preceded by a nearly month-long air phase, during Operation Iraqi Freedom the air and ground phases commenced nearly simultaneously.²⁷⁷ This strategic innovation was due to the influence that a Military-Technical Revolution adjacent concept called "rapid decisive operations" (RDO) had on the Bush administration DOD.²⁷⁸ RDO was originally formulated by strategists at the National Defense University and held that applying simultaneous overpowering force to an opponent could lead to a disabling psychological impact beyond the physical damage caused by an attack. In this way RDO, also known by the name "shock and awe," could allow quantitatively smaller but qualitatively superior units to have an outsize effect.²⁷⁹ OIF planners were particularly confident that this was possible because of advances in

²⁷⁴ Gordon and Trainer, *Cobra II*, 114.

²⁷⁵ Ricks, *Fiasco*, 117.

²⁷⁶ Gordon and Trainer, *Cobra II*, 119.

²⁷⁷ Cordesman, *Lessons of the Gulf War*, 400; and Gordon and Trainor, *Cobra II*, 189.

²⁷⁸ Hooker, *Shaping the Plan for Operation Iraqi Freedom*, 21–22.

²⁷⁹ Hooker, *Shaping the Plan for Operation Iraqi Freedom*, 22.

munitions that had occurred since Desert Storm. While during the last war in Iraq aircraft had depended on laser guided munitions, by 2003 the U.S. now had self-steering bunker-busting bombs that employed advanced guidance systems using data from satellites.²⁸⁰ Both the ground and air planning for OIF make it quite evident that by March 2003, CENTCOM's war plans had made a dramatic shift from a Decisive Force paradigm to a Military-Technical Revolution paradigm.

F. SKEPTICISM WITHIN THE RANKS OVER IRAQ WAR PLANNING AND THE MILITARY-TECHNICAL REVOLUTION

Another way to demonstrate the influence of the Military-Technical Revolution on the planning for OIF is to look at criticisms that the Bush administration's plan received from military officers with a preference for the old Decisive Force paradigm. Gordon and Trainor include Lieutenant General Greg Newbold, a senior staff officer at the Pentagon who gave the Secretary of Defense his initial OPLAN 1003-98 brief after 9/11, as one such officer.²⁸¹ In an interview about the part of the briefing where Rumsfeld suggested that an invasion of Iraq might only require 125,000 troops instead of the 500,000 called for in the war plan, Newbold stated that "My regret is that at the time I did not say, 'Mr. Secretary, if you try to put a number on a mission like this you may cause enormous mistakes.'"²⁸²

Another early uniformed critic of the revised Iraq war plan was former CENTCOM commander General Anthony Zinni, who oversaw the post-Desert Fox rewrite of OPLAN 1003-98 and the Desert Crossing Seminar.²⁸³ As war planning was underway Zinni, now retired from the military but still engaged with national security affairs, inquired with the CENTCOM deputy commander if his planning team was using the Desert Crossing war game results as a baseline. Zinni was surprised to learn that CENTCOM senior leaders were not familiar with Desert Crossing at all. In a 2004 CBS interview about his views on the progress of the then year-old invasion, Zinni stated, "I think there was dereliction in

²⁸⁰ Gordon and Trainor, *Cobra II*, 197.

²⁸¹ Gordon and Trainor, *Cobra II*, 4.

²⁸² Gordon and Trainor, *Cobra II*, 4.

²⁸³ Gordon and Trainor, *Cobra II*, 158–159.

insufficient forces being put on the ground and fully understanding the military dimensions of the plan. I think there was dereliction in lack of planning.”²⁸⁴ Generals Newbold and Zinni were not alone. The same CBS story recorded that General Norman Schwarzkopf, who commanded CENTCOM during Desert Storm, and General Wesley Clark, who was Supreme Allied Commander during the Kosovo crisis, also expressed skepticism of the Bush administration’s Iraq war plan. The fact that these senior officers, who were steeped in the military’s post-Vietnam Decisive Force paradigm culture, opposed the low number of forces used in Operation Iraqi Freedom is a strong indication that the war was influenced by the Military-Technical Revolution, a paradigm with which they were uncomfortable.

