

Origins of Adaptation: Cultural Emergence in the US Army, 1970-1991

by

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ABSTRACT

Through the 1970s, the US Army faced an ascendant Soviet Union, but lacked the equipment, personnel, and doctrine to be a credible conventional deterrent in Europe. A sense of foreboding and apprehension permeated the US Army of the late 1970s, but by the mid-1980s, with investments in equipment, doctrine, training, and organizations the culture had evolved to one of readiness and reserved confidence. The sudden Soviet collapse, combined with the convincing victory during Operation DESERT STORM inaugurated a period of reflection which imagined a revolutionary future of unparalleled technological and military dominance. But in the attempts to describe and imitate the transformations of the late 1970s and 80s, theorists neglected the human elements of the underlying military culture. Exploring this relationship between culture and transformation is essential to not only complete the understanding of the period, but also to draw preliminary observations about how military culture evolves.

DEDICATION

To Alison, Samuel, Isaac, Jonah, and Nathan.

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Glossary

4GW – Fourth Generation Warfare
ABM – Anti-Ballistic Missile
ACR – Armored Cavalry Regiment
AFQT – Armed Forces Qualification Test
AH-64 Apache – A US Attack Helicopter
ALB – Air-Land Battle, a US Army doctrine
AMC – Army Materiel Command
AMH – American Military History
AoE – Army of Excellence, a US Army organization plan
APC – Armored Personnel Carrier
ATGM – Anti-Tank Guided Missile
AVF – All Volunteer Force
BAS – Bulletin of Atomic Scientists
Big 5 – US Army Equipment fielded in the early 1980s, includes M1 Abrams, M2/M3 Bradley, AH-64 Apache, UH-60 Blackhawk, and Patriot Missile
BMP – *Boyevaya Mashina Pekhoty*, Soviet Infantry Fighting Vehicle
BTR – *Bronetransportyor*, A Russian Armored Personnel Carrier
CAS – Complex Adaptive Systems
CBO – Congressional Budget Office
CDC – Combat Development Command
CGSC – Command and General Staff College
CONAR – Continental Army Command
CONUS – Continental United States
Div 86 – Division 86, a US Army organization plan
DOPMA – Defense Officer Personnel Management Act
DRS – Division Restructuring Study
FAS – Federation of American Scientists
FM 100-5 – Field Manual 100-5, a doctrinal publication

FOFA – Follow-on Force Attack
FORSCOM – Forces Command
GPS – Global Positioning System
ICBM – Intercontinental Ballistic Missile
IED – Improvised Explosive Device
IFV – Infantry Fighting Vehicle
IISS – International Institute for Strategic Studies
INF – Intermediate Range Nuclear Forces Treaty
ISTAR (see also RISTA and RSTA) – Intelligence, Surveillance, Target Acquisition, and Reconnaissance
IT-RMA – Information Technology Revolution in Military Affairs
M1 Abrams – A US Main Battle Tank, later versions M1A1 and M1A2
M113 APC – A US Armored Personnel Carrier
M2/M3 Bradley – A US Infantry Fighting Vehicle
M48 / M60 Patton – A US Main Battle Tank
MBT – Main Battle Tank
MMI – Major Military Innovation
MQ-9 Reaper – A US made, armed, remotely piloted, unmanned aerial vehicle
MR – Military Revolution
MTR – Military Technical Revolution
NATO – North Atlantic Treaty Organization
NCO – Non-Commissioned Officer
NTC – National Training Centre
ONA – Office of Net Assessment, a Pentagon Think-tank
OTRI – Operational Theory Research Institute
PGM – Precision Guided Munition
PME – Professional Military Education
RISTA (see also RSTA and ISTAR) – Reconnaissance, Intelligence, Surveillance, and Target Acquisition
RMA – Revolution in Military Affairs

ROTC – Reserve Officer Training Corps
RSTA (see also RISTA and ISTAR) – Reconnaissance, Surveillance, and Target Acquisition
RUK – Reconnaissance-Strike, a Soviet concept
SALT – Strategic Arms Limitations Talks
SAM – Surface to Air Missile
SAMS – School of Advanced Military Studies
SASO – Soviet Army Studies Office
SDI – Strategic Defense Initiative
SDIO – Strategic Defense Imitative Office
SOD – Systemic Operational Design
START – Strategic Arms Reduction Treaty
T14 Armata – A Soviet Main Battle Tank
T-72 – Soviet Main Battle Tank
TRADOC – Training and Doctrine Command
USSR – Union of Soviet Socialist Republics

Chapter 1 – What is the Relationship between Culture and Military Innovation?

The Battle of 73 Easting

On 26 February 1991 the lead troops of the US 2nd Armoured Cavalry Regiment (ACR) advanced east into Iraq as part of operation Desert Storm. Since there were no identifying features in the empty desert, where even the Iraqis had difficulty navigating, the Americans used their new Global Positioning System (GPS). Imagined grid lines in the empty desert were visible through the GPS and marked the kilometers on their map sheets, with those delineating distance along the East/West axis called Eastings. Shortly after they crossed into Iraq from Saudi Arabia, 2nd ACR turned east on the 50 Easting to advance into Kuwait and in the late afternoon of 26 February, 72 hours into the invasion, were approaching the 70 Easting.

Captain H.R. McMaster's "Eagle Troop," consisting of nine Abrams Tanks, a dozen Bradley Infantry Fighting Vehicles (IFVs) and a number of other supporting vehicles advanced east through a sandstorm in 10km dashes with other troops from 2nd Squadron on their flanks. Their collective task was to locate the Iraqi elite Republican Guard Divisions, experienced soldiers of the Iran-Iraq war, for destruction by the remainder of VII Corps. At around 4pm on 26 February, as they approached the 70 Easting where they were to halt, Eagle Troop had already had a series of skirmishes with small scout elements of the Tawakalna Division's 18th Brigade. Because of these skirmishes, and as they neared their latest limit of exploitation, McMaster moved his nine tanks into the lead, and over a slight rise, less than two kilometers to his east, came

into contact with eight Iraqi T-72s in dug-in fighting positions. As they engaged these lead tanks and pressed their attack, Eagle Troop came into contact with Iraqi depth bunkers supported by Soviet made BMPs¹ and a reserve force with additional T-72s.² Since it was tactically unsound to halt and offer himself as a static target for a counter attack, McMaster pressed east through the Iraqi anti-personnel mines, “cutting a five kilometer wide swath of destruction through the enemy’s defense.”³

Twenty three minutes after the attack began, Eagle Troop consolidated on another slight rise along the 74 Easting. From this temporary strongpoint, the Americans continued to engage in skirmishes with Iraqi positions further east, repelled a company sized counter-attack in the evening, and destroyed several more Iraqi tanks and IFVs before inviting them to surrender. 2 ACR called for artillery to attack masses of vehicles and equipment even further east, which they would later find to be ammunition bunkers, transport trucks and additional fighting vehicles.⁴ Shortly after 10pm, the First (US) Infantry Division passed through 2 ACR and assumed the lead, leaving the Cavalry troops to eliminate any remaining pockets of resistance along the 73 Easting and to collect the prisoners.

¹ The Soviet equivalent to the Bradley IFV is the BMP - Boyevaya Mashina Pekhoty, lit. Combat Vehicle Infantry.

² Steve Zaloga and Peter Sarson, *T-72 Main Battle Tank 1974-1993* (London: Osprey, 1993), 38. The Iraqi Lion of Babylon Main Battle Tanks were essentially a domestically produced version of the Russian T-72M1.

³ Captain H.R. McMaster, “*Battle of 73 Easting*”, is an early account held at the Donovan Research Library in Fort Benning, GA, https://www.benning.army.mil/Library/content/McMasterHR%20CPT_Battleof73Easting.pdf; A later, edited account appears in H.R. McMaster, “Battle of 73 Easting,” in *Leaders in War WestPoint Remembers the 1991 Gulf War*, ed Frederick Kagan and Christian Kubik, (New York: Frank Cass, 2005), 112.

⁴ 1st LT Daniel L. Davis, “The 2d ACR at the Battle of 73 Easting” in *Field Artillery*, (April 1992): 53.

McMaster later reported the outcome of the battle within his troop's sector alone: "from the initiation of our assault until the battle hand-over with First Infantry Division, we destroyed approximately fifty T-72s, twenty-five armoured personnel carriers, forty trucks, and numerous other vehicles such as SA-9 air defense systems."⁵ Eagle Troop was outnumbered more than five-to-one in tanks, and roughly two-to-one in IFVs. Tactically, McMaster was at a disadvantage given he was assaulting a prepared reverse-slope position intended to give maximum cover and optimum weapons ranges to a defender against an exposed attacker, roughly equivalent to a further three-to-one disadvantage. Despite what conventional tactical calculus would compute as a ten-to-one handicap, and admittedly not accounting for technological and qualitative differences, Eagle Troop sustained no casualties while destroying a force nearly three times its size. Tank battles at Al Busayyah, Medina Ridge, and Norfolk in other part of the Iraqi theatre resulted in similarly overwhelming victories. Was this a sign of some new and unprecedented form of conventional warfare – a revolution in military affairs perhaps?

General Robert H. Scales opened his appropriately titled *Certain Victory* (1997) with a recounting of the battle of 73 Easting to highlight the significance of Operation Desert Storm. The ground campaign lasted only 100 hours and advanced farther and faster than any other force in the history of mechanized warfare. Scales summarized: "as part of the Coalition, the American Army decisively defeated the fourth largest field

⁵ McMaster in *Leaders in War*, 112.

army in the world. It did so at the lowest cost in human life ever recorded for a conflict of such magnitude.”⁶ This was a discontinuity in the conduct of warfare of a magnitude that required explanation. When asked why they had won so quickly in Iraq, US Generals would say: “this war didn’t take 100 hours to win, it took 15 years.”⁷ If the significance of Desert Storm is rooted in the years following the American defeat Vietnam, how did they get from one to the other? More importantly, could the US do it again for the next conflict while maintaining a technological edge over other challengers?

Lukewarm Warfare

There is no widely accepted name yet for this current period of post-cold-war conflicts, and as a result the paradigm cannot crystalize into understanding. William S. Lind et al offered “Fourth-Generation Warfare,”⁸ but this term is disputed and has not gained wide acceptance.⁹ More general terms in reference to the historic period as “Digital” or “Information Age” warfare have not gained wide acceptance. The Prussian philosopher of war Carl von Clausewitz’s theoretical approach distinguished between attrition and annihilation soon after the paradigm became apparent in the Napoleonic Wars. In the absence (or overabundance) today of perceptive theorists, modern armies

⁶ Robert H. Scales, *Certain Victory the U.S. Army in the Gulf War*, (Washington, DC: Brassey’s, 1997), 5. This is the official history of the US war in Iraq originally published in 1993 by the Office of the Chief of Staff of the US Army.

⁷ MGen Barry McCaffrey cited by Scales in *Certain Victory*, 35.

⁸ William S.Lind, et al, "The Changing Face of War: Into the Fourth Generation", *Marine Corps Gazette* (October 1989), 22–26.

⁹ Antulio J. Echevarria, II, *Fourth-Generation War and Other Myths*, (Strategic Studies Institute, November 2005), <http://ssi.armywarcollege.edu/pubs/display.cfm?pubID=632>

are already overcome by the paradigmatic shift but lack the language to express it. Just as Michael Robert's Military Revolution thesis¹⁰ was unique and significant in that he identified a redefined relationship between the state and the monopoly of application of violence, there is a palpable sense of living in a period not unlike the Thirty Years War – a long, religiously branded but ideologically motivated conflict where concepts like 'violence', 'war', and 'state' test the boundaries of established meaning. Modern armies are now in a space of a simultaneous monopoly of the most destructive weapons by select few states, but are challenged by trends in democratization and decentralization of the most basic application of organized force. The 500 year old paradigm of the modern state's monopoly on violence for political aims is eroding just as its ability to build and control annihilating military power has peaked. As a result, "Hybrid Warfare" is beginning to emerge as the preferred label in the post 9/11 period, popularized by recent Soviet thinking and activities in Ukraine which also neatly merged information operations and cyber activities. It is also occasionally expressed as "Gray-Zone" warfare or "The Gerasimov Doctrine."¹¹ The implicit suggestion is that warfare is not exactly declared, attributable, or neatly categorized into conventional or irregular,

¹⁰ A more detailed treatment follows in Chapter 2.

¹¹ Named after General Valery V. Gerasimov, Chief of the General Staff of the Soviet Armed Forces since 2012, though this would not be the first time the West borrows doctrinal concepts from the Soviets. See for instance Andrew J. Duncan "New 'Hybrid War' or Old 'Dirty Tricks'?: The Gerasimov Debate and Russia's Response to the Contemporary Operating Environment" in *Canadian Military Journal* 17, no 3 (Summer 2017): 6-16; Williamson Murray and Peter Mansoor eds, *Hybrid Warfare Fighting Complex Opponents from the Ancient World to the Present*, (Cambridge: Cambridge University Press, 2012); Joseph L. Votel et al, "Unconventional Warfare in the Gray Zone" in *JFQ* 80, no. 1 (2016): 101-109; Michael J. Mazarr *Mastering the Gray Zone: Understanding a Changing Era of Conflict*, SSI, 2015, <https://ssi.armywarcollege.edu/pubs/display.cfm?pubID=1303>; Roger N. McDermott, "Does Russia have a Gerasimov Doctrine?" in *Parameters* 46, no. 1 (Spring 2016): 97-105.

manoeuvre or cyber, attrition or annihilation, moving from binary “is” or “is not” to a continuous spectrum and below a threshold. Even this label has its problems because it fails to differentiate this current period from any other period in warfare.¹² In short, how is “hybrid warfare” different from “warfare?” And if the answer is “not at all” then are concepts such as the tactical, operational, and strategic levels of warfare, categorizations of annihilation or attrition, regular or irregular, or any other arbitrary distinctions even useful?

The paradigm shift is conflated with the technological change in the 1960s. Incremental, evolutionary, and increasingly frequent changes of technology achieve the same aims, but at progressively longer ranges, with progressively better accuracy, and progressively fewer lives at risk. An MQ-9 Reaper drone’s hellfire missiles, for example, essentially do the same thing as a long bow – they allow destruction at standoff range. But along with remotely piloted vehicles and electro-optic sensors which guide missiles to unprecedented ranges, the underlying relationship between those who can mobilize such technologies and decide their use was, until recently, confined to the nation state. Today, a private citizen can craft comparable destructive power and pack it in a pressure cooker, lacking only the nuance in the sophistication of the delivery methods and the industrial scale of production.

A concurrent trend is the rise of non-state actors and state elements which behave like non-state or rather legally unconstrained actors. This includes the organizational

¹² Duncan, “New Hybrid War,” 9.

flattening and swarming with disparate elements working towards a common ideological goal – that is, that every actor is a strategic political player.¹³ When conflict is as frequently motivated by an irrational individual or small group ideology as it is by rational, national, common self interest in international competition for prestige or resources, the capacity to privately upscale destruction becomes a political force. In the early 1990s commentators began to perceive this significant departure as a revolution in the conduct of war. More specifically, the term “Revolution in Military Affairs” (RMA) was an attempt to characterize these changes and provide an overarching theory about the process underway.

The RMA concept contained an underlying assumption that all military problems were ultimately reducible to equipment, organization, or doctrine, available only to the most industrialized nations. This thinking has led, in the US at least since 1991, to a readiness to apply a militarily solution to complex social, economic, and political problems. This is a drastic departure for a nation that has been late to every other war so the new paradigm is best summarized in the cliché that to someone with a hammer, every problem looks like a nail. Since the 1990s the US has fielded the world’s finest hammer. But this propensity to engage in armed conflict is tempered by another trend emanating from the Vietnam experience, termed post-heroic warfare by Edward Luttwak.¹⁴ He refers to the half-hearted willingness of western states to engage in conflicts which they do not perceive as existential. In the ideologically motivated

¹³ *Swarming* is an example of *emergence* which will be addressed in the section on *complexity* in the next chapter.

¹⁴ Edward N. Luttwak, “Post-heroic Military Policy,” *Foreign Affairs* 75, no. 4 (1996): 33-44.

conflicts of the 21st century, for all the apocalyptic rhetoric, there is no actual threat of collapse of a western nation.

From these points of departure this work began with a series of questions exploring the relationship between culture and military adaptation. It was driven in particular by asking: What makes some nations more innovative in the realm of military matters and other less so? Put differently: What conditions must exist for a particular nation to develop particular adaptations which become a distinct advantage? Which advantages are revolutionary and which are merely incremental and evolutionary? And consequently: What is the impact of (military, strategic, national) culture on innovation? What is the impact of innovation on culture? What follows is not a work of theory per se, but rather a series of interrelated observations, grounded in historical trends, regarding the relationships between war, culture, society, politics, technology and armed forces since the 1970s.

Military innovation and adaptation studies today are a nascent interdisciplinary field, spanning international relations, organizational theories, theories of diffusion of innovations, and history amongst others; and only recently beginning to explore the effects of unique military and national cultures on military innovation. This study therefore also ambitiously draws on literature of military innovation, military and strategic culture, the RMA thesis, the Military Revolution, the second offset strategy, the American Way of War, and even group psychology, generation theories and studies of demographics.

The focus is on the decades leading to the First Gulf War, or what Robert Tomes calls “the thirty year innovation process that began in the shadow of the US evacuation

of Saigon.”¹⁵ But the context extends to the early 1960’s with the initial weapons developments and well past the end of the Cold War into the start of the War on Terror.¹⁶ Since the successful US Army evolution between Vietnam and the First Gulf War, theorists, militarists, statesmen and strategists have been working towards replicating that same evolution. What makes the discussion poignantly relevant today is Clifford J. Rogers’ concept of punctuated equilibrium as applied to military revolutions.¹⁷ These key punctuations have occurred regularly since WWII with carriers, nuclear weapons, missiles, jet engines, and transistors, and the US has enjoyed a technological advantage in miniaturization, sciences and application demonstrated convincingly in 1991. But in the two decades since, with the proliferation and decentralization of technology, this advantage is now eroded to the point where competitors have established a new equilibrium, either matching the miniaturization, or developing tactics to offset it. The question now is what the next punctuation might present.

¹⁵ Robert R. Tomes, *US Defense Strategy from Vietnam to Operation Iraqi Freedom: Military Innovation and the new American way of War, 1973-2003*, (Milton: Routledge 2007), 6. Tomes writes from a post 9/11 perspective.

¹⁶ This is a terrible name for a conflict, but is the most commonly known. A marginally better term is “The Long War” noted in Emile Simpson, *War from the Ground Up: 21st Century Combat as Politics*, (Oxford: Oxford University Press, 2012), 9.

¹⁷ Clifford J. Rogers, "The Military Revolutions of the Hundred Years' War" in *The Journal of Military History* 57, no. 2 (1993): 241-278.

The Revolution in Military Affairs (RMA) Thesis: Technological, Doctrinal, and Organizational Explanations

In the wake of the American victory in the Gulf in 1991, there was an explosion of literature, proposing alternatively that a fourth generation of warfare (4GW) had begun,¹⁸ that an information technology driven revolution in military affairs (IT-RMA) was in progress,¹⁹ or that this was an example of the American Way of War – that of utter annihilation of the enemy.²⁰ Recalling the political and social dimensions of the information age, some have gone so far as to call the period a revolution in strategic affairs.²¹ Much of this literature, along with other relevant ideas will be explored in the next chapter.

Proponents of 4GW and RMA pointed to precision guided munitions (PGMs) as the key technological breakthrough,²² while others claimed it was the Reconnaissance, Surveillance, and Target Acquisition (RSTA) overmatch of the Americans which

¹⁸ William S. Lind, and LtCol Gregory A. Thiele, USMC, *4th Generation Warfare Handbook*. (Kouvola, Finland: Castalia House, 2015).

¹⁹ Thomas G. Mahnken. *Technology and the American Way of War since 1945*. (New York: Columbia University Press, 2008), 157; Steven Metz and James Kievit, *The Revolution in Military Affairs and Conflict Short of War*. (Carlisle: Strategic Studies Institute, 1994); Steven Metz and James Kievit., *Strategy and the Revolution in Military Affairs: From Theory to Policy*. (Carlisle: Strategic Studies Institute, 1995). Primarily driven through technology, doctrine and structures were formed based on the perceived imminent change in the nature of war.