G. EARLY ASSESSMENTS OF OIF’S SUCCESS AND THE MILITARY-TECHNICAL REVOLUTION

A final line of evidence worth exploring in order to demonstrate the impact of the Military-Technical Revolution on planning for OIF are the initial assessments of its success. While of course these positive judgments about the war’s success would be short-lived, they provide an interesting window into what observers credited its perceived success too. Often, they thought the answer lay in the influence the Military-Technical Revolution had on the war plans.

President Bush was quite clear that he believed that the war’s initial success was the result of his administration’s embrace of the Military-Technical Revolution. In an April 24, 2003 interview with Tom Brokaw, he noted the impact of the Military-Technical Revolution on the opening phase of the war stating “The ability to communicate has changed the nature of warfare. It allows for more interoperability... which makes it easier to fight a war with flexibility and speed and precision. So the doctrine really has changed.”²⁸⁵ During his May 1, 2003 speech aboard the *USS Abraham Lincoln*, President Bush stated that “Operation Iraqi Freedom was carried out with a combination of precision

²⁸⁴ Rebecca Leung, “Gen. Zinni: They’ve Screwed Up,” May 21, 2004, <https://www.cbsnews.com/news/gen-zinni-theyve-screwed-up/>.

²⁸⁵ *Public Papers of the Presidents of the United States: George W. Bush 2003 (In Two Books) Book I-January 1 to June 30, 2003* (Washington, DC: Office of the Federal Register, 2006), 380.

and speed and boldness...the world had not seen before.”²⁸⁶ The president continued in this theme stating “With new tactics and precision weapons, we can achieve military objectives without directing violence against civilians.”²⁸⁷

In addition to President Bush, observers outside the administration also attributed OIF’s initial victory to the Military-Technical Revolution. Edward Luttwak, a defense analyst who had long advocated for the transformative power of the Military-Technical Revolution, argued that the initial phase of OIF represented “the accomplishment of that revolution.”²⁸⁸ In a report titled *Operation Iraqi Freedom: A First Blush Assessment*, Andrew Krepinevich, director of the Center for Strategic and Budgetary Assessments and a disciple of Andrew W. Marshall, stated that the success of the March 2003 invasion of Iraq using minimal ground forces called into question “the future role of heavy armored, mechanized ground forces.”²⁸⁹ A June 2003 CRS report on implications of OIF for Congress noted that some observers believed that the conflict would serve as a test for Rumsfeld’s transformation vision, and that the campaign’s initial success “validated this vision, or at least major parts of it, and also strengthened Secretary of Defense Donald Rumsfeld’s authority to implement this vision over the objections of persons or organizations opposed to parts of it.”²⁹⁰ While the unfolding difficulties with the post-war effort would call soon call into question many of the optimistic assessments about the war, these initial evaluations nevertheless demonstrate that many observers in and out of the government believed that the quick defeat of conventional Iraqi forces was due to the U.S. military’s embrace of the Military-Technical Revolution.

²⁸⁶ *Public Papers of the Presidents of the United States: George W. Bush 2003 (In Two Books) Book I*, 410.

²⁸⁷ *Public Papers of the Presidents of the United States: George W. Bush 2003 (In Two Books) Book I*, 411.

²⁸⁸ Bacevich, *America’s War for the Greater Middle East*, 7.

²⁸⁹ Andrew F. Krepinevich, *Operation Iraqi Freedom: A First Blush Assessment* (Washington, D.C.: Center for Strategic and Budgetary Assessments, 2003), 30, <https://csbaonline.org/uploads/documents/2003.09.16-Operation-Iraqi-Freedom-Assessment.pdf>.

²⁹⁰ Ronald O’Rourke, *Iraq War: Defense Program Implications for Congress*, CRS Report No. RL31946 (Washington, D.C.: Congressional Research Service, 2003), 4, https://www.everycrsreport.com/files/20030604_RL31946_7dc317de842a0b3caf8c02c462db47798e2db6a0.pdf.

H. CONCLUSION

In marked contrast to previous major CENTCOM war plans, the strategy for OIF was decidedly shaped by the influence of the Military-Technical Revolution. Given the preferences that that senior Bush Administration officials had for the Military-Technical Revolution over Decisive Force even before 9/11, this was a logical outcome. The need to account for the Khunian anomalies of new force-saving technology and for post-Cold War mission sets poorly suited to Decisive Force had presented problems that Bush administration officials were attuned to for some time. September 11 and the global war on terrorism presented a suitably significant crisis to hasten the paradigm shift from the Decisive Force to the Military-Technical Revolution. After the apparent initial success of Military-Technical Revolution principles in Afghanistan, the administration shifted its gaze to Iraq. The impact of the Military-Technical Revolution is clear from the dramatic change and reduction in forces that occurred in transforming OPLAN 1003-98 to OPLAN 1003V. The fact that observers in the immediate aftermath of the invasion attributed its success to Military-Technical Revolution principles provides additional evidence for this point. We will now conclude this study by attempting to distill implications that this historical episode has for future instances of national defense paradigm change.

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VI. LESSONS LEARNED AND IMPLICATIONS FOR FUTURE RESEARCH

What does OIF as a case study of paradigm shift in action have to teach us? The basic finding that the United States entered Iraq in March 2003 with insufficient forces and without a suitable long-term plan for post-war reconstruction is well established and does not require a detailed review here.²⁹¹ These observations are valid and, should the United States ever engage in another major invasion with an aim of regime change, one hopes they would be implemented in the relevant war plans. Instead of focusing on those issues, this chapter will draw attention to three other topics: implications for education on civil-military relations, research on organizational responses to crises, and research on the natural tendency to focus on technology as a strategic panacea.

A. IMPLICATIONS FOR EDUCATION ON CIVIL-MILITARY RELATIONS

The paradigm shift from Decisive Force to the Military-Technical Revolution would seem to have relevance for the nature of civil-military relations. Above all, it calls attention to the need for greater cooperation and dialogue between political leaders and military officers. In the story of the paradigm shift from Decisive Force to the Military-Technical Revolution, both camps appear to have demonstrated great prescience while also succumbing to intellectual blinds spots.

To begin, the generation of the Decisive Force paradigm was largely driven by the emotional revulsion of military officers to what happened in Vietnam.²⁹² In seeking to explain what happened and how to avoid a repetition, Decisive Force, with its call for the overwhelming use of troops and materiel and for clearly defined political objectives, appeared as a natural solution. In addition to being in keeping with the general tradition of the American way of war, Decisive Force seemed to guarantee that the United States would never again find itself mired in an open-ended military commitment without a direct link to vital national interests. The solution to the Khunian anomaly of American military defeat

²⁹¹ For example see: Gordon and Trainor, *Cobra II*, 586.

²⁹² Hoffman, *Decisive Force*, 32–33.

in Vietnam was to shape future engagements in such a way that those missions risking American military loss would not be entertained.

In retrospect, the short sightedness of Decisive Force as a solution is apparent. The United States, even during the Cold War but certainly in its aftermath, could not reasonably forswear all use of military force short of largescale ground combat. Throughout its history, the United States has used its military innumerable times for things short of total war: anti-piracy operations in the Mediterranean, protecting the property of American citizens in Columbia during periods of unrest, skirmishes with guerillas along the Mexican border, etc.²⁹³ The idea that this history could be totally upended seems exceptionally dubious, especially during a period when the United States found itself as the world's only super power.²⁹⁴ From this perspective, the appeal of Military-Technical Revolution paradigm, which was chiefly championed in the United States by civilian defense intellectuals, is apparent. Its promise to open up a range of potential mission sets without the need for overwhelming, politically sensitive, and expensive troop commitments had obvious and genuine appeal.

However, the Decisive Force paradigm was not devoid of all value. It spoke to a form warfare with a proven track record of success, with the Second World War as the starkest example.²⁹⁵ And in the case of OIF, it is difficult to image that pursuing the Decisive Force-inspired OPLAN 1003-98 would not have met a superior outcome to the Military-Technical Revolution influenced OPLAN 1003V. If overcommitment to Decisive Force by some officers was a problem threatening to limit the appropriate use of the military during the 1990s it would appear that the opposite problem, insufficiently vocal advocacy for the virtues of massive forces, was the issue in the run up to OIF.