²⁰ Russell Frank Weigley, *The American Way of War: a History of United States Military Strategy and Policy*. (New York: Macmillan, 1973); Antulio J. Echavarría II., *Reconsidering the American Way of War: US Military Practice from the Revolution to Afghanistan*. (Washington: Georgetown University Press, 2014.); Wayne E. Lee, "Mind and Matter--Cultural Analysis in American Military History: A Look at the State of the Field." *Journal of American History* 93, no. 4 (2007). 1116-42.

²¹ Lawrence Freedman, "The Revolution in Strategic Affairs," *Adelphi Papers* 38 (Oxford: The International Institute of Strategic Studies, 1998); Lawrence Freedman, "The Counterrevolution in Strategic Affairs," *Daedalus*, Vol 140, No 3 (Summer 2011): 16-32.

²² Keith L Shimko. *The Iraq Wars and America's Military Revolution*. (Cambridge: Cambridge University Press, 2010).

brought them such overwhelming victory.²³ The combination of RSTA, later RISTA with the integration of intelligence functions (most recently ISTAR), and PGMs would form part of what is known as the “second offset strategy,”²⁴ or the American qualitative offset of Soviet quantitative combat power which would make conventional war possible without the need to resort to nuclear weapons.²⁵ Still others looked back to the closing years of the Vietnam War and the creation of the US Army’s Training and Doctrine Command (TRADOC) in 1973 with WWII and Korea veteran General William DePuy at its head. In this literature, he is widely credited with laying the foundations of the 1986 “Air-Land Battle” (ALB) Doctrine and with refocusing the Army’s training to conventional operations – both directly contributing to the later success in the Gulf.²⁶ Finally, there was an organizational explanation founded on the Army of Excellence (AoE), an evolution of the Division 86 studies of the late 1970s which questioned the force mix and weight of US Army divisions, ultimately recommending the formation of

²³ Shimko, *America’s Military Revolution*, 1-25; Stephen Biddle, citing William E. Odom, William J. Perry, Ray Cline and others in “The Past as Prologue: Assessing Theories of Future Warfare” in *Security Studies*, 8, no. 1 (1998), 2.

²⁴ Daniel Fiott, “Europe and the Pentagon’s Third Offset Strategy” in *RUSI Journal* 161, no. 1 (2016): 26-31

²⁵ Andrew F. Krepinevich. “Cavalry to Computer.” In *National Interest* no. 37 (1994): 30-43; Andrew F. Krepinevich and Barry Watts. *The Last Warrior: Andrew Marshall and the Modern American Defense Strategy* (New York: Basic Books, 2015); Tomes, *US Defense Strategy*.

²⁶ Jean R. Moenk, *Operation STEADFAST Historical Summary: A History of the Reorganization of the U.S. Continental Army Command (1972-1973)* (Fort McPherson, Georgia: Historical Office U.S. Army Forces Command, 1974); Major Robert A. Doughty, *Leavenworth Papers No 1. The Evolution of US Army Tactical Doctrine, 1946-76*. (Fort Leavenworth, Kansas: Combat Studies Institute, 1979); Henry G. Gole, *General William E. DePuy: Preparing the Army for Modern War*, (Lexington: University Press of Kentucky, 2008); Major Paul H. Herbert, *Leavenworth Papers No 16. Deciding What Has to Be Done: General William E. DePuy and the 1976 Edition of FM100-5, Operations* (Fort Leavenworth: Combat Studies Institute, 1988); Robert M. Jensen. *Forging the Sword: Doctrinal Change in the U.S. Army*. (Stanford: Stanford University Press, 2016).

the heavy divisions which had so much success in Desert Storm.²⁷ Western armies, historians, and strategists have been trying to explain and emulate the dramatic victories of Desert Storm, but the key explanations which have been offered, technology, doctrine, and organization are insufficient.²⁸ These were each representative of incremental rather than revolutionary change.

The RMA thesis and related explanations are unsatisfactory and to say that the period of change begins in 1973 is not entirely correct.²⁹ First there is no simple explanation because the conflicts in Southeast Asia and the Persian Gulf are not comparable in the styles of warfare practiced. Second, the US Army was not significantly different structurally or conceptually in 1991 than it was in 1975, or even in 1945 in that it was still primarily as a mechanized force. Third, the initiation of the technological evolutions – those of new equipment and miniaturization credited with the RMA predate the Vietnam conflict, as do the initial organizational studies which would ultimately become the Army of Excellence. Moreover, no compelling argument places the RMA distinctly in the realm of revolutionary rather than evolutionary change. Finally, and most important, the human element is removed from the discussion while the military cultural shift of the 1970's and 1980's which includes both the end of conscription and a demographic transformation, is underdeveloped historically.

²⁷ John L. Romjue , *The Army of Excellence: The Development of the 1980s Army*, (Washington: Office of the Command Historian, US TRADOC, 1993).

²⁸ It was not until Don Starry became commander of TRADOC that these were integrated as a system. See the section on organization in chapter 3.

²⁹ Tomes, *US Defense Strategy*, 5.

An abridged survey of case studies of successful adaptations and innovations might begin with Prussia's victories during the wars of German Unification in the mid-19th century with the advent of the General Staff and the effective application of technological advancements such as the railway, or breech-loading artillery. Similarly, Germany in the early 20th c. and in the interwar period adapted not only technologically, but also doctrinally, organizationally, and conceptually to the developments of the tank, internal combustion engine, and High Frequency radio, and as a result the Wehrmacht was markedly more efficient than the Allies.³⁰ In concrete terms, when the Second Reich ended in 1918, the uncertainty and crisis were powerful drivers for General Hans von Seeckt's reforms which were in turn rooted in a more than century-old Prussian mode of adaptation through doctrinal innovation.³¹ A similar example now centers on the US after Vietnam and into the Gulf War. In the search for patterns, it is becoming apparent that national, military, and strategic cultures are drivers of such successes. From a historical perspective, it has become necessary to consider a longer view to account for these cultures— not only of the wars and battles which illustrated a particular supremacy, but of the period leading to them. In the starkest example, the US victory in the Gulf was the result of nearly 20 years of work towards parity and deterrence with the USSR,

³⁰ Martin van Creveld, *Fighting Power: German and U.S. Army Performance, 1939-1945*, (Westport: Greenwood Press, 1982), Col Trevor N. DuPuy *A Genius for War: The German Army and the General Staff, 1807-1945*, (Englewood Cliffs: Prentice-Hall, 1977), esp chapters 12 onward.

³¹ James S. Corum, *The Roots of Blitzkrieg: Hans von Seeckt and German Military Reform*, (Lawrence, Kansas: University of Kansas Press, 1992).

and it was a Corps from Europe which was best positioned, equipped, and prepared to respond in Iraq.³²

Drawing conclusions from the US Army performance in the First Gulf War demands a consideration of the US military from the mid-1970s onwards. Three stressors converged in that period: the Vietnam drawdown and evacuation of Saigon signaled the end of the Second Indochina War and the failure of containment; the surprising opening phases of the Yom-Kippur War demonstrated the near technological parity between Russian Anti-Tank Guided Missiles (ATGMs) and unsupported modern Israeli armour; and the approach to parity by the USSR to the US in terms of both nuclear launchers and warheads.³³ The US Army had already initiated periodic reorganization studies³⁴ and the events of the mid 1970s accelerated the organizational changes. These included the stand-up of the US Army's Training and Doctrine Command (TRADOC) effective 1 July 1973.³⁵ TRADOC, headed by General DePuy, led the way to a complete refocus by the US Army in particular towards training for conventional operations.³⁶ Similarly, in October 1973 the US Secretary of Defence created the Office of Net Assessment (ONA) with Andrew Marshall as its first chief and a mandate to analyze the relative strengths of the US and NATO against the USSR and

³² Stephen A. Bourque, *JAYHAWK! The VII Corps in the Persian Gulf War*, (Washington, D.C.: Department of the Army, 2002), chapter 2.

³³ Krepinevich, *The Last Warrior*, 75.

³⁴ Moenk, *Project Steadfast*, 1

³⁵ Moenk, *Project Steadfast*, 286

³⁶ Romie L. Brownlee, and William J. Mullen, III, *Changing and Army: An Oral History of General William E. DePuy, USA Retired*, (Washington: Centre of Military History, 1979), chapter IX.

Warsaw Pact.³⁷ Over the next two decades, amongst its other work, the ONA would identify the stark cultural differences between the East and West and the conceptual trends emanating from the USSR of what TRADOC would ultimately turn into the US operational level doctrine of Air-Land Battle (ALB). Even when combined with the development and fielding of “The Big Five” US Army vehicles in the early 1980s,³⁸ as well as what would become the second offset strategy’s emphasis on RSTA, these adaptations do not sufficiently explain the dramatic results of Desert Storm.

For historians, Desert Storm represents variously a discontinuity or a punctuation in the long sine curve of history, but as an event it is only the symptom of a deliberate process of change. The two key points of departure for historical academic discussions include Michael Robert’s Military Revolution hypothesis and Russel Weigley’s *American Way of War* (1973). In the early 1990’s these became the foundation of the RMA thesis and debate (or the IT-RMA) with most observers at the time pontificating on the dramatic victories in the Gulf War, later reaffirmed by the precision bombing campaign over Kosovo. This technologically infused, stand-off range, precision guided, low collateral damage and low casualty western way of war was ambitiously ushering in a new era - another revolution - in warfare. But if Vietnam and the Yom Kippur War had such an effect on the US, what effect might the US victories in the Gulf and the

³⁷ Krepinevich, *The Last Warrior*, 95.

³⁸ The Abrams Tank, Bradley IFV, Patriot air defense missile, Blackhawk transport helicopter and Apache Attack Helicopter, to be discussed in more detail in subsequent chapters. Arguably, GPS and reliable long range communications could also be included with The Big Five, but are not discussed separately.

Balkans have had on their potential competitors like Russia, China or on anyone else who was watching?

Historians are not alone in considering these events as significant. The expanding literature has drawn on anthropology, sociology, international relations, and even evolutionary biology to begin understanding culture and diffusion of ideas, and their effects on military performance. Historian Clifford J. Rogers, who wrote extensively on the MR debate, has also observed a phenomenon borrowed from evolutionary biology which points to the punctuated equilibrium between large leaps in innovation. These are periods where one force's superiority only lasts as long as it takes for the diffusion of ideas – or equipment – into the adversary's arsenal. Whether it is the concepts of blitzkrieg and all arms manoeuvre warfare, or nuclear weapons, it is always only a matter of time before the challenger can adopt the concept to reach parity, adapt or counter-innovate to earn advantage or even superiority vis-à-vis the original innovation. Put simply, this is a rock-paper-scissors relationship, with a constantly expanding cast of possible throws. Clifford Rogers' observation is supported by any arms race in the 20th century.

Innovative leaps by Prussians, Germans, and Americans illustrate at least two key observations. First is the acknowledgement that significant adaptations and innovations can occur during a period of relative peace rather than in wartime and that they can be particularly effective because of the surprise they provide. Also because each adaptation requires an input of resources, peacetime militaries cannot afford to spend on uncertain innovations. Second, and perhaps more important, is that the modes of adaptation and innovation are rooted in the cultures of the creator – that is, each

collective culture is drawn to a particular mode of solution be it technological or organizational, incremental or disruptive, and that this mode is frequently rooted in the last successful adaptation or innovation. Even more significant is that the culture, as handed down through time, is itself rooted in the most recent successful adaptation. In other words, when one mode of adaptation works, institutions are likely to attempt to repeat it and the adhesion to these modes is directly proportional to the severity of the most recent threat.³⁹

Meanings

Because terminology is drawn from multiple disciplines, the key terms used here need definition. Of these, most variably understood will be *culture*. From its common meaning of high culture and arts, it has evolved with the cultural turn in the social sciences and humanities to be significantly more inclusive. As it underlies behaviour, even implicitly and sub-consciously, and because no natural boundaries allow for a simple differentiation, I propose for culture to be inclusive, such that *Culture is all those things affecting the behaviour of societies which are not biologically transmitted*.⁴⁰ Essentially, it is the software of our hardwired behaviour and impacts all learned behaviour – or all things which are nurtured. In this sense, it is not dissimilar from ideology, though the latter is included in the former. Ideology can be transmitted, along

³⁹ Isabel V. Hull, *Absolute Destruction: Military Culture and the Practices of War in Imperial Germany*, (Ithaca: Cornell University Press, 2005), chapter 4. A more detailed discussion follows in my Chapter 4 below.

⁴⁰ This definition relies on Peter J. Richardson and Robert Boyd, *Not by Genes Alone*. (Chicago: Chicago University Press, 2005), 5, truncated here as “culture as information capable of affecting human behaviour, acquire[d] from other members...through...social transmission,”

with values and principles, and can be sub-conscious, but culture also includes those arts and histories, physical artifacts, and elements of individual identity including even the structure of language which in turn reflects and affects how ideas are transmitted and modified within a society such that culture is a superset of ideologies. While the definition may seem at first too broad, it is because it is inclusive of sub-cultures: strategic, national, military, services, branches and corps and even units each have their own variation of a sub-culture. Culture is also manifestly malleable, though the mechanisms of these changes have not been sufficiently studied. A corollary to this definition requires at least some homogeneity as contentiously proposed by Samuel Huntington.⁴¹ Taking cultures to be broadly overlapping of modern states is a reasonable approximation, knowing full well that it is imperfect.⁴² This corollary will be discussed in more detail with the corresponding premise.

The literature of International Relations and Psychology both include the term *norms*, and in those milieus it is used to mean *consensual standards of behaviour in certain contexts*. These should not be confused with culture, since culture also includes language, religion, and artefacts and is in effect a superset of norms, though both influence behaviour. Culture can be said to influence norms, or in more scientific notation: that norms are a function of culture. In the specific context of military affairs,

⁴¹ Samuel P. Huntington, *The Clash of Civilizations and the Remaking of the World Order*, (New York: Simon & Schuster, 1996). This is the full length monograph not to be confused with the 1993 article by the same name in *Foreign Affairs*. Huntington's ideas are discussed in more detail and context in chapter 2.

⁴² Shalom H. Schwartz. "A Theory of Cultural Value Orientations" in *Comparative Sociology* 5, no. 2-3 (2006): 137-182.

examples of international norms include the two identified by Theo Farrell in *The Norms of War*: a focus on conventional war, including western style organization into services; and civilian supremacy in strategic decisions.⁴³

Adaptation and *innovation* also must be clarified. It may seem pedantic to differentiate between the two since they are often used interchangeably, but this is because an innovation could be an adaptation, or not. Since similar terms are used in evolutionary biology, the metaphor can be extended here. *Adaptation is a change in response to stimulus, making an organism better suited to its environment.* As such, and in the specific military environment, examples include “The Big Five” or “T14 Armata.”⁴⁴ These are vehicles which represent incremental changes to perceived threats by potential adversaries. That is, the Abrams was designed to defeat the T-72, but the Armata MBT was in turn designed by the Russians to defeat the Abrams. These are tit-for-tat improvements which are not new in kind, but in degree. Countless other incremental changes are readily available as examples such as the shift to millimeter wave radar, or thinner motor oil for use in sub-zero temperatures. The difficulty is in identifying the antecedent for which the adaptation can be said to be a response, though arguably any competitive pressure would qualify.

Similarly, *innovation* uses the metaphor of speciation which requires a new species to be able to reproduce itself. In the realm of concepts, reproduction occurs

⁴³ Theo Farrell, *The Norms of War: Cultural Beliefs and Modern Conflict*, (Boulder: Lynne Rienner Publishers, 2006), 45; See especially the table on Patterns of Norm Transplantation.

⁴⁴ The T14 Armata is the latest evolution of the Soviet MBT. See Defense Update, *New Russian Armour: First Analysis*. http://defense-update.com/20150509_t14-t15_analysis.html

when a concept has a new name, sign or symbol and therefore *innovation is a change which necessitates a new name*. The key threshold here is that for something to be totally new, it must be so named. In military affairs, examples include “machine gun,” “jet engine,” “barbed wire,” “blitzkrieg,” or “ICBM.” An innovation could occur in response to stimulus: i.e. in wartime, budget pressures, arms controls agreements, or existential threats in which case it is also an adaptation i.e. “tank” “aircraft carrier” “atom bomb” “general staff” respectively. It may be useful to think of these as counter-innovations. An innovation also does not necessarily make an organism (or organization) better suited to its environment, because *better* is also relative to multiple subjective criteria. A wholly new process for manufacturing ceramic armour may be more expensive, in which case it may not be necessarily better.

Another terribly misused term, likely because of its overabundance in political rhetoric, is *war* itself. War and warfare have specific legal meanings which originate in the state system and international law.⁴⁵ A declaration of war occurs between two states, or a default state of war exists in civil-war. Therefore, *war is interstate armed conflict*. Economic sanctions, cyber-attack, espionage, or armed action against non-state groups; against method (terrorism) or against an object (drugs) do not constitute war in the Westphalian sense. Civil war is legitimately called such because both parties have a claim on statehood. Counter-insurgency is also included since insurgents, despite

⁴⁵ Rooted in the peace of Westphalia, the present international system assumes the existence of sovereign states with exclusive authority over their domestic affairs with defined boundaries and monopoly on organized violence. This definition is based on the now obviously flawed assumption that the “state” overlaps the “nation” and that it contains a relatively homogenous ethnic, religious, linguistic or otherwise differentiated identity grouping.

asymmetric tactics, do have a claim on the state. The more recent phenomenon of hybrid war, and gray-zone warfare, refers to a state of conflict, non-attributable hostilities, or aggression below the threshold of declared state of war. The most recent and widely cited example is that of the ongoing Russo-Ukrainian war.⁴⁶

A term which inevitably appears any time innovations are discussed is *diffusion*, both in the literature on organizational management and in that on diffusion of military technology and ideas. Two common meanings deal with the penetration of an idea, process, or technology into a group. These could be intra-cultural, or dealing with acceptance within the group, or inter-cultural, or international as is the case for arms races. Therefore, for the purpose of the discussions which follow *diffusion is the spread of cultural elements through the transfer of an idea*. In a later chapter the discussion will identify the mechanisms by which cultural elements spread, forces which resist, and forces which accelerate adoption. In the international context, diffusion of an idea does not necessarily mean adoption or imitation, but could also mean counter-innovation (an adaptation), a modification of the idea to suit the cultural milieu, or even doing nothing. An example might be the diffusion, or proliferation, of nuclear weapons – some nations chose to develop them, others do not, and others still may have chosen to ally themselves with nuclear powers while another subset might have chosen to develop a ballistic missile shield.

⁴⁶ Dr. Phillip A Karber, *Draft 'Lessons Learned' from Russo-Ukrainian War: Personal Observations*, (The Potomac Foundation, 8 July 2015).

Another concept which requires clarification because of multiple meanings is that of *doctrine*. Originating in theology, doctrine (literally from Latin, a teaching) was an expression of the canonical position of a denomination.⁴⁷ In military affairs, it has existed in some form since the phalanx, though not always in written form. Since the mid-18th c, it has entered progressively wider use, and has come to be appropriated by international relations and strategists to refer to policy. Examples of this latter meaning are the “Monroe Doctrine,” “Weinberger Doctrine,” or “Powell Doctrine.” All three of these are examples of decision making rules, or strategic policies, even if they do not necessarily deal with use of force. But in the military context, doctrine is a systematic recording of institutional culture, and since culture is the driver for behaviour, doctrine is the conscious component of the driver towards group action. For the present purpose, a slightly narrower definition specific to military affairs is used where (Military) *doctrine is the public institutional record about how to train and fight*. This definition is intended to capture the nuanced observation by Isabel Hull that the formal prescription for action may not align with actual behaviour, or may in fact be contrary.⁴⁸ In the discussions which follow, a mention of doctrine will be that of military doctrine, even if the qualifier is omitted. What may also be evident here is that doctrine, as teaching, is one of a number of vectors for cultural transmission, in this case of specifically military culture.

⁴⁷ Harold Hoicback, “What is doctrine?” in Dimitry (Dima) Admasky and Kjell Inge Bjerga eds, *Contemporary Military Innovation: Between Anticipation and Adaptation*, (New York: Routledge, 2012).

⁴⁸ Hull, *Absolute Destruction*, 95. Consider extreme deviations from recorded doctrine, where a sub-culture develops in contradiction to the stated approved behaviour such as the massacre at My Lai (1968) or the Somalia Affair (1993).

There is no satisfactory definition for a *revolution*. Most readers intuitively understand it as a fundamental break from the past, or some significant change in the social or political order, but none can define this fundamental nature or assign a threshold value beyond which the term “revolution” is appropriate. In this respect, Lawrence Freedman grapples with the concept, observing that a revolution:

has advantages as a 'marketing device', dramatizing issues by linking them to a sense of profound change, though at the risk of turning the idea of revolution into something hackneyed and without substance. Revolution involves more than change, and certainly more than simply change of an incremental variety. It represents a moment of transformation. Such moments may not be appreciated until later historians study them; occasionally, they may be imagined in advance.⁴⁹

So the rhetorical device of hyperbole should be left for the budgeteers, who would be quite occupied in the 1990's, justifying defence spending while governments sought a peace dividend. Freedman astutely noted the need for “all new developments” of the 1990's to “be rationalized” in terms of the RMA.⁵⁰ All this to say that first, there is no satisfactory definition beyond the intuitive, and second, that especially in the context of the RMA, the term *revolution* must be judiciously applied.

The chapters which follow are organized to present the groundwork and research to date on the topics at hand, including a focused analysis of the US case during the late stages of The Cold War. Chapter two begins with a general overview of the literature and lays the groundwork for the diverse topics incorporated in this study. It covers the Military Revolution debate, the Way of War debate, peripherally, the Revolution in

⁴⁹ Freedman, *Revolution in Strategic Affairs*, 7.

⁵⁰ Freedman, *Revolution in Strategic Affairs*, 6.

Military Affairs, as well as some of the key works on diffusion and innovation. It also includes an overview study of the literature on culture in the sense defined above and builds on the methods of evolutionary biologists. The premise of homogeneity is addressed, as well as the varying dimensions of culture as they are understood now. John Lynn's typology of national, military, and strategic culture is defined and expanded to include sub-cultures. Sources of culture, and vectors of transmission such as doctrine, are addressed and explored, as well as some impacts of culture on military affairs with specific examples will be mentioned. The chapter concludes with a discussion of diffusions and innovations, specifically in military terms, and leads to two major conclusions: first that the states of relative military power are temporary, leading to a punctuated equilibrium between competitors, and second, that innovation and counter-innovation/adaptation, are driven by resource priorities, as well as by established culture.

The third chapter is a case study of the US experience from the 1960s to 1991, with a particular focus on the 1980s and building on the theories laid out in the literature. Here the questions of why particular choices were pursued, while others were not even considered, will be addressed from the perspective of the cultural bias prevalent in the sub-cultures of the US military and strategic decision makers. It also asserts that the transformation of the post-Vietnam US Army was incomplete until a catharsis in the mid-1980s combined with the passing of the torch to Generation X as they come of age.

The conclusion offers a summary of the observations made in this study: that the available options for adaptation and innovation are ultimately rooted in the culture which produces and employs them, particularly in peacetime, but also the inversion that adaptation impacts culture in turn. The specific case of the US Army in the 1980s also

indicates an inadvertent culture change, driven in part by demographic shifts as a new cohort comes of age and into service free of the stigma of Vietnam. The relationships between the national, military, strategic cultures of the US also seem redefined. Finally, some remaining gaps in the literature and ongoing debates are identified for suggested future study.

Chapter 2 – What are the Dominant Sources for the Current Interpretation?

Discontinuity and Interpretations

Though there was never a doubt the coalition would expel Saddam Hussein from Kuwait in 1991, no one expected the fight to be so one-sided. In the aftermath, this discontinuity in warfare may have been as significant as any other event of the past two centuries including the French Revolution, Blitzkrieg or nuclear weapons. In the years following Desert Storm, a number of writers tried to explain this dramatic victory through a number of lenses,⁵¹ the least explored of which is the cultural approach. This is not to be mistaken for the oversimplification that is the postmodernist theory against which John A. Lynn so eloquently rages.⁵² Though the divergence between reality and perception of war is of interest and to be explored later, it is not the root of the debate. If culture is “all that in human society which is socially, rather than biologically transmitted,” then discourse or culture alone cannot account for all human behaviour and perception, and must leave some agency to biological imperatives.⁵³ In other words, until the nature versus nurture debate is resoundingly resolved in favour of nurture, culture alone cannot be considered the driver of history. Even with this caveat in place,

⁵¹ Stephen Biddle. “Victory Misunderstood” in *International Security* 21, no. 2 (1996): 139-179; Tomes, *US Defense Strategy*; Shimko, *The Iraq Wars and America’s Military Revolution*; Mahnken, *Technology and the American Way of War*; Jensen, *Forging the Sword*.

⁵² John A. Lynn. “Reflections on the History of Military Innovation and Diffusion” in *Bridges and Boundaries: Historians, Political Scientists, and the Study of International Relations*. Colin Elman and Miriam Fendius Elman, eds. (Cambridge: The MIT Press, 2001), 361.

⁵³ Hoiback “What is Doctrine?”, 25.

the question of balancing just how much agency should be invested in culture as it pertains to warfare remains problematic. Since historians and political scientists like Samuel Huntington, John Keegan, Victor Davis Hanson, and Martin van Creveld began to advocate that warfare is not only a continuation of politics as Clausewitz would claim, but also a clash of cultures, it may be time for new explanations underpinned by a rigorous theoretical framework.⁵⁴

In the pursuit of an explanation for the specific discontinuity in 1991, historians, academics, military professionals, and analysts have widened the search for answers. They have explored the Revolution in Military Affairs (RMA), combined with a renewed interest in the Military Revolution (MR) debate about the 17th century, sought relationships with military and strategic culture to define the Way of War of nations, and wrestled with the connections between military adaptation, innovation, and transformation. The wide cast of the net offers promising avenues of research, and the inevitable dead-ends. In attempting to compose some more unified theory of warfare, it may be time to revisit the linear Clausewitzian view and to expand the historical discussion of warfare into an interdisciplinary method. This may include: anthropological conceptions of cultural transmission and change; mathematicians' ideas about complexity; philosophers of history's discourse of paradigm shifts; evolutionary biologists' conceptions of evolution, mimetics and punctuated equilibrium; sociologists

⁵⁴ Huntington, *Clash of Civilizations*; John A. Keegan, *A History of Warfare*, (New York: Vintage Books, 1994); Martin van Creveld, *Transformation of War*, (New York: The Free Press, 1991); Victor Davis Hanson, *Carnage and Culture: Landmark Battles in the Rise of Western Power*, (New York: Doubleday, 2001).

ideas about the overlap of group identity and cultural homogeneity; or political scientists and economists theories about conflict and competition.⁵⁵ Exciting questions remain to be answered as the literature is still developing about how culture relates to change, both in warfare and in the relationship between a society and its military. Before exploring these questions, it may be best to follow the reasoning of the intellectuals who have wrestled with these problems over the past fifty years.

Change Over Time

There are at least two general timelines for the changes associated with the RMA. The first was the misattribution of change associated with the period in which it was discovered. Put another way, a moment of realization that something was different was also named the moment that the change occurred – effectively a recency bias – as if the RMA was an event. Strangely, some historians conflate the events which evidence this discontinuity with the moment of discontinuity. This small number seem to think that this Revolution in Military Affairs began in 1991, when historians and strategists began discussing it, rather than having been set in motion sometime prior.⁵⁶

The second, and by far most common, timeline of causality traces the period of change to originate in the early to mid-1970s. This is not entirely erroneous, but seems to ignore the decades before and after. Singular events like the Fall of Saigon (1975) or

⁵⁵ Richerson and Boyd, *Not by Genes Alone*; Thomas S. Kuhn, *The Nature of Scientific Revolutions 4th ed.* (Chicago: University of Chicago Press, 2012); Richard Dawkins, *The Selfish Gene 30th Anniversary Edition*, (Oxford: Oxford University Press, 2006); Rogers "The Military Revolutions of the Hundred Years' War."; Huntington, *Clash of Civilizations*.

⁵⁶ Dima Adamsky, *The Culture of Military Innovation: The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the US, and Israel*, (Stanford: Stanford University Press, 2010), Chapter 3.

the Yom-Kippur War (1973) are perceived as triggers, as if the 1970s stand isolated, without any prologue in the 1960's where many of the technological and conceptual developments originate. The MBT-70 (Main Battle Tank) project was launched in the early 1960s and is the undeniable precursor to the Abrams and Leopard tanks.⁵⁷ In this line of explanation, the 1980s when doctrine was refined, equipment was fielded, or most critically, culture evolved, is left as an epilogue. I contend that this latter period is in fact the most critical to the events of 1991, as it was when ideas and technology finally converged.

In the official history of the Gulf War, General Robert Scales identifies the genesis of Gulf War army with the creation of the US Army Training and Doctrine Command (TRADOC) in the aftermath of both Vietnam and the Yom Kippur Wars.⁵⁸ To say that the standup of TRADOC and their work was crucial to the outcomes of 1991 is absolutely accurate, but to claim that TRADOC was founded as a result of Vietnam is a stretch, since it was part of a periodic review, the most recent before it being Project 80 enacted in 1962.⁵⁹

By the mid 1980's the US Army was a wholly new force, for the first time purpose built to fight in a post-1945 environment instead of using repurposed or modified WWII designs of equipment or ideas. It was newly equipped with the Big Five

⁵⁷ Richard Chait, John Lyons, and Duncan Long, *Critical Technology Events in the Development of the Abrams Tank Project Hindsight Revisited*, (Ft. MacNair: National Defense University, December 2005). MBT 70 was a joint project between the US and Germany to design a second generation Main Battle Tank. It was terminated in 1969, but many technologies developed for this project were repurposed for the Abrams and Leopard 2.

⁵⁸ Scales, *Certain Victory*, 10.

⁵⁹ Moenk, *Project Steadfast*, 1-2.

including the Abrams Main Battle Tank (MBT), and a new IFV – the Bradley, armed with a 25mm chain gun and turret launched anti-tank missiles (ATGMs) of the kind which had wrought such havoc on the Israelis in 1973. These were supported overhead by the new Apache attack helicopters and Blackhawk transport helicopters; and protected from enemy aircraft and missiles by the Patriot air defence system.⁶⁰

Organized into newly grouped heavy divisions, trained as envisioned by TRADOC, the US Army's most important new advantage was the reconceptualised keystone operational doctrine in Field Manual (FM) 100-5 which would for the first time define "Air Land Battle."⁶¹ Significantly, this force was led and manned at the tactical level by a new generation which lived since birth in a nuclear world and had no childhood memories of the Moon landings or of hiding under their school desks during the Cuban Missile Crisis. This was a generation absolved of the strategic failures in Vietnam, staffed with volunteers rather than conscripts, and increasingly comfortable imagining a Jetsons future. Those leaders like Schwarzkopf and Powell who had experienced Vietnam from a tactical vantage point provided the requisite operational and strategic leadership. Even if the US Army retained its old equipment and doctrine, the complete transfusion of new personnel with a distinctly post-1970s culture alone would make this a wholly new force.

⁶⁰ Col David C. Trybula, "Big Five Lessons for Today and Tomorrow", in *Institute for Defence Analyses*, May 2012, 5. www.benning.army.mil/Library/content/NS%20P-4889.pdf

⁶¹ Scales, *Certain Victory*, citing FM 100-5 (1982), 25.; FM100-5(1982).

Unfortunately, few make reference to the Office of Net Assessment (ONA) which was created as an internal Pentagon think tank in October 1973.⁶² It was in fact the ONA which introduced perhaps the most important element of the Army of Excellence: the operational level doctrine required for deep battle. These arose through an adoption of the Soviet concepts of Military Technical Revolution (MTR), which in the US would become the Revolution in Military Affairs and the Reconnaissance-Strike Complex (RUK) which the Americans would call Deep-Battle and eventually Air-Land Battle.⁶³ A fascinating story in its own right, the impact of the ONA is insufficiently explored in the current literature, while the ONA's primary output – the conceptualization of the RMA – has been related to a number of previous discontinuities in military affairs, beginning the Military Revolution (MR) debate.

Desert Storm was an actualization of Soviet ideas about operational offensive and Deep Battle. MacGregor Knox and Williamson Murray convincingly argue in their work on *The Dynamics of Military Revolutions* that Andrew W. Marshall and his experts within the ONA “were the first to register the significance of Soviet writings on the [MTR]” and to introduce the notion of revolutions in military affairs into the American defense community.⁶⁴ Published in 2010, Dima Admasky's ambitious *The Culture of*

⁶² Krepinevich and Watts, *The Last Warrior*, 95.

⁶³ Admasky, *The Culture of Military Innovation*, 33; Stephen Peter Rosen, “The Impact of the Office of Net Assessment on the American military in the matter of the revolution in military affairs,” in *Contemporary Military Innovation: Between anticipation and adaptation*. Dmitry Admasky and Kjell Inje Bjerga eds. (New York: Routledge, 2012).

⁶⁴ Williamson Murray and McGregor Knox eds *The Dynamics of Military Revolution, 1300-2050*. (Cambridge: Cambridge University Press, 2001), 4.

Military Innovation draws on Soviet observations of the Gulf War to support the conclusion:

The US specialists claim, and the Soviets concur, that during Operation Desert Storm the allies successfully executed a perfect version of the Soviet conventional theater offensive, which encapsulated most of the doctrinal principles developed by Soviet military theoreticians in frames of the MTR. In Ogarkov's view, the most impressive allied capability demonstrated during the war was the ability to conduct a tightly synchronized, integrated joint operations assault throughout the depth of the operational theater, striking both the enemy's strategic centers of gravity and its military forces, in order to produce decisive results.⁶⁵

These ideas in turn trace their genesis to the developments of Deep Battle and in the observations of early concepts of Blitzkrieg of the early 1930s.⁶⁶ Adamsky is perhaps the first to directly and coherently investigate Russian, Israeli, and American culture's impact on innovation. In the case of the Americans, however, the timelines he proposes are inconsistent with the US outputs and he trends towards the interpretation which sees the RMA begin in 1991. A much more plausible interpretation is that, in the parlance of the diffusion of innovations, Adamsky identifies the critical mass of early adopters in the late 1970s, but the true innovators predated them by a decade.⁶⁷

Adamsky accurately cites the Air Land Battle doctrine first codified in the 1982 draft of *FM 100-5*, acknowledging the evolution began sometime earlier, and allows for as much as a decade of gestation.⁶⁸ He also points to the dawning understanding of the Soviet concepts of Military Technical Revolution (MTR) and Reconnaissance-Strike

⁶⁵ Adamsky, *The Culture of Military Innovation*, 67. see endnote 61.

⁶⁶ Adamsky, *The Culture of Military Innovation*, 33.

⁶⁷ Everett M. Rogers, *Diffusion of Innovations*, 5th ed, (New York: The Free Press, 2003), 344.

⁶⁸ Adamsky, *The Culture of Military Innovation*, 61.

Complex (RUK) which would become the US RMA and Deep Battle or Follow-on-Force-Attack (FOFA) respectively. In this instance, he places the concepts in the late 1970s, but roots them in a primarily technologically based precondition.⁶⁹ Conceptually however, ideas of ALB and Deep Battle dated back to the interwar period, and were arguably on display as much in Normandy as in The Six Day War of 1967.

Andrew Krepinevich, a former protégé of Andrew Marshall, the original Director of the ONA who held the post for forty years, made different observations. Krepinevich wrote in the introduction of his 1992 assessment of the Soviet MTR that Marshall wanted to know the magnitude of the shift as well as its form. Both Marshall and Krepinevich realized they were living through a moment of discontinuity and were struggling to define MTR/RMA as “a combined- systems revolution [where] while technological advances were necessary, the underpinning was a symbiosis between systems, doctrine, and organizational developments.”⁷⁰ Unfortunately, Krepinevich does not indicate how early the realization occurred, even though he writes in 1992. Krepinevich also authored Marshall’s biography, and unlike Adamsky, placed the impetus for the RMA in a dawning realization based on intelligence estimates of 1977 that the USSR was outspending the USA and had already achieved parity in strategic nuclear launchers as early as 1972.⁷¹ More importantly, however, once the idea to seek

⁶⁹ Adamsky, *The Culture of Military Innovation*, 59.

⁷⁰ Adamsky, *The Culture of Military Innovation*, 75; see note 113.

⁷¹ Krepinevich and Watts, *The last Warrior*, 75; Joshua Rovner, *Fixing the Facts: National Security and the Politics of Intelligence*, (Ithaca: Cornell University Press, 2011), especially chapters 5 and 6; Anne Hessing Cahn and John Prados, “Team B: The Trillion Dollar Experiment” in *Bulletin of Atomic Scientists*

discontinuities emerged, it found a natural fit with the ongoing Military Revolution debate.

A Search for Patterns in Prior Discontinuities

John A. Lynn's chapter on "Military Innovation and Diffusion" in *Bridges and Boundaries* provides a state-of-the-field overview of the RMA and MR discussions.⁷²

Lynn identifies the trends in the MR debate and most importantly identifies historians Michael Roberts and Geoffrey Parker as those who have reinvigorated and sustained the discussion through the 1990s and into the new millennium.⁷³ The other key trend Lynn identifies in his short overview is what might be called extended hindsight to search for patterns and other discontinuities between the MR of the 17th century and the contemporary RMA.⁷⁴ It is by plotting these discontinuities that authors, like Krepinevich and Murray, have individually attempted to formulate deductions about the nature of changes in military affairs. A nuance in Murray's conception in "Thinking About RMAs" calls for a classification of the discontinuities as technological, financial, organizational, tactical, administrative or even cultural. But elsewhere Lynn challenges technological determinism in history and policy, and reduces all RMAs invariably to one

49, no. 3 (1993): 22-31. Estimates on Soviet defense spending comparisons varied widely and were politicized likely because of their implications for spending decisions.

⁷² Lynn, "Military Innovation and Diffusion."

⁷³ Geoffrey Parker, *The Military Revolution: Military Innovation and the Rise of the West, 1500-1800*, 2nd ed. (Cambridge: Cambridge University Press, 1996); Clifford J. Rogers, ed. *The Military Revolution Debate Readings on the Military Transformation of Early Modern Europe*. (Boulder: Westview Press, 1995).

⁷⁴ Andrew Krepinevich, *Cavalry to Computer*; Williamson Murray, "Thinking about Revolutions in Military Affairs" in *JFQ* 16, (1997): 69-76; Murray and Knox, *The Dynamics of Military Revolution*; Williamson Murray and Allan Millet, *Military Innovation in the Interwar Period*, (Cambridge: Cambridge University Press, 1996).

causal factor: culture. Lynn's key idea is that technology, and technological solution (and implicitly organizations or policies) are an expression of the culture which invents and yields them.⁷⁵ It is therefore the culture which is the primary determinant, and the technology is the dependent variable, which begs the question: What else can be said to depend on culture?

Ways of War

Coincidentally, 1973 also marks the beginning of a debate in the American military history community speculating if there was such a thing as an American Way of War,⁷⁶ and if so, what characterizes it. There appears to be an emerging field in military history which relates the movements of post-modernism and a cultural approach to history not only to the trenches but to the military institutions as reflections of their populations' dominant culture. In the early 20th c. British historian and theorist Liddell Hart deserves credit as the first to use the turn of phrase in *The British Way in Warfare* as early as 1932, "based around the use of maritime forces and the avoidance of major military commitments on the continent."⁷⁷ But this line of inquiry was forgotten for almost 70 years until revisited by David French with respect to the British, and only resurfaced in 1973 thanks to the Americans.⁷⁸

⁷⁵ John A. Lynn, *Battle: A History of Combat and Culture*. (Boulder, Colo.: Westview Press, 2003), xvii

⁷⁶ Weigley, *The American Way of War*.

⁷⁷ Ian Speller, "Corbett, Liddell Hart and the 'British Way in Warfare' in the 1960s" in *Defence Studies* 8, no. 2 (2008), 227.

⁷⁸ David French, *The British Way in Warfare, 1688-2000*. (Boston: Unwin Hyman, 1990). xv-xvi.