What is to be done? If the United States once again finds itself astride two competing strategic paradigms, one with support from defense intellectuals and the other

²⁹³ Salazar Torreon and Plagakis, *Instances of Use of United States Armed Forces Abroad, 1798–2022*, 2, 5, 8.

²⁹⁴ Hoffman, *Decisive Force*, 113–115.

²⁹⁵ Hoffman, *Decisive Force*, 8.

with support from military officers, how can the gap be bridged? This appears to be a problem unlikely to disappear in the near future, as the number of political leaders with military experience continues to be very low by historical standards.²⁹⁶ To begin with, it would seem important to acknowledge that no military strategic paradigm is always correct for all situations. This is one realm where warfare appears more akin to art than science: while mathematics has the privilege of problems that can be answered with perfect accuracy, security studies has no such luxury. One tentative step in the right direction might be through education reform. Professional military education courses across the joint force should be reviewed to determine if they give sufficient space to some of the key themes discussed in this thesis: paradigm shift, RMAs, strategic culture and civil-military relations. Moreover, this education needs to begin very early in an officer's career. It is probably too late to introduce these concepts to a colonel or naval captain at a war college, they need to be embedded early and often throughout an officer's career in order to bear fruit by the time said officer is in a position with strategic responsibilities. Similarly, the training and education requirements of DOD civilians should undergo a similar review and potential revision.

It is of course a truism that simply adding a few more PowerPoint slides to already overburdened professional military education classes taught to undermotivated students will not turn every uniformed service member into a Clausewitz. But we must start somewhere. Formal education, which takes up a considerable portion of every officer's career and has entire general officer-level commands, like TRADOC, devoted to its execution is a logical place to begin.

B. IMPLICATIONS FOR RESEARCH ON CRISIS RESPONSE AND PARADIGM SHIFT

The study of the impact of the Military-Technical Revolution on Iraq war planning also poses interesting questions for how organizations respond to crises. Kuhn wrote

²⁹⁶ Drew Desilver, "New Congress Will Have a Few More Veterans, But Their Share of Lawmakers Is Still Near a Record Low," Pew Research Center, December 7, 2022, <https://www.pewresearch.org/short-reads/2022/12/07/new-congress-will-have-a-few-more-veterans-but-their-share-of-lawmakers-is-still-near-a-record-low/>.

presciently about the impact that a crisis plays in inducing feeling of disorientation, and the role these feeling have in inducing paradigm shifts.²⁹⁷ While in the physical sciences this would appear to be almost universally for the good, it appears to be a less inherently positive phenomenon in the realm of military strategy, where the ability to arrive at any of genuine and lasting consensus is far more tenuous. Without the events of 9/11 and the national shock it introduced, would the Bush administration have been able to justify the nearly complete pivot to the Military-Technical Revolution paradigm that it undertook with the wars in Afghanistan and Iraq? As discussed earlier, despite a very clear desire to pivot away from Decisive Force in the months before 9/11, the administration was largely unsuccessful in this effort, as evidenced by its inability to terminate U.S. forces devoted to peacekeeping efforts in the Balkans.²⁹⁸

Using the post 9/11 paradigm shift to the Military-Technical Revolution as a starting point, future researchers should investigate the relationship between national security crisis and paradigm shift, both at the organizational and policymaker level. This would probably best be approached from an interdisciplinary perspective, combining careful historical examination of the primary source records, review of sociological studies of other kinds of group responses to stress, and psychological examinations of how individual leaders react under pressure. The results of this work might help us better understand why so many senior leaders seemed so willing to jettison existing Iraq war planning in favor of a paradigm that, despite lessons supposedly gleaned from the largely dissimilar case of Afghanistan, was untested. Going forward, if policymakers and their advisors are aware of factors that lead to this tendency, they might be able to better guard against it following a future major order crisis.