In the U.S., Russel F. Weigley is credited with starting the discussion with *The American Way of War* (1973), rooted in the US Civil War and over the course of later conflicts, evolving to focus entirely on physical annihilation. Weigley argued that the Civil War saw a transition from a “Napoleonic Strategy” under Lee to a strategy of annihilation under Grant, and especially Sherman. This trend would continue for the Americans as they conquered the west, and then through two world wars. But Weigley concludes on a somber note, conscious of the events of Vietnam and the tension between a war of annihilation, in which the Americans had no peer, and a war of counterinsurgency. Weigley’s closing pages seem particularly prophetic of the modern debates. Weigley muses on the polarities presented by his contemporaries. On the one side is threat of total war and with it coercion in a nuclear age. On the other hand is the seeming end of Clausewitzian warfare in favour of war’s own “momentum,” beyond any strategic restraint.⁷⁹ The former argument is justified in Desert Storm and clearly won, given that the US Army response to the lost counterinsurgency campaign in Vietnam was by retooling for a war of annihilation against the Soviets – an extension of containment through threat of force. The latter argument, which alludes to unrestrained ideology, is resurfacing today through the language of “momentum” as an allusion to Newtonian mechanics, rather than complex emergence as it might be interpreted.⁸⁰

⁷⁹ Weigley, *American Way of War*, 474-476, referring to Thomas C. Schelling’s *Arms and Influence* (1966) and Rear Admiral J.C. Wiley’s *Military Strategy: A General Theory of Power Control* respectively.

⁸⁰ Andrew J. Bousquet, *The Scientific Way of Warfare: Order and Chaos on the Battlefields of Modernity*, (New York: Columbia University Press, 2009), proposes more modern scientific metaphors to describe warfare.

Though there were a number of reviews of Weigley's work, the exploration of ways of war turned towards describing other cultures.

Over the next few decades the Way of War School proliferated quietly. Harriet and William Scott compiled a volume of primary sources on *The Soviet Art of War* (1982),⁸¹ but this was likely rooted in the Cold War and comprises exclusively of translated primary sources in an attempt to understand the potential adversary. The Soviet view through the Cold War was that they were in a class and ideological struggle, as the underdog, and that they must persist, even if outnumbered and technologically overmatched. This is a collectivist approach to struggle. There is a sense of desire to defend territory “assuring the defense and retention of important regions... and, if necessary, also destroying actual enemy strategic groupings.”⁸² A focus on territory is implicitly a link to the population which occupies it and to the resources it provides, but there was no overt discussion of culture as a critical element. New texts describing the recent Russian hybrid war in Eastern Ukraine are beginning to debate these developments and a uniquely Russian approach in what has become known as Hybrid War, or Gray Zone warfare.⁸³ Unfortunately, these are still news rather than history.

Regarding the Far East, Kiernan and Fairbank write in *Chinese Ways in Warfare* (1974) that the Chinese “produced... specific habits of mind and action... [which]

⁸¹ Harriet Fast Scott, and William Fontaine Scott eds., *The Soviet Art of War: Doctrine, Strategy, and Tactics*, (Boulder: Westview Press, 1982).

⁸² Marshal Nikolay V. Ogarkov “Military Strategy” in *The Soviet Art of War: Doctrine, Strategy, and Tactics*. Harriet Fast Scott and William Fontaine Scott eds. (Boulder: Westview Press, 1982), 246-248.

⁸³ See for instance Antulio J. Echevarria II, *Operating in the Gray Zone: An Alternative Paradigm for U.S. Military Strategy*. (Strategic Studies Institute, 2015).

<http://ssi.armywarcollege.edu/pubs/display.cfm?pubID=1318>

disesteem heroism and violence [rather] than glorify it.” Further, they possess “a tradition of land warfare that prefers defence to offense” and a distinction between pacification and extermination with a strong preference for the former. The Chinese also favour linkage “between militarism and bureaucracy, rather than between militarism and commercial expansion.”⁸⁴ As for other non-western powers, Edward Luttwak submits “the eastern, or Byzantine, empire so greatly outlasted its western counterpart because its rulers were able to adapt strategically to diminished circumstances by devising new ways of coping with old and new enemies... the Byzantine Empire relied less on military strength and more on all forms of persuasion.”⁸⁵ Noting the similarities between the Chinese and Byzantines, David A Graff has since written *The Eurasian Way of War* (2016), dealing with the distinctly occidental approach to statecraft in seventh century China and Byzantium. In this occidental vein, and perhaps because it is currently fashionable, Norvell B. De Atkine claims in “Why Arabs Lose Wars” that their hierarchies of power do not allow professionalization of the soldiers.⁸⁶ Adamsky writes that there is an Islamic way of war in “Jihadi Operational Art.”⁸⁷ In short, there is no lack of comparative writing, exploring the relation between national culture and national strategy, but it is difficult to separate the analysis from the stereotypes and inappropriate to separate the field into the West and the rest.

⁸⁴ Frank Kierman, and John King Fairbank eds. *Chinese ways in warfare*. (Cambridge, Mass: Harvard University Press, 1974). 25-26.

⁸⁵ Edward Luttwak. *The Grand Strategy of the Byzantine Empire*, (Cambridge: Harvard University Press, 2009). 5.

⁸⁶ Norvell B. DeAtkine. “Why Arabs Lose Wars” in *Middle East Quarterly*, December 1999.

⁸⁷ Dima Adamsky, “Jihadi Operational Art” in *Studies in Conflict & Terrorism* 33, (2010), 1.

Like Liddell Hart's text, which came to print in the interwar period, Weigley's also found infertile ground despite the emerging New Military History, cultural history, and the post-Vietnam soul searching. It was not until the late 1980's and into the 1990's that a series of responses had expanded the idea to an entirely Western Way of War. The debate had reached such fever pitch by 2007, that Wayne E. Lee published a much needed state-of-the-field survey which attempted to organize the disparate disciplines.⁸⁸ His "Mind and Matter" article echoes the dichotomy of nature and nurture, and of culture and biology, but does so at the deliberate expense of comparative international reflection.⁸⁹ Lee borrows John A. Lynn's conceptions of military, social, and strategic cultures to organize his presentation and highlights a number of western writers who have expanded Weigley's original idea.

As expressions of culture

The Way of War analysis moved away from Weigley's original ideas and became a nexus from which emerged multiple interpretations about the relation of war and culture. At their simplest, the arguments became about a way of battle and normative behaviour. In Lee's analysis, this is the culture and motivation investigation which deals with how soldiers fight.⁹⁰ Victor Davis Hanson was the first to reinvigorate the debate with his *The Western Way of War* (1989) and *Carnage and Culture* (2001), where he suggests that there is a western way of war writ large, rooted in individualism

⁸⁸ Lee, "Mind and Matter."

⁸⁹ Lee, "A Final Word" in *JAH*, 1161; Lee is referring to Lynn's, *Battle*.

⁹⁰ Lee, "Mind and Matter," 1130.

and democratic principles. Speaking of the ten thousand Hoplites in Xenophon's *Anabasis*, Hanson says they were different from their Persian adversaries because of "personal freedom, superior discipline, matchless weapons, egalitarian camaraderie, individual initiative, constant tactical adaptation and flexibility, [and] preference for shock battle."⁹¹ For his argument Hanson vaguely defines the West in contrast from Asia, Africa, and the Americas (presumably before colonization), as spiritual successors of these Greek Hoplites.⁹² Though there is some value in Hanson's proposals, they are inherently too narrow in focus on battle. How a Hoplite fought was a product of not only his training, equipment, organization, and tactics, but his formative years in a milieu which glorifies combat. Because training and equipment were also significant elements of combat power, as those who fought in 1991 would agree, and because these are also a product of their culture, the moment of contact and battle alone were not enough to differentiate a Greek Hoplite from a Persian Immortal. To say that Hanson's star-spangled Western warriors earn victory every time is an untenable argument considering what encounters with Visigoths, Ottomans, Vietnamese and Jihadi might suggest. So perhaps the West's rise is not only about the West, but also about the cultures it opposed.

The suggestion that war is primarily an expression of culture forms the core argument of John Keegan's 1993 book *A History of Warfare*.⁹³ Keegan's argument which aims to dismiss Clausewitz's famous dictum concerning war as an extension of

⁹¹ Hanson, *Carnage and Culture*, 19.

⁹² Hanson, *Carnage and Culture*, 13.

⁹³ Keegan, *A History of Warfare*, 3.

politics, hinged on the astute observation that warfare and conflict predated politics. But what is unclear here may be in how Clausewitz and Keegan each define politics. In Keegan's case, he seems to use the sense of international relations amongst Westphalian states rather than a broader relation between groups. While the former interpretation would strengthen Keegan's position, the core observation regarding the expression of culture remains valid. In fact, there was an approach to consensus in the early 1990s given that Martin van Creveld had made a very similar statement: "[C]ontemporary 'strategic' thought... is rooted in a "Clausewitzian" world-picture that is either obsolete or wrong. We are entering an era, not of peaceful economic competition between trading blocs, but of warfare between ethnic and religious groups."⁹⁴ What Keegan, van Creveld, and Hanson are all struggling to express in light of the balkanization and ethnic conflict of the 1990s is the notion that modern political boundaries are ineffective constructs in controlling organized conflict. Taken to its extreme, these arguments must lead to the realization that cultural identity – inclusive of politics, ethnicity, religion, and language – overlaps poorly with political boundaries, particularly in the post-colonial world.

It is precisely in the treatment of the non-western world where Keegan and Hanson's arguments are most vulnerable. Critics have focused on Keegan's apparent oversimplification in grouping non-western cultures into one Oriental culture.⁹⁵ To this, William H. McNeill takes exception: "Chinese, Indian and Islamic warfare cannot be

⁹⁴ Van Creveld, *Transformation of War*, 9.

⁹⁵ Keegan, *A History of Warfare*, 359.

lumped with steppe warfare into a single, undifferentiated whole.”⁹⁶ Wayne E. Lee dismisses both Keegan and Hanson’s arguments as “reductionist and worrisome,”⁹⁷ though he acknowledges that the relation between culture, be it Western or poorly defined Occidental, and warfare, either within or without the Clausewitzian concepts, deserves far more investigation.

As much in dissatisfaction with Hanson and Keegan as advancing ideas in its own right, John A. Lynn’s *Battle: A History of Combat and Culture* (2003, revised 2008) stands as the most recent and relevant on the Way of War discussions. He expands beyond the purely American or even Western Way of War, refocusing the debate towards the strategic, rather than purely tactical, and wrestling with post-Clausewitzian ideas far better than Keegan or Van Creveld.⁹⁸ Lynn’s work illustrates an alternative model for conceiving society’s relation to culture and warfare as well as a more nuanced approach to non-Western culture.

Lynn’s key ideas concerning models deal in two parts: first offering a useful if partial taxonomy of culture amongst societal, military, and strategic levels⁹⁹ and secondly of discriminating between what he calls the discourse and reality of war.¹⁰⁰ Lynn’s proposed structure forms the beginning of a multi-dimensional cultural taxonomy which defines sub-cultures within a relatively homogenous nation though he

⁹⁶ William H. McNeill, “Military Imbalance,” in *Nature* 365, (1993), 614.

⁹⁷ Lee, “Mind and Matter,” 1117.

⁹⁸ For an excellent summary of Lynn’s *Battle* see Hew Strachan’s review in *The International History Review* 26, No. 2 (2004), 351-353.

⁹⁹ Lynn, *Battle*, xx

¹⁰⁰ Lynn, *Battle*, Annex.

does not satisfactorily prove homogeneity. Unfortunately, to date there is no consolidated and organized discussion of the multitude of macro and micro cultures which clash in armed conflict. The relations between these sub-cultures and some ideas about alternative classifications are better suited for the upcoming discussion on strategic culture and allied disciplines. Lynn's second model – that of discriminating between the discourse and reality of warfare – alludes to the linguistic, but is not nearly so abstract. Moreover, he suggests that “a single society can harbor several discourses on war that vary by class, gender, and profession—the last an important differentiation with the emergence of a professional military.”¹⁰¹ He devotes an annex to this concept which expands the relationship and the possibilities that: either the understanding of warfare by the larger culture practicing it requires adjustment, as in the First World War; or alternatively that the reality of war must conform to the culture's norms so that laws of war are created. The possibility of adjusting warfare to pre-conceived notions of how it should be waged is particularly relevant in light of terrorism, or as Huntington had proposed, in a clash of cultures, where the belligerents' respective discourses on warfare do not align. When there is disagreement between discourse and reality, “at times, a certain kind of violent conflict is or is not accepted as war.”¹⁰² What Lynn lacks here are the subtleties of a spectrum of conflict, which enable discourse to more closely match reality, though this idea represents an incremental approach to a new collaboratively created model.

¹⁰¹ Lynn, *Battle*, xxi.

¹⁰² Lynn, *Battle*, 359.

Where Lynn does demonstrate nuance is in the more subtle discrimination amongst Occidental cultures, evidenced in at least three examples. The first is in a study of ancient Chinese and Indian texts on warfare.¹⁰³ Lynn's aim to "span continents to gain perspective" relative to the Greek Polis allows him to compare two Asian cultures with comparative levels of technology and thus to contrast them not only from their contemporaries in Europe, but also to "undermine any simple concept of an 'Oriental' way of war."¹⁰⁴ Second, Lynn closely examines the Sepoys, or native East Indians in British services, fighting with British tactics and equipment and led by British officers in a British fashion.¹⁰⁵ The third example, which echoes De Atkine's "Why Arabs Lose Wars," discusses the relatively poor military effectiveness of the Egyptian Army in the October War (1973), despite their modern Soviet weapons.¹⁰⁶ An attentive reader must then conclude that technology, organization, and tactics cannot always be transplanted from one culture to another.

If the concept of taxonomy of world cultures sounds familiar, credit is due to Samuel P. Huntington for proposing it in *The Clash of Civilizations and the Remaking of the World Order* (1996). In his typology, there are nine distinct civilizations including Western, Latin American, African, Islamic, Sinic, Hindu, Orthodox, Buddhist, and Japanese.¹⁰⁷ Understandably disagreeable to some readers for its oversimplification,

¹⁰³ Lynn, *Battle*, 29-72.

¹⁰⁴ Lynn, *Battle*, 30-31.

¹⁰⁵ Lynn, *Battle*, 145-178

¹⁰⁶ Lynn credits the work of Kenneth M. Pollack, *Arabs at War: Military Effectiveness, 1948-1991*, (Lincoln: University of Nebraska Press, 2002) in his analysis of Egyptian military effectiveness.

¹⁰⁷ Huntington, *The Clash of Civilizations*, 26-27.

Huntington's taxonomy is nevertheless supported, at least in part, by sociological research. Shalom H. Schwartz offers "A Theory of Cultural Value Orientations: Explications and Applications" where he employs seven dimensions and demonstrates reasonable proximity for national groups within world regions.¹⁰⁸ These tend to overlap geographically, ethnically, linguistically, and religiously – a proximity which is intuitively attributable to capacity for ideas to physically traverse oceans or mountains. The seven dimensions are organized in polar opposition, with intellectual and affective autonomy countered by embeddedness, egalitarianism opposed to hierarchy, and harmony countered by mastery.¹⁰⁹ Huntington and Schwartz are not alone in arguing that classification of cultures is not only possible, but imminently useful.

In *The Culture of Military Innovation*, Dima Adamsky relies on a number of cultural psychologists whose dimensions align with Schwartz' at least in part. By assessing individuals against these dimensions, Adamsky, Huntington and Schwartz can, to a reasonable degree, say that some people are more alike than others and to form a useful model for treating groups of people as relatively homogenous in their behaviour. Both Adamsky and Schwartz' models share individualistic vs collectivistic dimensions: that is of a connection to the group contrasted to idealizing self-reliance. An appropriate metaphor may be of a bee as it is to its hive contrasted against a solitary polar bear to the tundra. But Adamsky relies also on perceptions of context and time, as well as a power distance dimensions. The former refers to cultures which allow for low context in their

¹⁰⁸ Schwartz, "Cultural Value Orientations," 140-2.

¹⁰⁹ Schwartz, "Cultural Value Orientations," 140-141.

discourse by accepting partial information as sufficient in the expression of ideas, while other languages demand, in their grammatical construct, a high fidelity of identity, relation, possession or other details buried in the proper expression. In the case of the latter, Adamsky describes the 'power-distance' as "the extent to which less powerful members expect and accept equal power distribution within a culture,"¹¹⁰ though it seems redundant in light of the individualistic / collectivistic dimension. Finally, Adamsky also considers holistic-dialectical vs logical-analytical cognitive styles as distinguishing amongst his Soviet, American, and Israeli subjects. Holistic-dialectical mode of thought "focuses on and assigns causality to the relationship between a focal object and the field, and explains events on the basis of such a relationship."¹¹¹ Conversely, "analytical though... tends to center attention on the focal object, to detach it from its context, and to assign it to categories."¹¹² Adamsky relies on peer-reviewed social psychology to ultimately note two polarities: high-context, collectivistic societies which tend toward holistic reasoning, contrasted against low context individualistic societies which tend toward analytical reasoning.¹¹³ What is important here is not the particular model for assessing societies, but that a supportable and measurable model could exist at all – one which allows for meaningful comparisons of group behaviour.

That differences in behaviour also exist amongst groups of people based on religious belief is the premise of Popovski, Reichberg, and Turner's edited volume on

¹¹⁰ Adamsky, *The Culture of Military Innovation*, 18.

¹¹¹ Adamsky, *The Culture of Military Innovation*, 18.

¹¹² Adamsky, *The Culture of Military Innovation*, 19.

¹¹³ Adamsky, *The Culture of Military Innovation*, 19, see especially note 10.

World Religions and Norms of War (2009).¹¹⁴ Thematically, this is a link between ideology and pragmatic rationality which also highlights that religion, just like ethnicity or language, does not align with political boundaries. Specifically, the authors comprising of religious scholars and historians address “how the world religious traditions address specifically the issues of justification of war (*jus ad bellum*) and methods of warfare (*jus in belli*).”¹¹⁵ Most importantly, this volume draws attention to the linkage between learned religion (culture) and behaviour in combat.

Acknowledging that the dimensions used by anthropological psychologists, sociologists, religious scholars, and other fields do not necessarily align, what is noteworthy is that *sufficiently measureable differences in culture exist at all*. Put another way, the genetic difference amongst humans may seem significant, until considered relative to any other species on the planet. In effect, there exist anywhere between one culture representing all of humanity, and 7.5 billion (as of time of writing) ‘culture’ representing every individual human being. Neither extreme is particularly useful as a model, so using instead some manageable distinction based on an agreeable level of granularity will allow meaningful analysis.

A number of preliminary and provisional conclusions can be made at this point. First, the Way of War discussion is a euphemism for the influence of cultures on armed conflict and vice-versa. Despite Weigley’s original conclusions, it has become a discussion about the Western Way of Battle and the two should be carefully and

¹¹⁴ Vesselin Popovski, Gregory M. Reichberg, and Nicholas Turner (eds), *World Religions and Norms of War*, (Tokyo: United Nations University Press, 2009).

¹¹⁵ Popovski et al, 2.

deliberately separated. Secondly, a cultural taxonomy is required. Much as Darwin organized species into kingdoms, orders, etc, so too elements of culture need to be organized into Western then French or German or British or American. Only then can cultures be classified, as John Lynn proposes, into societal, military, and strategic. In turn, there are distinctions between services which have barely been explored.¹¹⁶ Since the US Navy may be inclined to solve problems about air warfare in a particular way which is different from Marines or the US Air Force, sub-cultures clearly exist. A corollary about transplanting structures, technologies and policies is also appropriate. The third and final idea is that the exciting changes in military affairs happen between wars, and the ones to watch most closely are the losers of the last conflict. As a result, historians should be far more interested in what happens, as counter IED (Improvised Explosive Device) operators would say, “left of the boom” while battle, as Sun Tzu would say, is only the resolution of events which have begun long before the clash of arms.

Levels of Culture

Having dismissed the most recent ‘way of war’ label as too simplistic, and identified some discontinuities, what remains is to seek a model for structure. Lynn builds on Clausewitz’ trinity and provides the beginnings of such a model, retained by Lee in his state-of-the-field, which reasonably distinguishes between societal, military,

¹¹⁶ Alan Okros, *Leadership in the Canadian Military Context*, (Toronto: Canadian Defence Academy, 2010), 21-31.

and strategic cultures.¹¹⁷ The relation between these, according to Lynn, is that the military culture is drawn from the larger civil society, and is therefore a variation of the national psyche. It in turn interfaces once more at the strategic level with the civilian leadership and forms the civil-military societal relation. Strategic culture then drives statecraft and decisions related to the use of force. The debate is not only about how a nation fights, but also why it chooses to go to war at all, or how it chooses, collectively, to organize, train and equip its military at a presumably great cost. Here, Lynn begins to overlap with fellow historian Isabel V. Hull in understanding that culture shapes choices.

Culture shapes choices by eliminating some, making others more appealing, and some outright invisible. Phrased more accurately, it is assumptions, perceptions, biases, logical fallacies, and individual formative experience which shape choices. These non-biologically transmitted elements are what Isabel Hull identifies as the primary drivers equally for the 2nd Reich's approach to colonialism and the Great War.¹¹⁸ Hull observes that "some alternatives were visible to the participants, while others were rendered invisible by habitual practices, default programs, hidden assumptions and reflected cognitive frames."¹¹⁹ In her definition of culture, she denies that unexamined and unstated motivations simply devolve into a mechanistic "idea template," but equally that not all decisions are fully rational and reasoned.¹²⁰ As a result, culture impacts, and is impacted by, possible solutions at every stage of conflict, as was the case in the 1970s

¹¹⁷ Lynn, *Battle*, xx

¹¹⁸ Hull, *Absolute Destruction*, 93.

¹¹⁹ Hull, *Absolute Destruction*, 94.

¹²⁰ Hull, *Absolute Destruction*, 94.

when “laser guided munitions reduced the importance of fighter pilot skill in the delivery of weapons, and so were a challenge to the importance of an established Air Force social hierarchy based on pilot skill.”¹²¹ Williamson Murray provides another similar, if simplified example of the Israeli inability to assess accurately the Arab strategic threat prior to, and techno-tactical threat during the Yom Kippur War (1973) because they were so conditioned by the unequivocal success of the Six Days War.¹²² So culture is malleable, stratified, and contagious, and it matters because it impacts behaviour before contact with the adversary where the effects can be compounded over time.

What remains is to relate culture to change. Adamsky distinguishes between innovation, anticipation, and adaptation;¹²³ Theo Farrell adds emulation;¹²⁴ and Clifford J. Rogers borrows from evolutionary biology a punctuated equilibrium model for plotting evolutionary change.¹²⁵ Extending the evolutionary metaphor blurs the distinctions imposed by Adamsky since one possibility is to consider military adaptation in response to stimulus. The Prussian General Staff was created in response to the loss at Jena (1806), Blitzkrieg in response to the Great War, and the Army of Excellence in response to the Vietnam and Cold War stimuli. These were not innovations for their own sake, but rather adaptive responses. Murray and Millett’s *Military Innovation in the*

¹²¹ Rosen, “The Impact of the Office of Net Assessment,” 41.

¹²² Williamson Murray, *Military Adaptation in War with Fear of Change*, (Cambridge: Cambridge University Press), 274.

¹²³ Adamsky and Bjerga, Introduction in *Contemporary Military Innovation*, 1.

¹²⁴ Theo Farrell and Terry Terriff, eds. *The Sources of Military Change: Culture, Politics, Technology* (Boulder: Lynne Rienner Publishers, 2002), 6 and 9.

¹²⁵ Rogers, “Military Revolutions of the Hundred Years War,” 275-278.

Interwar Period could be interpreted through this alternative lens of adaptation rather than innovation.¹²⁶ Finally, the language of choice by modern armies is that of ‘agility and flexibility’ which really mean rapid recovery from surprise, and shift the responsibility for adaptation to the military rather than strategic leadership. A series of case studies and models appear in Meir Finkel’s *On Flexibility: Recovery from Technological and Doctrinal Surprise on the Battlefield*.¹²⁷ He argues that:

Flexibility combines doctrinal, cognitive, command, organizational, and technological elements that, if properly applied, can eliminate most obstacles in the current paradigm that stem from biases caused by: overdependence on a specific concept, group-think, problems inherent in large organizations, relations between intelligence agencies and decision makers, failure to learn from mistakes, and so forth.¹²⁸

What Finkel is actually proposing is to minimize the time between stimulus and adaptation. His work is generally absent from the ongoing debates on way of war, culture and adaptations, but offers theoretical models and a number of case studies which may help reshape the cognitive frame of the historians dealing with the subject since the same principles apply after the shooting stops.

The Allied Disciplines

Interdisciplinary approaches have also wrestled with these complex issues. Richerson and Boyd, two of a small number of scientists who have ventured into interdisciplinary work in the humanities, observe that “when we first began exploring

¹²⁶ Murray and Millett, *Military Innovation in the Interwar Period*.

¹²⁷ Meir Finkel, *On Flexibility: Recovery from Technological and Doctrinal Surprise on the Battlefield*, Moshe Tlamim trans. (Stanford: Stanford University Press, 2011).

¹²⁸ Finkel, *On Flexibility*, 2.

the social sciences, we were struck by how isolated they are from one another, as well as from the natural sciences.”¹²⁹ It is a fair observation that the same military historians who write the passages above are trapped in their own cognitive frames, they are limited by their own academic biases. Ironically, academic disciplines are in themselves socially transmitted cultural constructs which bound the possible discussion and require an interdisciplinary approach. This section examines three such branches, with minor overlaps. These are Complex Adaptive Systems (CAS) with elusive definitions, inaccessibility to those lacking mathematical preparation and counter-intuitive characteristics; evolutionary biology in extending an already identified metaphor; and organizational studies borrowing from Thomas Kuhn and Everett J. Rogers some concepts about diffusion while also examining that ubiquitous term: revolutions. There are some examples from the New Military historians which have begun to explore these relations.

Complex Adaptive Systems (CAS), used primarily in computer science as well as to describe physical phenomena, offer not only a promising reconceptualization of some of Clausewitz’ ideas, but also of historical method all together. A number of modern observers take issue with the perception that warfare is an extension of politics, and propose instead that it is a clash of cultures. But even this concept is too narrow. In reference to the lists of ‘principles of war’ most nations maintain, Williamson Murray rightly argues that, “neither the old, nor a new set of principles of war can offer the

¹²⁹ Richerson and Boyd, *Not by Genes Alone*, 245.

student of war much because they reflect a linear approach to war that stands in direct contradistinction to the reality of war. War is inevitably a non-linear phenomenon. In effect, the principles of war attempt to reduce human conflict to simple aphorisms, while eliminating its inherent, chaotic nature.”¹³⁰ LTC Grant M. Martin’s 2012 article in the *Small Wars Journal* titled “Carl von Clausewitz, Meet Albert Einstein and Max Planck”¹³¹ questions the primarily linear paradigms embraced by Clausewitz’ conception of “Centre of Gravity.” In other words, that every effect has traceable and direct causes. These are 19th century concepts from Newtonian physics which were borrowed to describe military affairs and may even have been true at the time.¹³² What LTC Martin argues for instead is the adoption of modern concepts of quantum mechanics with non-linear causality, and principles of “emergence” – two properties of CAS along with “feedback loops” and “irreducible complexity” from many constituent parts. CAS has been used to model the behaviour of large flocks of birds, which act unlike a single bird (emergence, irreducible complexity), but are bound by a set of simple rules, where the birds respond not only to their proximity to other peers, but to the collective behaviour of the whole flock (feedback loops). Unfortunately, there are very few texts which even relate the concepts of CAS to the humanities, and worse still, there is no accepted definition but only inconsistent characterizations. Paul Cilliers, for

¹³⁰ Williamson Murray, *War, Strategy and Military Effectiveness*, (Cambridge: Cambridge University Press, 2011), 8.

¹³¹ LTC Grant M. Martin. “Carl von Clausewitz, Meet Albert Einstein and Max Planck”, in *Small Wars Journal*. Online: <http://smallwarsjournal.com/jrnl/art/carl-von-clausewitz-meet-albert-einstein-and-max-planck> retrieved 28 Apr, 2016.

¹³² Azar Gat, *A History of Military Thought*, (Oxford: Oxford University Press, 2001), 824-828.

example, offers a reasonably accessible text with *Complexity and Postmodernism: Understanding Complex Systems*¹³³ though a much more entertaining and potentially applicable presentation is Sean Gourley's TED talk from 2009 on *The Mathematics of War*.¹³⁴ There is much work left to be done here.

Other sciences such as evolutionary biology are far more developed and clearly related to the study of culture and conflict partly because they intersect with anthropology. In his argument to extend the Military Revolution debate to include the Hundred Years War and specifically the infantry and artillery revolutions, Clifford J. Rogers almost tangentially proposes a metaphor borrowed from evolutionary biology for describing changes in military affairs as a "punctuated equilibrium."¹³⁵ Characterized by periods of rapid change, followed by relative stability, this is an intuitively agreeable description of New History with its discontinuities. While Rogers only offers the notion as a Parthian Shot in the second last paragraph of his paper, seizing on the metaphor and extending it is worthwhile. Borrowing the definition of 'adaptation' from biology is also immediately applicable when related to the ongoing studies of military effectiveness. The definition of adaptation offered in the preceding chapter – that which makes an organism better suited to its environment – is unapologetically borrowed from this field.

¹³³ Paul Cilliers, *Complexity and Postmodernism: Understanding Complex Systems*, (London: Routledge, 1998).

¹³⁴ Juan Camilio Bohorquez et al , "Common Ecology Quantifies Human Insurgency" in *Nature* 462 (2009), 911-914; Sean Gourley, *The Mathematics of War*, (2009). Online: http://www.ted.com/talks/sean_gourley_on_the_mathematics_of_war, Retrieved 29 May 2016;

¹³⁵ Rogers, "The Hundred Years War", 277.

Conceiving a military organization as ‘an organism or species’ is strangely agreeable and begins to incorporate some concepts from CAS.

Anthropology is one of history’s closest allies and offers and offers excellent conceptual frameworks relating to group behaviours. One particularly useful adaptation of the principles of anthropology and evolutionary biology to the cultural paradigm is Peter J. Richerson and Robert Boyd’s *Not by Genes Alone: How Culture Transformed Human Evolution* (2006).¹³⁶ Richerson, an environmental scientist, and Boyd, an anthropologist, address culture in part as an adaptation, but also provide examples of diffusion and accidental discovery.¹³⁷ These concepts may help in defining adaptation as response to stimulus, instead of accidental innovation from entropy or as creativity. Furthermore, *Not by Genes Alone* not only supports Lynn’s argument against technological determinism, it even goes as far as to contend against environmental determinism because “culturally transmitted knowledge produces technological differences in the same environment.”¹³⁸ In one final point of interest, Richerson and Boyd also highlight maladaptive tendencies – those vestigial behaviours which are surviving adaptations no longer applicable because “the environments in which modern humans live are radically different from those in which humans evolved.”¹³⁹ How immediately and intuitively applicable is this notion to the turgid and unwieldy military

¹³⁶ Richerson and Boyd, *Not by Genes Alone*; for a more scientific treatment of the topic including an edited volume of peer reviewed articles, see Robert Boyd and Peter J. Richerson eds, *The Origin and Evolution of Cultures*, (Oxford: Oxford University Press, 2005).

¹³⁷ Richerson and Boyd, *Not by Genes Alone*, 105.

¹³⁸ Richerson and Boyd, *Not by Genes Alone*, 29.

¹³⁹ Richerson and Boyd, *Not by Genes Alone*, 149.

institutions which frequently stand accused of getting ready for the last war? In fact, if there is one text that requires further careful study from within a bibliography which purports to focus on armed conflict, it is Richerson and Boyd's.

But could culture exist without biology? One of the earliest explorations of the relation between culture and biology is Richard Dawkins' *The Selfish Gene* (1976), where he first suggests the concept of memes as units of cultural (idea) transmission.¹⁴⁰ Memes are packaged ideas which capture a concept in few words: like *molon labe*, funny cat videos, or god. Clearly then there is a link to military adaptations where concepts have a name such as 'breech-loading' or 'Air Land Battle.' A critical element then is that the new idea, once named, becomes easily reproducible, and therefore susceptible to mutation or even evolution. When enough such memetic mutations occur, a new species emerges – Blitzkrieg, or Fourth Generation Warfare. Unfortunately, neither Dawkins nor any of his successors have rigorously applied these ideas to military matters. Few have wrestled with defining the thresholds beyond which a change in warfare is so dramatic that a new form becomes equivalent to a new species.

In *Warfighting and Disruptive Technologies* (2004), Terry C. Pierce offers a typology based on two dimensions: components and systems.¹⁴¹ He offers that when both the components *and* the ways in which they interact are altered, then a disruptive or a sustaining architectural change can be said to have occurred.¹⁴² Though this typology

¹⁴⁰ Dawkins, *The Selfish Gene*, Chapter 11.

¹⁴¹ Terry C. Pierce, *Warfighting and Disruptive Technologies: Disguising Innovation*, (New York: Frank Cass, 2004), 14-17.

¹⁴² Pierce, *Warfighting*, 17.

begins to approach objective assessment, it does not entirely capture culture change. Granted, the MR debate has identified a number of discontinuities such as the infantry and artillery revolutions,¹⁴³ and Andrew Krepinevich has accurately noted “what is revolutionary is not the speed with which the change takes place, but rather the magnitude of the change itself.”¹⁴⁴ But aside from identifying these punctuations, there is no satisfactory definition of threshold, and perhaps this is where the metaphor finally begins to fail.

From the business-oriented literature on organizations, communications studies, and the history of science it is also possible to discern some theories about how ideas proliferate across populations. Having defined culture as all things which are not biologically transmitted, the method of transmission, the times involved and the reception of the receiver are all potentially relevant. Two influential works from the 20th century deal with these questions: Thomas Kuhn’s *The Structure of Scientific Revolutions* and Everett M. Rogers’ *Diffusion of Innovations*.¹⁴⁵ The latter has already been applied to a military context, though briefly, and requires additional consideration.

In the ground-breaking *The Structure of Scientific Revolutions* and in the context of scientific discovery, Thomas Kuhn examines not the accepted solutions, but “the historical record of the research activity itself.”¹⁴⁶ His aim is to determine how one

¹⁴³ Krepinevich, “Cavalry to Computer”; Murray, “Thinking About RMAs.”

¹⁴⁴ Andrew Krepinevich, *The Military Technical Revolution: A Preliminary Assessment*, (Washington, DC: Centre for Strategic and Budgetary Assessments, 2002).

¹⁴⁵ Kuhn, *Scientific Revolutions*; Everett M. Rogers. *Diffusion of Innovations*. 3rd ed., (New York: The Free Press, 1983).

¹⁴⁶ Kuhn, *Scientific Revolutions*, 1.

paradigm, a term he introduces, is replaced by another. Though Kuhn's examples are of the nature of the scientific revolutions, and his process describes the scientific method, there is no reason his ideas are not also applicable to the sphere of military history. In another parallel, what Kuhn calls 'crisis,' is the realization that the current paradigm does not address all the observable phenomena. This last phrase can easily be read both in the context of a scientific crisis, such as the failures of the Ptolemaic observations of equinoxes, as it can in the context of the US Army in the period immediately after Vietnam where "failure of existing rules is the prelude to a search for new ones."¹⁴⁷ Finally, in Kuhn's model, competing paradigms aim to replace the existing paradigm in crisis: "though [scientists] may begin to lose faith and then to consider alternatives, they do not renounce the paradigm that has led them into crisis... a scientific theory is declared invalid only if an alternate candidate is available to take its place."¹⁴⁸

By applying Kuhn's ideas, military historians can search for the processes by which new paradigms become dominant in military affairs, particularly given that military institutions are not normally configured for change. One rare instance of this application is in Geoffrey Parker's "The Limits to Revolutions in Military Affairs: Maurice of Nassau, the Battle of Nieuwpoort (1600), and the Legacy."¹⁴⁹ A significant and pleasantly surprising part of his study focuses on the diffusion of drill from the Dutch to the rest of Europe after it was rediscovered by Maurice and his cousin Willem

¹⁴⁷ Kuhn, *Scientific Revolutions*, 66.

¹⁴⁸ Kuhn, *Scientific Revolutions*, 77.

¹⁴⁹ Geoffrey Parker, "The Limits to Revolutions in Military Affairs: Maurice of Nassau, the Battle of Nieuwpoort (1600), and the Legacy" in *The Journal of Military History* 71, No 2 (April 2007), p 331-372.

Lodewijk.¹⁵⁰ Parker's example also highlights the complexity of a paradigm shift in military affairs as he gives examples of the reluctance to press the advantage against the Spanish because of political motivations and personality conflicts. The influence of cultural, economic, political, policy, and institutional demands can have disproportionate effects on what may objectively be a militarily effective new paradigm. A number of such examples can be found in the interwar period when most Western Allies failed to seize on the concepts of mechanized warfare, while the Germans disregarded aircraft carriers.

As an example of how such institutional limitations might be overcome, Everett Rogers' *Diffusion of Innovation*, which builds on Kuhn's work, could be of use.¹⁵¹ By considering the spread of the ideas, perhaps more as an epidemiologist and not unlike Dawkins' suggestions about memes, Rogers describes a process which is applicable to iPhones, weapons, and to doctrine. His approach, based on communication studies, may be useful in understanding how innovations spread within a strategic or military culture. In the sphere of military history and its intersection with diffusion research is Michael C. Horowitz' *The Diffusion of Military Power: Causes and Consequences for International Politics* (2010).¹⁵² He in turn builds on Everett Rogers¹⁵³ and treats the diffusion process as analogous to integration within the military and national strategy:

¹⁵⁰ Parker. "Limits of RMAs", 338.

¹⁵¹ Rogers, *Diffusion of Innovations*, 43.

¹⁵² Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics*, (Princeton: Princeton University Press, 2010); See also Emily O. Goldman and Leslie C. Eliason eds, *The Diffusion of Military Technology and Ideas*, (Stanford: Stanford University Press, 2003).

¹⁵³ Horowitz, *Diffusion of Military Power*, 19.

There is a big difference between the introduction of a technology to the battlefield and the full integration of that technology into national strategy, including warfare and coercive diplomacy. It is the employment of technologies by organizations, rather than the technologies themselves, that most often makes the difference.¹⁵⁴

If Horowitz was thinking of nuclear weapons as an example, his reasoning is sound.

Starting as a crude bomb, used merely for its incredible destructive power, later weaponized into ballistic missiles, nuclear energy was incorporated into propulsion systems as well. Splitting the atom was not a military technology until it became operationalized into the national strategy.

Horowitz also defines a Major Military Innovation (MMI) as “the introduction and spread of a new means of generating military power.”¹⁵⁵ This is an unsatisfactory definition because it is too easy to conceive an example where a replacement technology is in fact militarily inferior, if cheaper to produce, and is therefore not a cornerstone of national strategy and military power. One reviewer reduced Horowitz’ argument to the “two main factors that determine a state’s capacity to upgrade: the ability to afford the improvements and the organizational capital to adopt them.”¹⁵⁶ On the latter point, Horowitz devotes a short section to culture, and suggests two useful avenues to investigate.¹⁵⁷ First, the age of the organization may inhibit its ability to change, though

¹⁵⁴ Horowitz, *Diffusion of Military Power*, 2.

¹⁵⁵ Horowitz, *Diffusion of Military Power*, 2.

¹⁵⁶ Lawrence D. Freedman, review of *Diffusion of Military Power: Causes and Consequences for International Politics*, by Michael Horowitz, in *Foreign Affairs* 90, no 1 (January/February 2011): 177-178.

¹⁵⁷ Horowitz, *Diffusion of Military Power*, 58-60.

the UK Army's recent restructure and force reduction may indicate otherwise.¹⁵⁸

Second and more important, rather than examining how a technology spreads, it may be more informative to determine how a culture changes and then in turn how this culture can adapt another technology or even create its own.

There is evidence that some military institutions are already considering many of these approaches. In his examination of the Israeli RMA, Adamsky focuses specifically on the Operational Theory Research Institute (OTRI), an Israeli ONA-equivalent think tank created in 1994.¹⁵⁹ Adamsky traces OTRI's experimentation with "a mixture of general systems, chaos, and architecture theories, and postmodern approaches from various academic fields."¹⁶⁰ This work has resulted in the pioneering in 2006 of a competing paradigm termed Systemic Operational Design (SOD), as an alternative to the widely used linear planning processes of most western militaries.¹⁶¹ These concepts are quite new and would make for an exciting historical case study once sufficiently removed in time.