C. IMPLICATIONS FOR FUTURE RESEARCH ON VIEW OF TECHNOLOGY AS A STRATEGIC PANACEA

A final implication for future action and research that warrants discussion here is the relevance of the Iraq war case study as part of the broader trend to search for

²⁹⁷ Kuhn, *The Structure of Scientific Revolutions*, 68.

²⁹⁸ Folse, *Operation Enduring Freedom*, 17–18.

technological panaceas to strategic problems. This problem did not begin with the Military-Technical Revolution. It has arguably been a feature of strategy since at least the beginning of the 20th Century, when Douhet confidently predicted that aircraft had the potential to render land forces irrelevant to the outcome of wars in the future.²⁹⁹ This tendency is perhaps especially strong in the United States where, as Hoffman noted, the national culture is shaped by “our wealthy economic position and our capacity for innovation and technology.”³⁰⁰ The fundamental motivations behind this drive are sound, perhaps even noble. It seems foolish not to employ any technological advantage at our disposal if doing so could go help gain an advantage over an adversary. Even more so, it would seem immoral to not use said technology if it would help conserve national resources or, more importantly, save human life. Indeed, one of the chief predictions about the Military-Technical Revolution was that it would reduce the need for large formations of ground troops.³⁰¹

However, given developments in post-invasion Iraq, it is not all clear that this promise was born out. The end of the conventional military campaign saw a descent into sectarian violence that proved immensely costly in terms of American and Iraqi lives, and in terms of economic costs. Even today, Iraq remains an unstable place and it is unclear when the last American troops will depart the country.³⁰² While it is ultimately unknowable, it seems at least plausible that a greater initial troop commitment would have been better able to secure the post-war peace, limiting the post-war chaos and resulting in fewer overall casualties. Paradoxically, pursuing the Military-Technical Revolution paradigm in Iraq may have cost more lives than it saved.

²⁹⁹ Giulio Douhet, *The Command of the Air*, trans. Dino Ferrari (Washington, D.C.: Air Force History and Museums Program, 1998), 9, https://permanent.access.gpo.gov/airforcehistory/www.airforcehistory.hq.af.mil/Publications/fulltext/command_of_the_air.pdf.

³⁰⁰ Hoffman, *Decisive Force*, 4.

³⁰¹ Cohen, “A Revolution in Warfare,” 53.

³⁰² “Why U.S. Troops Remain in Iraq 20 Years After ‘Shock and Awe,’” Associated Press, March 15, 2023, <https://www.usnews.com/news/world/articles/2023-03-15/why-us-troops-remain-in-iraq-20-years-after-shock-and-awe>.

What is the way forward and what can be learned from this experience? As with the study of the impact of national security crises on paradigm shift initiation, future researchers should continue to investigate the impact that technology has on strategic planning, of which this thesis is but one more small contribution. Perhaps most importantly, future researchers should take any information gained from the Iraq paradigm shift case study and project forward: how might innovations in fields like AI, biotechnology, cyber, and robotics shape the way we think about force packages for future missions? Will they lead us to believe (as technologies like stealth and PGMs did during OIF) that smaller force packages will be acceptable? Conversely, are these technologies truly so disruptive that smaller ground troops levels will actually be appropriate in the future? Resolving such questions is beyond the scope of this project, but their answers are essential. As of the writing of this thesis, Russia's war in Ukraine lumbers on, and the People's Republic of China continues to sound off with bellicose rhetoric³⁰³ The success of the future force depends in part on how well we learn the history behind the planning for OIF.

³⁰³ Vasco Cotovio, Frederik Pleitgen, and William Bonnett, "Unfazed by Strikes, Ukrainians Gear Up for Counteroffensive," CNN, May, 30, 2023, <https://www.cnn.com/2023/05/30/europe/ukraine-counteroffensive-russia-preparations-intl/index.html>; and Nectar Gan, "Xi Jinping Tells China's National Security Chiefs to Prepare for 'Worst Case' Scenarios," CNN, May 31, 2023, <https://www.cnn.com/2023/05/31/china/china-xi-national-security-meeting-intl-hnk/index.html>.

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