A Search for Models

The search for better models of cultural relation to military matters than those proposed by Victor Davis Hanson and John Keegan as well as refining the ideas of John A. Lynn is ongoing. Both lack sophistication though both have the advantage of

¹⁵⁸ See for instance HM Government, *National Security Strategy and Strategic Defence and Security Review 2015*, November 2015, which directs the reduction of forces.

¹⁵⁹ Adamsky, *The Culture of Military Innovation*, 100.

¹⁶⁰ Adamsky, *The Culture of Military Innovation*, 102.

¹⁶¹ Adamsky, *The Culture of Military Innovation*, 105.

critically examining Clausewitzian views. The 2003 invasion of Iraq by the US ostensibly ended when American troops ‘captured’ Baghdad, but the occupation lasted another decade proving that belligerents on both sides were not fighting by the same rules. The strategic miscalculations in Iraq have generated their own volumes, but it suffices here to note that one of the key miscalculations comprised the failure to account for the culture into which the US led coalition entered. In the Cold War, it was the strength of the ONA that it accounted not only for what was rational to the American observers, but also for what was culturally sound for the Soviet actors.¹⁶² Andrew Marshall could control his cognitive perspective, proving that it is possible to alter viewpoints. It remains to be seen if a successful model will predict culture to be malleable for the purpose of the strategic objectives.

An interdisciplinary approach is required from here. Rogers’ proposal to apply a punctuated equilibrium to the Military Revolution provides a possible direction. Thomas Kuhn has ideas to offer, if humanities are able to shift frames like scientists do in response to evidence. Even mimetics – the study of ideas and idea transmission between people – may have something to offer. New fields and sub-fields continue to emerge in related disciplines and offer theoretical models: complexity theory with its emergent properties and non-linear relations offers some truly exciting possibilities. Just as Einstein and Planck superseded Newton, it may be time that Clausewitz’s dictum

¹⁶² Rosen, “The Impact of the Office of Net Assessment,” 39. There is also an emerging concept in economics – that the assumption of rational actors with perfect information is too deeply flawed. Much like ignoring friction in physics, this modelling of the problems is in fact too simplistic.

about extensions of political aims is updated to allow for widespread, decentralized, complex and adaptive, sub-industrial warfare.

Chapter 3 – Emergence of a New Late Cold War US Army Culture?

The Cold War Context – 1970 to 1991

The latter half of the Cold War is a historically fascinating and relevant period in its own right, but also exists in the wider context of world events and the longer periodization of the Cold War as a whole. The ebb and flow of tensions is characterized by three periods of thawing and cooling relations between the two key rival blocs in the twenty years before the collapse of the Soviet Union in 1991. After a relatively cold period in the early 1960s including the Cuban Missile Crisis (1962) and with the US escalating intervention in Vietnam after 1965, the 1970s were a period of reduced tensions, or *détente*. According to historian Simon J. Ball, the reasons for rapprochement were twofold:

The first was the need to find a way of mitigating the global impact of defeat in, and withdrawal from, Vietnam. The second was the emergence of an approximate technical and numerical parity in American and Soviet strategic nuclear forces and, indeed, in military power more generally.¹⁶³

In short, the US was politically and materially unprepared for an escalation of conflict in the period following Vietnam. It was also during the 1970s that the two superpowers negotiated a series of treaties and bilateral reductions and restraints on the development of nuclear weapons and associated threats.¹⁶⁴ Still, it is possible to infer that the US had

¹⁶³ S.J. Ball, *The Cold War: An International History*, (New York: Oxford University Press, 1998), 171.

¹⁶⁴ Nuclear Non-Proliferation Treaty (1970), ABM Treaty (1970), SALT I (1972) and II (1979), and Threshold Test Ban Treaty (1974).

sufficient political capacity to influence the relations and generate an atmosphere of rapprochement, and later of rising tensions, as it suited them during a particular period.

By the end of the 1970s, the factors which attributed to détente from the US perspective were either no longer valid or at least not as powerful. There was enough temporal separation from Vietnam that it was no longer an urgent element of the political calculus, while the US Armed Forces were rapidly trending towards technological superiority which would become a qualitative offset for the Soviet quantitative advantage.¹⁶⁵ Relations again began to cool after the Soviet invasion of Afghanistan in 1979 when President Jimmy Carter began to move away from détente.¹⁶⁶ Shortly after taking office in 1981, President Ronald Reagan reinforced the new course for the relationship between the two rivals, most prominently by increasing defense spending by 30% between 1981 and 1986.¹⁶⁷ In the same period, Reagan who was a staunch anti-communist, found ideological allies amongst other western conservative leaders such as Britain's Margaret Thatcher, West German Chancellor Helmut Kohl, and French President Francois Mitterrand.¹⁶⁸ But Reagan also believed "that any nuclear war between the United States and Soviet Union would have unacceptable, devastating

¹⁶⁵ Mahanken, *Technology and the American Way of War*, 123.

¹⁶⁶ Raymond L. Garthoff, "The US Role in Winding Down the Cold War, 1980-90," in *The Last Decade of the Cold War: From Conflict Escalation to Conflict Transformation*, Olav Njolstad ed., (London: Frank Cass, 2004), 149.

¹⁶⁷ Office of the Under Secretary of Defense, *National Defense Budget Estimates for FY 2016*, (Department of Defense, 2016), hereafter *Green Book 2016*.

¹⁶⁸ Tomes, *US Defense Strategy*, 99. There are countless potentially relevant details which are intentionally omitted in this very brief overview. Tomes offers a much more detailed overview on the technological changes of the period, many of which do not impact the US Army, while Krepinevich and Watts provide a much needed view into the ways ONA shaped SecDef's understanding of the military strategic balance during the 1980s.

consequences.”¹⁶⁹ This is why in March 1983, he delivered his Star Wars Speech, announcing the beginning of the Strategic Defense Initiative (SDI) with a goal of developing a space based missile defence system capable of defending the United States from ICBMs.¹⁷⁰ Despite their intense disagreements over SDI, by 1986 Reagan found an ideological ally in Mikhail Gorbachev in their shared belief that there was no way for anyone to “win” a nuclear exchange.¹⁷¹

The final thawing before the end of the Cold War began in the mid-1980s with First Secretary Gorbachev’s mandate for economic restructuring and the policies of *Glasnost* (openness) and *Perestroika* (restructuring).¹⁷² To achieve these aims, the Soviet Union required stable international relations and initiated a foreign policy of “civilized dialogue.”¹⁷³ To normalize relations with other nations, and for internal reasons, the Soviets withdrew their troops and advisors from Afghanistan, Cuba, and Central America.¹⁷⁴ Simultaneously, Gorbachev moved to de-escalate the tensions related to nuclear Armageddon with a unilateral test moratorium and an invitation in

¹⁶⁹ Tomes, *US Defense Strategy*, 98. Reagan’s beliefs are likely to have been reinforced by wargames such as PROUD PROPHET 83 which demonstrated that limited exchange would inevitably escalate (Krepinevich, *The Last Warrior*, 164-65); the ABLE ARCHER 83 exercise which demonstrated the level of Soviet sensitivity to provocation; and the television documentary *The Day After* which chronicled the immediate effects of nuclear war, (Reagan, *An American Life*, 585).

¹⁷⁰ Ronald Reagan, Address to the Nation, 2 March 1983.

<https://www.youtube.com/watch?v=ApTnYwh5KvE>

¹⁷¹ January Proposal and the road to Reykjavík, <http://nsarchive.gwu.edu/briefing-book/nuclear-vault-russia-programs/2016-10-12/gorbachevs-nuclear-initiative-january-1986>

¹⁷² Ball, *The Cold War*, 221-240.

¹⁷³ Ball, *The Cold War*, 221.

¹⁷⁴ Ball, *The Cold War*, 221.

January 1986 for Reagan and the United States to do the same.¹⁷⁵ Reagan and Gorbachev signed the Intermediate Range Nuclear Forces Treaty (INF Treaty) which would lead to the banning of launchers of short (500km) to medium range (up to 5500km) missiles.¹⁷⁶ Meanwhile in the United States, analysts assessing the balance of forces using multiple methods reached converging conclusions that by 1988 the balance of conventional forces was undoubtedly sufficient for the US to successfully halt any conventional attack into central Europe.¹⁷⁷ In December 1988, Gorbachev announced in a speech to the United Nations a unilateral reduction of conventional forces, which only further shifted the balance in the US favour.¹⁷⁸ The end of the Soviet Union came unexpectedly for nearly all observers with the sudden and unconditional opening of the Berlin Wall in November 1989 which would become a symbol for the beginning of the end of the Cold War. With the collapse of the Soviet Union in 1991, the United States was left with a powerful conventional force as deterrent, but no one left to deter.

The discussion here is not primarily about the late Cold War, but the US Army which existed and operated within this backdrop, so the topics are unavoidably intertwined. It is also not specifically about the discourse on Vietnam, though these

¹⁷⁵ See for instance The January Proposal; Unilateral Test Moratorium described by Matthew Evangelista, "Explaining the End of the Cold War: Turning Points in Soviet Security Policy" in *The Last Decade of the Cold War*, Olav Njolstad ed, London: Frank Cass, 2004. 100.

¹⁷⁶ INF Treaty, <http://www.nti.org/learn/treaties-and-regimes/treaty-between-the-united-states-of-america-and-the-union-of-soviet-socialist-republics-on-the-elimination-of-their-intermediate-range-and-shorter-range-missiles/>; The Bulletin of Atomic Scientists estimates that the Soviets begin reducing their total number of warheads as early as 1987, almost a year before the INF Treaty was signed and nearly two years before it took effect. There is no satisfactory explanation for this change. <http://thebulletin.org/nuclear-notebook-multimedia>

¹⁷⁷ Krepinevich and Watts, *The Last Warrior*, 163

¹⁷⁸ Evangelista "Explaining the End of the Cold War," 105.

discussions also figure centrally in the US Army's cultural re-emergence during the twenty years following Vietnam. The Cold War and Vietnam comprise elements of larger context which informs the understanding of the sea-change in US Army, parallel to the ebbs and flows of the Cold War. After a decade of neglect, followed by a decade of deliberate investment, the US found itself at the sudden end of the Cold War in possession of what was arguably the most powerful Army the world had ever seen. In November 1989, the US Army was the finest hammer ever made, with not a nail in sight, making Saddam's invasion of Kuwait in 1990 a most unfortunately timed act of aggression.

The US Army in the early 1970s

For an overview of the change in the US Army, it is simplest to begin with the material and measurable, though a more detailed examination of all factors follows in due course. The US Army left Vietnam organized in 13 divisions of regulars with a total of 782 000 soldiers, only about half of the peak strength of 1.5 Million in 1968.¹⁷⁹ The US divisions were also relatively small at only about 13 000 soldiers each, with few integral enablers like meaningful anti-armour units, chemical warfare companies or any significant electronic warfare capabilities.¹⁸⁰ Furthermore, they were equipped with relatively old equipment. The two workhorse vehicles of the US Army which saw

¹⁷⁹ David Coleman, *U.S. Military Personnel 1954-2014*, online: <http://historyinpieces.com/research/us-military-personnel-1954-2014>; John B. Wilson, *Maneuver and Firepower: The Evolution of Divisions and Separate Brigades*, (Washington, D.C.: Centre of Military History, 1998), 357. Reserve and ARNG Divisions are excluded from the numbers here because they are not as clearly documented. The Army Regular divisions and strengths are used as indicative of the overall service strength.

¹⁸⁰ Wilson, *Maneuver and Firepower*, 358, especially the comments on TRICAP divisions.

significant service in Vietnam were the M48 Patton MBT and the relatively lightly armoured M113 APC. The Army had improved the M48 Patton with a new 105mm gun capable of defeating Soviet T54/55s and called it the M60, but ultimately intended this new tank to be an interim solution until a replacement could be developed.¹⁸¹ But the replacement program for the Pattons, the joint US/West German development of the MBT-70, had recently been cancelled.¹⁸² The US post WWII vehicle designs were no match in terms of firepower or armour to the newly fielded T-72 Soviet tanks, or the Soviet infantry carriers: the BMP 2 and the BTR-70.¹⁸³ By the mid-1970s, capstone tactical doctrine had hardly been reviewed since 1962, with only a small update in 1968 to incorporate lessons from Vietnam and air-mobility concepts. It was still conceptually rooted in WWII and the Korean War experiences, with the addition of operations in a nuclear environment.¹⁸⁴

Structures

The Department of the Army was also inappropriately structured with a vestigial post-WWII organization centered on the Continental Army Command (CONARC). It had responsibility for six regional Army Headquarters, as well as the Army Materiel Command (AMC) and Combat Developments Command (CDC), which were

¹⁸¹ R. P. Hunnicutt, *Patton: A History of the American Main Battle Tank*, (New York: Presidio, 1984), 408.

¹⁸² Col David C. Trybula, *Big Five Lessons for Today and Tomorrow*, (Alexandria: Institute for Defense Analyses, 2012); MBT 70 was cancelled in 1970.

¹⁸³ Christopher F. Foss, ed, *Jane's Tanks and Combat Vehicles Recognition Guide*, 2nd edition, (New York: Harper Collins, 2000).

¹⁸⁴ Jensen, *Forging the Sword*, 7; Doughty, *The Evolution of the US Army Tactical Doctrine*, 21.

responsible for operational forces, material acquisitions, and doctrine development and training respectively. But from 1962 onwards,

CONARC's control expanded to most Army schools and the various branch boards involved with Army combat developments, the Reserve Officers Training Corps (ROTC), the U.S. Army Reserve, and support for the Army National Guard,... active and reserve component force readiness, collective training, individual training, recruiting, and officer procurement.¹⁸⁵

This span of control was a known concern, and by 1970 the internal organization of the Department of the Army was due for review.¹⁸⁶

Impact of the 1973 Arab-Israeli War

On 6 October 1973, during the Jewish holiday of Yom Kippur, a coalition of Arab states initiated a surprise attack against Israel. Known as the 1973 Arab-Israeli War or the more colloquial October War or Yom-Kippur War, it exerted a deep and extensive influence on US observers, most notably because of the prodigious losses of tanks. The conflict demonstrated the use of modern Soviet Anti-Tank Guided Missiles (ATGMs) by armies trained and equipped as Soviet client states against the primarily western equipment of Israel.¹⁸⁷ The ATGMs were a techno-tactical surprise because *no-one* had *ever* fought against such weapons, and Israeli tank crews quickly learned to prioritize them as targets, and relearned to advance with infantry support.

¹⁸⁵ Richard W. Stewart, ed, *American Military History Volume II: The United States Army in a Global Era, 1917-2008*, 2nd edition, (Washington: Center of Military History, 2010), 385, hereafter *AMH*; Project 80, initiated in 1962, was an early attempt to remedy these problems, but fell short.

¹⁸⁶ Moenk, *Operation STEADFAST*, 1-2.

¹⁸⁷ Saul Bronfeld, "Fighting Outnumbered: Impact of the Yom Kippur War on the U.S. Army," *Journal of military History* 71, no. 2 (April 2007): 465-498.

The effects struck at the core of the US Army insecurities about a possible surprise attack in Europe and reinforced assumptions about Soviet capabilities. Historian Saul Bronfield notes that: “In the 1970s it was difficult to find literature that dealt with any aspect of U.S. national defense policy in which the lessons of the Yom Kippur War were not cited.”¹⁸⁸ General DePuy, the first commander of TRADOC, wrote in an undated presentation that “if the rate of loss...were extrapolated to the battlefields of Europe... the resulting losses would reach levels for which the United States Army is not prepared in any way.”¹⁸⁹ General DePuy’s final phrase implants itself most powerfully in the mind of a reader or listener: “...the United States Army is not prepared...,” and it is this sentiment which most likely would have echoed through the US Army for many years afterwards. Similarly, Admiral Thomas J. Moorer, Chairman of the Joint Chiefs of Staff (1970-74), wrote in 1977: “The United States is crossing the threshold of the last quarter of the 20th century in a mood of apprehension and confusion.”¹⁹⁰ Moreover, as early as 1970, studies began to identify deeper problems with the professional officer culture “reflecting the worst aspects of the Managerial way of war...rife with careerists,” which needed to change.¹⁹¹ These observations suggest that even with tactical victories, the loss in Vietnam was the

¹⁸⁸ Bronfeld, “Fighting Outnumbered,” 466.

¹⁸⁹ Colonel Richard M. Swain, compiler, Donald L. Gilmore, and Carolyn D. Conway, eds., *Selected Papers of General William E. DePuy, First Commander, U.S. Army Training and Doctrine Command, 1 July 1973*, (Fort Leavenworth, Kansas: Combat Studies Institute, 1994), 77; hereafter *Selected Papers*.

¹⁹⁰ Mahanken, *Technology and the American Way of War*, 123, citing the Chairman of the JCS, Admiral Thomas H. Moorer.

¹⁹¹ Brian McAllister Linn, *The Echo of Battle: The Army’s Way of War*, (Cambridge: Harvard University Press, 2009), 196-197, citing Army War College “Study on Military Professionalism”, 30 June 1970; See Note 10 in Linn, 290.

symptom of a deeper problem with the Army's culture. The mood can best be characterized as a loss of confidence like a football team at half-time needing a pep talk by the coach, following a weak first half against an adversary they should have defeated by 1964.¹⁹² In 1973, the US Army was in reality an ad-hoc modification of the WWII organizations, equipment, and doctrine, partly adapted for a nuclear battlefield. But these were only the internal problems.

Funding

Even if the US armed services' leaders understood how unready they were for the first battle in what seemed like an imminent conventional confrontation in Europe, they were quite powerless to act meaningfully when their funding had trended in the wrong direction for nearly a decade. After steadily decreasing since the Vietnam peak in 1968, the US Army's annual outlays hit rock bottom by 1976 with the lowest spending in 25 years.¹⁹³ Defense spending in the US would remain stagnant until 1979 when President Jimmy Carter saw to the first meaningful increase in reinvestment in the armed services.¹⁹⁴ Defense spending was also impacted by larger economic factors. The great inflation between 1965 and 1982 saw a 206% increase in the cost of consumer goods which meant that even if spending increased in absolute terms, the same dollars bought

¹⁹² Harry G. Summers, *On Strategy: The Vietnam War in Context*, (Carlisle Barracks: SSI, 1982), 11. Summers relates an apocryphal tale that in 1969, when all measurable factors were input into a computer simulation and asked to compute when the US would win in Vietnam, the result was that the US had won in 1964.

¹⁹³ *Green Book 2016*, table 6-13 provides Outlays (spending within the FY) by department. In 1976 US Army Outlays were \$97 633 Million (in constant FY 2016 dollars); the next lowest was in 1950, at \$64 895 Million.

¹⁹⁴ *Green Book 2016*, table 6-13.

less ammunition, fuel, parts, or food for troops.¹⁹⁵ By contrast, the subsequent 17 year period saw a cumulative inflation of only 73%. National economic performance inevitably impacted personal economics and morale across the force. The base pay of private soldiers did nearly double from roughly \$660 per month to \$1200 per month in 1972. This was the single largest pay increase in the 20 year period between 1970 and 1990, with pay actually stagnating through the 1980s as it was overrun by inflation.¹⁹⁶ But Scales notes that other allowance did not advance at the same pace: “moving allowance for a family of four remained at 10 cents per mile – unchanged since the Eisenhower administration [1952-1960].”¹⁹⁷ As a result of cumulative influences, through most of the 1970s, the US Army was dominated by a sense of unpreparedness, apprehension or maybe even dread, like a student about to be called to the front of the class knowing he has not completed his homework and on whose performance the existence of nations and the balanced world order depend.

The All Volunteer Force (AVF)

It was in this somber mood that after several extensions, President Nixon ended the draft “[w]ith the expiration of Selective Service induction authority on June 30,

¹⁹⁵ Federal Reserve History, *The Great Inflation: 1965-1982*, Online: https://www.federalreservehistory.org/essays/great_inflation ; OPEC and Oil shocks in reprisal for support to Israel combined into ‘stagflation.’

¹⁹⁶ Pay rates for an E-2 (trained private) with less than 2 years of service and a quarters allowance with no dependents. Total pay and allowances (in 1990 dollars) was \$667.98 in 1970; \$1202.57 in 1972; \$1150.06 in 1975; \$1059.24 in 1980; \$1022.52 in 1985 and \$987 in 1991; pay charts found at <https://www.federalpay.org/military/history> ; converted to 1990 dollars using online inflation calculator.

¹⁹⁷ Scales, *Certain Victory*, 15.

1973,”¹⁹⁸ and for the first time since 1940, the United States Armed Services relied solely on an all-volunteer force (AVF).¹⁹⁹ A profound shift in the relationship of the state, its people, and armed services, the move to the AVF merits, and has received, its due attention. Questions about quality of troops, economic efficiency, and representation persist over forty years later.²⁰⁰ Arguably the greatest advantage in moving to an AVF was the impact to service length and the intrinsic motivation to serve translating to significantly higher re-enlistment rates. More than that, though it took 10.5 to 14 months to train a soldier, draftees only served two years often leaving less than one year for deployments. Conversely, volunteers served four or more years, depending on trade, essentially, providing up to three deployment equivalent periods for one training cycle.²⁰¹ But the advantages had costs.

In the absence of compulsion to serve, the armed services faced two possibilities through the 1970s: either the volunteers earned wages competitive with comparable civilian employers, in which case less funding was available for operations and training, or they were paid like conscripts, in which case only the least talented members of society would have worse prospects than near poverty while serving in the potentially

¹⁹⁸ Stewart, *AMH*, 371.

¹⁹⁹ Robert K. Griffith, Jr, *The US Army's Transition to the All-Volunteer Force, 1968-1974*, (Washington, D.C.: Centre of Military History, 1997), Chapter 1.

²⁰⁰ Congressional Budget Office, *The All-Volunteer Military: Issues and Performance*, (July 2007), hereafter *2007 CBO Report on AVF*; Karl W. Eikenberry, “Reassessing the All-Volunteer Force” in *The Washington Quarterly* 36, no. 1 (Winter 2013):7-24; Louis G. Yuengert, “Professionalism and the Volunteer Military, America’s All Volunteer Force: A Success?” in *Parameters* 45, no. 4 (Winter 2015-16): 53-64.

²⁰¹ *2007 CBO Report on AVF*, 36.

most hazardous environment imaginable.²⁰² Out of necessity, pay rates were increased, but the contraction in defense spending in the mid-1970s was only exacerbated by the additional cost of paying the AVF, which amounted to an average of 20% more per uniformed member in 1973 than in 1968.²⁰³

Even with increases in pay, the services had trouble attracting what they called high quality candidates. A CBO report from 2007, incorporating data from associated RAND corporation studies, presents a most telling graph representing the ratio of ‘high quality recruits,’ or those recruits without prior service who have a high school diploma and score at least the median score on the Armed Forces Qualification Test.²⁰⁴ The 2007 CBO report indicates that from about 1977 to about 1980 a mere 30% of recruits were considered high quality, suggesting simultaneously that the expected effectiveness of the army in the early 1980s might be reduced, and that the perception of the armed services by the larger society during that period was likely unfavourable. But by the mid 1980’s the ratio of high quality recruits reached parity at 50% and continued to climb, suggesting that the Army performance might be positively correlated and that the perception of the Army was likely on the upswing. At peak through 1992, 73% of all recruits were considered high quality, possibly attributable to both the end of the Cold War and the US Army’s success in the Gulf.²⁰⁵ If it is then reasonable to consider recruit quality as a barometer of wider societal perception of the armed services, then it

²⁰² Stewart, *AMH*, 369-370.

²⁰³ *Green Book 2016*, table 6-12 for outlays by category with a focus on Total Mil Pay.

²⁰⁴ *2007 CBO Report on AVF*, Fig 6, 18.

²⁰⁵ *2007 CBO Report on AVF*. The CBO report notes a general rise in education attainment in the US population, but not if this is accounted for in the data at Fig 6.

follows that the perception of the US Armed services through the late 1970s was abysmal.²⁰⁶ In terms of socioeconomic background, the same 2007 CBO report cites a 1978 Rand study which includes the last two years of conscription, and an older (1989) CBO report, along with its own conclusions, all of which indicate that “youth are represented in the military at all socioeconomic levels” though the bottom 10% and the top 10% of incomes are slightly under represented.²⁰⁷ As a result of these relatively consistent observations covering the 1970s, the 1980s, and the 2000s, it is reasonable to conclude that there appears to be no significant alteration of the socioeconomic composition of the US Army based on the shift to an AVF.

Concurrent with the shift to the AVF, there was however a noticeable drop in discipline which had begun even in the closing years of Vietnam, manifested primarily by racial tension, rising drug use, and insubordination verging on mutiny or outright ‘fraggings.’²⁰⁸ The 2007 CBO report observes a steady increase in enrollment of blacks in the Army from 20% in 1973 to about 33% by 1980.²⁰⁹ Such a shift in racial composition must have had at least some impact on the culture of the Army. On this, General Scales does not shy away from painting a bleak picture of the US Army in the early 1970s:

²⁰⁶ CBO also notes a miscalibration of scores in the period 1977 to 1980, when applicants received higher scores than they should have, an omission retroactively corrected in 1980 and which drove down the overall scores. Even without the error, a line of best fit along the graph between 1976 and 1981 suggest that only about 40% of volunteers would be considered high quality, still an all-time low ratio.

²⁰⁷ *2007 CBO Report on AVF*, Fig 12, 30.

²⁰⁸ Linn, *The Echo of Battle*, 196;

²⁰⁹ *2007 CBO Report on AVF*, Fig 7, 22.

Forty percent of the Army in Europe confessed to drug use, mostly hashish; a significant minority, 7 percent, was hooked on heroin. Crime and desertion were evident in Germany, with at least 12 percent of soldiers charged with serious offenses. In certain units, conditions neared mutiny as soldier gangs established a new order in the barracks through extortion and brutality. Barracks became battlegrounds between blacks and whites. Racial violence spread into the streets of garrison communities from Fayetteville, North Carolina, to Bamberg, Germany. Soldiers assaulted noncommissioned officers, officers, and their families.²¹⁰

It is exceptionally relevant that General Scales cites no sources for these dramatic claims and gives no exact period, but if these anecdotal observations are even marginally representative of a partial culture within the ranks of the US Army, it is a damning indictment.²¹¹ Moreover, attributing such discipline issues singularly to the racial composition of the Army, the shift to AVF, or the exit from Vietnam are all merely correlations, with no explicit causation.²¹²

In the early 1970s the US Army was in a poor state, and the Generals knew it. Unsuitably structured to manage its continental forces, informed by aging doctrine, beset by drastic force reductions and decreased funding, saddled with low quality and undisciplined volunteers, equipped with Korean War vintage ‘interim’ vehicles and plagued by low morale after a defeat in Vietnam, the US Army was hardly the world class institution which could hope to defend democracy. In all this, the experience in Vietnam was likely not the cause, but a symptom of an underlying malaise at the core of

²¹⁰ Scales, *Certain Victory*, 6.

²¹¹ Stewart, *AMH*, 369, Scales claims are generally supported by *AMH*, though with less detail.

²¹² Stewart, *AMH*, 371-372. For a contrasting example of the struggle to balance discipline and morale or quality of life, see Project Volunteer Army (VOLAR) which ran from 1971 to 1972 at select posts and “experimented with ways to raise morale, increase retention rates, and decrease disciplinary problems (especially absent without leave, or AWOL, rates) to prove that with the right combination of leadership and incentives a volunteer force was possible.”

the US Army culture. And Vietnam apart, there is no clear indication within the official history why the US Army was in such poor shape. So how did this army pull itself up by the bootstraps over the next 20 years and perform so convincingly in Desert Storm?

The Official Histories – Causes and Symptoms

If the cultural changes in the US Army are to be conceived of as a response to stimulus, this trigger must be identified as the conventional superiority and nuclear parity achieved by the Soviet Union in the 1970s and demonstrated to frightening effect in the 1973 Arab-Israeli War, but the official history of the US Army betrays a mental frame of implicit causation in naming the period of 1973 to 1991 as “Rebuilding the Army: Vietnam to Desert Storm.”²¹³ *American Military History* (AMH) lists a series of activities, all situated between 1973 and 1991, which contributed to correcting the state of the US Army. These include not only revised doctrine, equipment, organization, and training, but also relevant legislation and policy.

The Big Five

To demonstrate the flawed suggestion of Vietnam as a cause, it is simplest to begin with “the ‘big five’ equipment systems: a tank, an infantry combat vehicle, an attack helicopter, a transport helicopter, and an antiaircraft missile” which are traced to “the early 1970s.”²¹⁴ But any implication of Vietnam as a cause is patently inaccurate

²¹³ Stewart, *AMH*, Ch 12.

²¹⁴ Stewart, *AMH*, 369. There are multiple reasons for the long fielding times, not least because the US chose the most complex technological solutions, but also because funding for the programs was inconsistent when development costs increased, resulting in multiple restarts.

because most of the systems were already in development as early as the 1960s. The tank which became the M1 Abrams can trace its development through the XM-1 program (1973-1980) to the XM803 program which was in turn a breakup of the MBT-70 (1963-1969), jointly developed with West Germany, and which drew on technology demonstrators and experiments of the T95 medium tank program (1955-1959).²¹⁵ Similarly, the Apache Attack Helicopter began as the Cheyenne Program in 1962 which branched off to become the Cobra and later the AH-1 Apache; the M2/M3 Bradley IFV began as the XM-703 (MICV-65) in 1963; and the antiaircraft missile which became the Patriot originates with the SAM-D program in 1964.²¹⁶ Clearly, these programs could not have been motivated by Vietnam if their initiation predates the conflict. But they were certainly expressions of the US culture of technologically sophisticated weapons, with the M-1 for instance, employing a gas turbine engine more suited to an aircraft than to a tank, and the first in a ground vehicle design.²¹⁷ These five vehicles were intended to work together synergistically, with the speeds and mobility of the Bradley and Abrams closely synchronized for instance. There was also a layer of additional, incremental, modular upgrades, like the addition of reliable communications and satellite assisted navigation.²¹⁸ It is even reasonable to hypothesize that the introduction

²¹⁵ Richard P. Hunnicutt, *Abrams: A History of the American Main Battle Tank*. (Novato: Presidio Press, 1990), 44; also Glen W. Williams, *An Examination of the XM-1 Tank System Acquisition Program in a Peacetime Environment*, (Ft Belvoir: Defense Systems Management College, 1976).

²¹⁶ Trybula, *'Big Five' Lessons*, 58.

²¹⁷ Chait, *CTE in the Development of the Abrams Tank*, 29-31.

²¹⁸ *Final Report to Congress: Conduct of the Persian Gulf War*, (April 1992), 105-106; Matthew E. Skeen, "The Global Positioning System A Case Study in the Challenges of Transformation" in *JFQ* 51, no 4, (2008): 88-93; Rick W. Sturdevant, "NAVSTAR, The Global Positioning System: A Sampling of Its

of The Big Five also had a positive correlation, if not a direct impact, on the dominant culture of defeatism, since equipping the Army with modern vehicles in the early 1980s would not only equalize the qualitative imbalance with the Soviets, but would also serve to draw in new volunteers.

Doctrine

Regarding doctrine, subsequent historical analyses align quite closely with the official history. These generally support the conclusions that the doctrinal reinvigoration, with the renewed focus on the operational level of war, was a significant factor in the Army's reset. The evolutions of the army's capstone doctrine manual *FM 100-5 Operations* under General DePuy from Active Defense (1976)²¹⁹ through the two iterations of Air Land Battle (ALB) and deep attack (1982 and 1986), are nearly unanimously touted as significant conceptual leaps and undeniably critical to the outcomes of the Gulf War in 1991.²²⁰ That said, the genesis of Active Defense and later ALB was quite certainly *not* Vietnam because the documents focus exclusively on conventional operations against peer enemies.

Counter-insurgency was not a consideration for General DePuy, and in fact the word *insurgency* does not appear at all until 1986 in a small section within the context of

Military, Civil, and Commercial Impacts” in *Societal Impact of Spaceflight*, Steven J. Dick, Roger D. Launius eds, (NASA History Division, 2007), 334-338.

²¹⁹ Note however that the term Air Land Battle appears as early as the 1976 version as the title of chapter 8.

²²⁰ Jensen, *Forging the Sword*; Brownlee and Mullen, *Changing and Army*; Scales, *Certain Victory*; AMH, 375-379; John L. Romjue, *From Active Defense to AirLand Battle: The Development of Army Doctrine, 1973-1982*, (Ft Monroe: TRADOC Historical Office, 1984); Gole, *Preparing the Army for Modern War*; Herbert, *Deciding What Has to Be Done*; Doughty, *The Evolution of US Army Tactical Doctrine, 1946-76*; and others.

low intensity conflict.²²¹ Clearly then, if Vietnam had driven the change in doctrine, the concepts of (counter) insurgency would have featured more prominently in the decade following. Moreover, the dimensions of this doctrine were not spectacularly new. These were evolutions of concepts pre-dating WWII, or as Dima Admasky would argue, drawn from Soviet thinkers.²²² Closely supporting ground forces with aircraft was a tactic for which Stuka dive bombers were purpose built, while attacks in depth were a principle of strategic bombing even before WWII. While ALB was admittedly a refinement of these ideas, the three dimensional volume which encompassed the forward edges of troops in contact, the aircraft above, and the depth echelons of both forces was certainly familiar to those who understood airborne operations for instance, or could conceptualize attack in operational depth. The system which comprised the doctrine, The Big Five, and the high quality recruits was one of feedback. The longer serving, high quality recruits were attracted to the technologically advanced equipment, but the equipment and doctrine in turn required increased qualification/education standards to master.

Reorganization - STEADFAST

The argument for reorganization as a result of the experience in Vietnam is only slightly less circumstantial than the one for equipment. To say that “after Vietnam the

²²¹ *Field Manual 100-5 Operations*, (Washington, DC: Department of the Army, 1986), 4-5; hereafter *FM100-5* (Year of Publication). Arguably, General DePuy reverted to his comfort zone which was mechanized warfare. See conclusions in Chapter 4 below.

²²² Adamsky, *The Culture of Military Innovation*, 34.

Army underwent a number of organizational changes”²²³ is actually a bit of an understatement. There were two levels of reorganization, one at the level of the Department of the Army and another specific to the structure of the fighting divisions. But each required multiple iterations and in some cases re-organizations were clearly motivated by more proximal events like maximum authorized strengths, new equipment and enablers, or world events like the Yom Kippur War (1973), and the invasion of Grenada (1983). As such, they can be said to have been influenced by that which was culturally transmitted, or stimulated, and it is reasonable to propose that organization, just like technology, is also a product of culture.

At the level of the Department of the Army, the first attempt of reorganization in 1962, called Project 80,²²⁴ had only made CONARC more unwieldy.²²⁵ Project 80 was followed by the much more deliberate Operation STEADFAST (1969-1973) which sought to reorganize the cumbersome CONARC into two functional commands: “FORSCOM assumed oversight of all U.S. operational units in CONUS and focused on readiness. TRADOC combined oversight of most Army schools with combat developments functions that the new command inherited from the Army’s Combat Developments Command.”²²⁶ The Operation STEADFAST study initiated in 1969 could very well be a result of the events in Vietnam, but General Westmoreland’s

²²³ Stewart, *AMH*, 383.

²²⁴ James E. Hewes Jr., *From Root to McNamara: Army Organization and Administration, 1900-1963*, (Washington: Center of Military History, 1975), Chapter IX-X. Project 80 was a culmination of periodic reorganizations as well.

²²⁵ Stewart, *AMH*, 385. General Westmoreland ordered a review which became known as the Parker Panel and resulted in over 60 recommendations for change to the Army’s existing major commands.

²²⁶ Stewart, *AMH*, 386.

motivation in ordering the review is unclear and can most likely be attributed to cumbersome command and management structures.²²⁷ STEADFAST and its resulting creation of TRADOC can be traced as the first domino in a series of important evolutions including the work TRADOC would perform to integrate doctrine, equipment, and divisional organizations into a cohesive whole specifically structured to fight Soviet armies in Europe.

Reorganization – Army of Excellence

The second major line of reorganization within the US Army was in how it structured its divisions, though this would require three iterations over 10 years.²²⁸ The first was the Division Restructuring Study (DRS), initiated in 1975 as a response to the Yom-Kippur War.²²⁹ DRS resulted in heavy divisions of 18 000 soldiers with additional enablers like organic air-defense and anti-armour missiles, electronic warfare, and chemical defense companies and battalions.²³⁰ But after a 1977 field study, General Don Starry, who had succeeded General DePuy as commander of TRADOC, found “Divisions overmanned and over equipped in many areas, giving commanders resources to cover every possible deficiency or contingency.”²³¹ More importantly, General Starry felt the study had used incorrect doctrine focused on the active defensive and winning

²²⁷ Moenk, *Operation STEADFAST*, 6; See also Robert T. Davis, *Challenge of Adaptation: The U. S. Army in the Aftermath of Conflict, 1953-2000*, (Ft Leavenworth: Combat Studies Institute, 2008), 50.

²²⁸ John L. Romjue, *A History of Army 86*, (Fort Monroe: TRADOC Historical Office, 1982); John L. Romjue, *The Army of Excellence*; and especially Wilson, *Maneuver and Firepower*, Chapters 13 and 14.

²²⁹ Wilson, *Maneuver and Firepower*, 379.

²³⁰ Wilson, *Maneuver and Firepower*, 382-383.

²³¹ Wilson, *Maneuver and Firepower*, 383.

‘the first battle’ rather than ‘the central battle,’ as well as using incorrect tactics for the enemy, ultimately skewing the results of the study.²³² As a result, he ordered the Division 86 studies (1978-80) which would use a new set of assumptions about rates of fire, opposing force doctrine and equipment, terrain, and rates of advance. This study concluded that heavy divisions should have between 19 000 and 20 500 soldiers each, but this would require Army strength of 836 000, when the army was only authorized to 780 000.²³³ Moreover, new equipment was on the cusp of fielding, with The Big Five entering service in the 1980-1981 period with unfamiliar capabilities. So, implementing the Div 86 heavy divisions was postponed to the mid-1990s.²³⁴

But by 1983, the world situation had changed, with the experiences in Grenada (1983) and the observations of the Falklands War between the United Kingdom and Argentina (1982), TRADOC observed that “credible forces do not have to be heavy forces”²³⁵ Simultaneous initiatives to reduce the tooth-to-tail ratios, that is to have fewer logistic and support trades organic to the divisions; as well as centralizing some enablers at the Corps level allowed for the Army to define 18 divisions in three ‘weights classes.’ The armored and mechanized divisions which General Starry envisioned in the Div 86 study could become a near reality with just under 18 000 soldiers each, while the light, airmobile, and airborne divisions would comprise 10 800 soldiers each.²³⁶

²³² Wilson, *Maneuver and Firepower*, 383.

²³³ Wilson, *Maneuver and Firepower*, 389.

²³⁴ Wilson, *Maneuver and Firepower*, 390.

²³⁵ Wilson, *Maneuver and Firepower*, 391.

²³⁶ Romjue, *The Army of Excellence*, 173 – 175.

Each of these reorganizations targeted various levels of the Department of the Army, spread over more than a decade, so it is unlikely that the impetus for all was rooted in the same common cause. In the introduction to his study of the most recent Army of Excellence structure, John Romjue points to the “buildup of Soviet forces during and following America’s Vietnam diversion” as the antecedents to at least some of these developments.²³⁷ Offsetting the conventional Soviet threat to raise the nuclear threshold, availability of new funding, and fielding new equipment were by far the most likely imperatives for reorganization.

Legislation

The official history accurately notes the influences and causes of a number of legislative efforts through the 1970s and 1980s which would have an impact on the conduct of the First Gulf War. Of these, none is more significant to the culture of the US Army than the elimination of the draft in 1973 already discussed above.²³⁸ A series of other changes can be traced to immediate pre-cursors without risk of falling into a post hoc, ergo propter hoc fallacy. The Defense Officer Personnel Management Act (DOPMA) passed in 1980 established fair and consistent regulations for officer advancement: the commonly known “up or out” model.²³⁹ The Goldwater-Nichols Act (1986) aimed to reorganize the command relationships of the Joint Chiefs of Staff by

²³⁷ Romjue, *The Army of Excellence*, 2.

²³⁸ Stewart, *AMH*, 372.

²³⁹ Bernard Rostker et al, *The Defense Officer Personnel Management Act: A Retrospective Assessment* (Santa Monica: RAND, 1993), v; Public Law 96-513, *Defense Officer Personnel Management Act*, 96th Congress, 12 Dec 1980, online: <http://legislink.org/us/pl-96-513>.

establishing regional command. It was a direct result of the inter-service frictions simmering since Vietnam and brought to light in the failed Iranian hostage rescue attempt in 1980 as well as Operation URGENT FURY in Grenada (1983).²⁴⁰ Other legislation is more circumstantially connected to contemporary events such as the Nunn-McCurdy amendment to the 1982 Defense Authorization Act “to help control the increasing costs of major defense systems”²⁴¹ which gave congress additional spending oversight on procurement programs. It might be an interesting thought experiment to wonder if The Big Five could have been fielded with the Nunn-McCurdy provisions in place.

Internally, led by TRADOC, the Army enacted a number of changes to improve competence, readiness, and overall professionalism. The National Training Centre (NTC), stood up in 1981 modeled on the Airforce Top Gun School, it included a “permanent opposing force, exercise observer/controllers, sophisticated instrumentation, and a live-fire range with a simulated advancing force [and] provided realistic battlefield training and a critical evaluation of unit performance.”²⁴² The introduction of an NCO Academy to professionalize the most senior soldier was matched for officers by the development of the School of Advanced Military Studies (SAMS) in 1983 which aimed to “teach judgement” and which would have direct impacts on US Army performance in

²⁴⁰ Ronald H. Cole “Grenada, Panama, and Haiti: Joint Operational Reform” in *JFQ* 20, (Autumn/Winer 1998/99), 57-64.

²⁴¹ Sam Nunn, *S.Up.Amdt.105 to S.815*, 97th Congress, 1982, online: <https://www.congress.gov/amendment/97th-congress/senate-unprinted-amendment/00105>.

²⁴² Stewart, *AMH*, 391-392

1991.²⁴³ All these events and aims to train soldiers and officers can be held up as correlations with the American culture which expected “the modern infantryman ... to master a wide range of skills and think for himself on an extended battlefield.”²⁴⁴

Offset Strategy

Missing from the official history of the US Army is a sense of how the Army fit with the larger picture which emerged from the intelligence assessments of the CIA, Pentagon, and ONA throughout the 1970s. The impression of the Soviet strength by the US intelligence community in the early 1970s was based on a flawed estimate of the economic burden relative to defense spending in the USSR. Tracing Andrew Marshall’s concerns in the early 1970s, Andrew Krepinevich notes: “The CIA’s consistent tendency to underestimate the magnitude of Soviet defense spending, while overestimating the size of the USSR’s economy relative to US GNP, is an important reason that Marshall, Schlesinger, and many others initially mistakenly judged the Soviets to be more cost-effective.”²⁴⁵ At that moment in 1970, it might have appeared to the US strategic leadership that the military output of the USSR was economically more efficient, and the appearance of trends towards rapidly approaching parity in both conventional and nuclear forces would be a reason to reassess the American’s own posture and spending directions. In fact, despite the drawdown in Vietnam, there was a steady and consistent increase in defense spending starting as early as 1976 – a likely indication of the

²⁴³ Stewart, *AMH*, 389-390; Thomas E. Ricks, *The Generals: American Military Command from World War II to Today*, (New York: Penguin, 2012), Chapter 23.

²⁴⁴ Stewart, *AMH*, 389.

²⁴⁵ Krepinevich, *The Last Warrior*, 84, footnote.

realization that the USSR was converting more of its economy into military power than the US. Moreover, the ONA estimates indicated punctuation in the equilibrium which may have been a powerful driver when the US strategic leadership understood that they were trending towards the wrong side of the punctuation and sought to re-establish the equilibrium. The renewed assessments informed decision making at the strategic level, which in turn may have resulted in the budget spikes of the early 1980s. One thread of evidence is perhaps the report by Senator Nunn of January 1977 to the Senate Armed Services Committee which informs them of the disparity between NATO's "declared strategy [of flexible response and forward defense] and the ability of NATO forces to implement this strategy."²⁴⁶ This at least indicates that US strategic leadership was aware of the need to invest. Such a circumstantial link between disparity, understanding, and effects on defense spending is plausible, but the last assertion remains hypothetical.

What was unique to the ONA was Andrew Marshall's capacity to become a cultural doppelganger. By realizing that the Soviet strategic leadership operated with different baseline assumptions, he understood that rational choice from the perspective of another culture would not align with what the US analysts would consider rational.²⁴⁷ He understood that "If the principal goal of US strategy was to deter Soviet acts of aggression or coercion, it was the Soviet view of the balance that mattered most."²⁴⁸

²⁴⁶ Sam Nunn and Dewey F. Bartlett, *NATO and the New Soviet Threat*, (Washington: U.S. Government Printing Office, 1977), 1-2.

²⁴⁷ Adamsky, *The Culture of Military Innovation*, 71.

²⁴⁸ Krepinevich, *The Last Warrior*, 138.

And in the Soviet terminology and assessment, the ‘Correlation of Forces’ including nuclear, but also conventional and non-military power, was in the mid-1970s swinging distinctly into the Soviet’s favour.²⁴⁹ So even though AMH makes no mention of an offset strategy, ONAs impact could be felt there as well.²⁵⁰ By understanding how the opponent calculates relative strength, Andrew Marshall could advise strategic decision makers on where to invest so as to ‘game’ the adversary’s calculus. If, for instance, the USSR considered its air defence capability a key factor in the leadership’s survival of a first exchange or the early stages of escalation, and from there derived its capacity to retaliate, then any advance by the US which threatened to penetrate the air defense umbrella with impunity, or advances in precision weapons which could strike strategic command centres, would have a cascade effect on the Soviet assessments of nuclear balance. Such weapons were in fact being developed: the F117 Fighter and B-2 bomber, along with ongoing developments in guided munitions.

So in the early 1980s Marshall argued to Secretary of Defence Caspar Weinberger that, “US advantages made the nuclear balance ‘much more favourable’ than the ... assessment indicated.”²⁵¹ These revelations suggest also that if investment in air and naval weapons was specifically oriented towards appearing more powerful vis-à-vis the Soviets, then the ground weapons, such as the M1A1 Abrams would also be

²⁴⁹ Michael J. Deane, *The Soviet Concept of the ‘Correlation of Forces’*, (Arlington: Stanford Research Institute, 1976); Richard E. Pipes, *‘Correlation of Forces’ in the Soviet Usage – Its Meaning and Implications*, (Arlington: Stanford Research Institute, 1978); Julian Lider, “The Correlation of World Forces: the Soviet Concept,” in *Journal of Peace Research* 17, no 2 (1980): 151-171.

²⁵⁰ Krepinevich, *The Last Warrior*, 162.

²⁵¹ Krepinivich, *The Last Warrior*, 162-163, citing interview by Guthe.

built specifically to overmatch Soviet equipment of the kind used by Iraq in 1991. In effect, the US Army transformation in the 1970s and especially in the 1980s was at least partly motivated by what US decisions makers thought the Soviets thought about the Cold War balance of power.

Extending the offset strategy argument, the impacts of the SDI on the strategic and economic balance cannot be understated. In wargames conducted by the newly established Strategic Defense Initiative Office (SDIO) in 1984, players expected they would need “effectiveness levels of 90 percent or better in order to have a significant effect on the US-Soviet nuclear relationship” but through later iterations seeking the effectiveness threshold they “discovered... that the SDI effectiveness level as low as 15 percent – that is, leakage as high as 85 percent – exerted a ‘profound impact’ on the US-Soviet nuclear balance.”²⁵² What is unclear is if President Reagan pursued this strategy of economic attack intentionally, or if his aim was merely to defend the United States. But given that the wargames by the SDIO occurred after the initiative was announced, it is most likely that Reagan’s primary objective was militarily defensive in nature, rather than economically offensive. What is also unclear is if the Soviets had come to the same conclusions and realized that they “had to allocate so many warheads to ensure sufficiently high success rates against the US Minuteman ICBM force that they risked exhausting their own ICBM forces.”²⁵³ The Star Wars initiative was, in the end, an

²⁵² Krepinevich, *The Last Warrior*, 169, citing Charlie Pease and Kleber S. “Skid” Masterson, “The US Soviet Strategic Balance: Supporting Analysis, a Retrospective,” unpublished conference paper, September 30, 2008, 15.

²⁵³ Krepinevich, *The Last Warrior*, 169 citing Pease and Kleber.

economic strategy which, coupled with the 47% increase in defense spending by the Reagan administration between 1979 and 1988,²⁵⁴ could ruin the USSR fiscally.²⁵⁵

Non-Material Factors: Discourse, Popular Culture, Demographics... Catharsis?

Had the same soldiers who left Vietnam in 1973 been immediately reorganized into the Army of Excellence divisions, issued with The Big Five and read the newest *FM 100-5*, would they have performed as well as McMaster's Eagle Troop at 73 Easting if they had had to liberate Israel sometime in early 1974? If the answer is any other than a resounding 'absolutely,' then there are missing factors which must be addressed.

While updated technology, doctrine, and organization undoubtedly contributed to the US Army effectiveness in 1991, there is a need for expanded context and for understanding the collective human and social elements in this period. Few have examined the cultural components of the US Army's transformation – those unique to the milieu of the US Army and how it perceived itself, or how it interfaced with the changing strategic culture through the late Cold War period. There is no lack of literature discussing the Western Way of War and Western military culture in general,²⁵⁶ just as there is literature on strategic culture.²⁵⁷ But for all these, there is far too little written specific to the US Army culture in that period, and no examination of the paradigmatic shift in belief and

²⁵⁴ *Green Book 2016*, Charts in Chapter 6.

²⁵⁵ These observations suggest that the principles of the ABM treaty may have been flawed, or that the US may have had to accede to the ABM Treaty if it was in a relatively weak bargaining position politically, because of Vietnam.

²⁵⁶ Victor Davis Hanson, *The Western Way of War: Infantry Battle in Classical Greece*, 2nd ed (Berkeley: University of California Press, 2009); Hanson, *Carnage and Culture*; Theo Farrell, *The Norms of War*; Veselin Popovski, et al., *World Religions and Norms of War*.

²⁵⁷ Lawrence Sondhaus, *Strategic Culture and Ways of War* (New York: Routledge, 2006); Jeremy Black, *War and the Cultural Turn* (Cambridge: Polity Press, 2012), esp. chap. 5.

behaviour through the 1970s and 1980s.²⁵⁸ Drawing on John Lynn's widely accepted taxonomy of levels of culture, what follows is not only the US military culture as a snapshot in time, but also its changing relationship with the US national strategic culture, as well as the wider societal cultures between 1970 and 1990.²⁵⁹

The US Army as an institution should not be denied its agency, which is why a cultural approach examining the Army's perception of itself through the 1980s is a relevant and necessary line of research. Of the primary documents most useful for this are the published professional journals such as *Military Review* and *Parameters*,²⁶⁰ since they indicate positions and opinions which were publically acceptable: that is, the formal norms of discourse within the Army and the public rather than private positions of the Army's membership.²⁶¹ These can be cross referenced against the events of the day, including funding under the Reagan Administration, world events such as the invasions of Panama and Grenada,²⁶² or the failed hostage rescue attempt in Iran. Additionally, the established factors such as equipment fielding, doctrinal development, and

²⁵⁸ Adamsky, *Culture of Military Innovation*; Benjamin Bulley, *The New American Way of War: Military Culture and the Political Utility of Force*, (New York: Routledge, 2008); Linn, *The Echo of Battle*.

²⁵⁹ Lynn, *Battle*, xx. Lynn's three levels of culture are Societal (National), Military, and Strategic.

²⁶⁰ U.S. Army Command and General Staff College, *Military Review* (Fort Leavenworth, Kansas: Command and General Staff College, 1939); Army War College (U.S.), *Parameters* (Carlisle Barracks, Pennsylvania: 1971). These journals have been published continuously since 1939 and 1971 respectively, with varying frequencies as the editorial staffs rotated duty assignments.

²⁶¹ Hull, *Absolute Destruction*, 95, Hull distinguishes between publically stated beliefs and contradictory behavior. The acceptable deviation from stated belief may also be considered a variable dimension of culture.

²⁶² Ronald H. Cole, *Operation Just Cause: The Planning and Execution of Operations in Panama, February 1988 - January 1990* (Washington: Joint History Office, 1995); Ronald H. Cole, *Operation Urgent Fury: The Planning and Execution of Joint Operations in Grenada, 12 October - 2 November 1983* (Washington: Joint History Office, 1997).

organizational restructure must be considered as contributing to, as well as being shaped by, the changing Army culture.

The Professional Discourse in the Journals

What follows is essentially a cultural analysis of the U.S. Army as assessed by an historian.²⁶³ The specific methodology counts on a combination of qualitative and quantitative sentiment analysis of the historical documents (the journal articles and official histories), seeking positive, negative, or neutral sentiments in reference to past, present, and hoped-for future experiences. Both the intensity and the frequency of sentiments are related to the events of the time of writing and publication, accounting for a short period of process between article drafting, submission, review, editing, and publishing. These sentiments must also be related to the context of the national administration or key figures such as the President, Secretary of Defence, Secretary of the Army, Joint Chiefs or even the house and senate committees on the armed services. The approach aims to illuminate how the US Army perceived itself and its environment, but not necessarily how it was in turn perceived by other actors. The line of investigation is also bounded not only in time to the 1980s, but also by the sources, limited at the outset to two professional journals.

²⁶³ Richerson and Boyd's method limited here with a focus on those artifacts which are transmittable, namely words in journals.

Parameters is the academic periodical of the US War College which trains future General and Flag Officers.²⁶⁴ US Army War College candidates have roughly twenty years of experience in their service and are beginning to think in strategic terms. By 1988 it is rare to see authors who have service in Vietnam. The authors are not only students and graduates of the War College, but significantly many of the instructors as well as academics publish here on germane topics. The subjects and approaches tend to take a longer view, and with the inclusion of professional historians, range quite broadly into history, frequently resulting in comparative studies of modern problems and lessons of history. Williamson Murray, a former instructor at the US Army War College, opened his three-volume study of early 20th century military effectiveness with a quote by General James Mattis, a graduate of the similar National Defense University, which aptly summarizes the purpose of a War College:

Ultimately a real understanding of history means that we face nothing new under the sun... Alexander the Great would not be in the least perplexed by the enemy we face right now in Iraq, and our leaders going into this fight do their troops a disservice by not studying (studying, vice just reading) the men who have gone before us. We have been fighting on this planet for 5,000 years and we should take advantage of their experience. 'Winging it' and filling body bags as we sort out what works reminds us of the moral dictates and the cost of competence in our profession.²⁶⁵

The other periodical to examine is *Military Review*, published monthly by the US Army's Command and General Staff College, at Ft Leavenworth, Kansas. CGSC

²⁶⁴ *Parameters* was published quarterly with 10 to 12 articles per issue, not including the comments and letters to the editor, book reviews, and reprints. Vol X (1980) is examined in comparatively more detail while Vol XVIII (1988) offers little additional insight.

²⁶⁵ Williamson Murray and Allan Millett, eds., *Military Effectiveness Volume 1: The First World War*, New Edition (Cambridge: Cambridge University Press, 2010), xiii, citing email from General James Mattis to a professor at the National Defense University, 2003.

candidates and primary authors were mid-career Majors, usually with about 10 years of service.²⁶⁶ Those writing in 1980 usually had served in Vietnam as platoon or company commanders, but by 1988, the authors were exclusively products of a post-Vietnam Army. These officers were tactical commanders and struggled with issues of leading troops, the applications of doctrine to practical field problems, and how to sustain or command their forces in the field.

1980

The articles in the *Military Review* at the beginning of 1980 reveal an ongoing dialogue about the struggle to interpret the 1976 edition of *FM100-5*, and TRADOC's related initiatives in light of an expectation to fight outnumbered against the Warsaw Pact.²⁶⁷ Published under the leadership of General William DePuy, this manual was the first articulation of the US version of attritional defense, called 'Active Defense.'²⁶⁸ The manual was explicitly clear in its focus on a specific adversary – the USSR. What is also striking in the January issue of *Military Review* is a sense of acknowledgement (which dovetails with *FM100-5*'s concepts of fighting outnumbered),²⁶⁹ that the Warsaw

²⁶⁶ *Military Review* is published monthly with approximately 10 articles per issue for a total of roughly 120 articles per volume. These do not include the sections on equipment, book reviews, reprints, etc. The two volumes assessed here are Vol LX (1980) and Vol LXVIII (1988).

²⁶⁷ Colonel Edward M. Bradford, ed., "Division 86 Study" in *Military Review* 60, no. 1 (January, 1980):87; Major Floyd V. Churchill, "Field Artillery Employment in the Active Defense" in *Military Review* 60, no. 2 (February, 1980):43-50; Major John M. Oseth, "FM100-5 revisited: A need for Better 'Foundation Concepts'?" in *Military Review* 60, no. 3 (March, 1980): 13-19; Colonel William O. Staudenmaier, "Strategic Implications for Fighting Outnumbered on NATO Battlefield," in *Military Review* 60, no. 5 (May, 1980): 38-50.

²⁶⁸ Romjue, *From Active Defense to AirLand Battle*, 15; *FM100-5* (1976), Chapter 5.

²⁶⁹ *FM 100-5* (1976), 1-4.

pact would have conventional superiority in central Europe.²⁷⁰ The observation is reinforced by the index entries for this volume which identify eight articles dealing with defense, but only four with the offense.²⁷¹ In view of the conventional superiority of the Warsaw Pact, the discussions revolve about willingness and appropriate use of tactical nuclear weapons,²⁷² anti-armour weapons,²⁷³ or the Soviet conventional quantitative superiority.²⁷⁴ The cover of the June issue of MR bears a hammer and sickle – an unambiguous message about the subjects contained within.²⁷⁵ Index entries for Warsaw Pact (4), USSR (11), NATO (4), Nuclear Warfare (5), and Armor (5) paint a distinct picture.²⁷⁶ A two part piece on Warsaw Pact short notice nuclear attack appears in the October and November issues along with articles on tactical nuclear doctrine and with the image of a mushroom cloud on the cover.²⁷⁷ These themes were transmitted throughout the US Army, written by majors, but read throughout the Army, including by young platoon and company commanders with limited experience.²⁷⁸ A young officer

²⁷⁰ Major William D. Brown, "Whatever Happened to Tactical Nuclear Warfare?" in *Military Review* 60, no. 1 (January, 1980): 47; note esp. the opening quote by Manfred Warner.

²⁷¹ Colonel John D. Bloom, ed., "Subject Index: Articles," in *Military Review* 60, no. 12 (December, 1980): 98-105.

²⁷² Brown, "Whatever Happened," 46; LTC Alan P. Armstrong, "Nuclear Weapons and NATO," in *Military Review* 60, no. 5 (May, 1980): 11-17.

²⁷³ Philip Dwight Jones, "US Antitank Doctrine in World War II," *Military Review* 60, no. 3 (March, 1980): 57-67.

²⁷⁴ Staudenmaier, "Some Strategic Implications of Fighting Outnumbered," 49-50.

²⁷⁵ Colonel Edward M. Bradford, ed., *Military Review* 60, no. 6 (June, 1980): Cover. The issue also contains three articles dealing primarily with the Soviets / Russians.

²⁷⁶ Bloom, "Subject Index," *Military Review* 60.

²⁷⁷ Major Donald L. Mercer, "The Warsaw Pact Short-Notice Nuclear Attack: Part I," *Military Review* 60, no. 10 (October, 1980):23-32; Major Donald L. Mercer, "The Warsaw Pact Short-Notice Nuclear Attack: Part II," *Military Review* 60, no. 11 (November, 1980):28-36.

²⁷⁸ There is limited information available about readership and circulation. The underlying assumption is that copies were transmitted to unit libraries, as well as to individual subscribers, and that they were actually read. The fact that letters are sent to the editor tentatively supports the assertion.

who might have been a civilian in 1978 would inherit from the wider army culture the same sense of unpreparedness. Without ever having assessed the conventional balance for himself, he would believe, rightly, that he was at a disadvantage.

The second recurring theme through the 1980 volume of *Military Review* was about leading, training, and motivating a volunteer army. A few articles appeared early in the year dealing with attitude change for US Military Academy Cadets,²⁷⁹ “A Search for Army Values,”²⁸⁰ or “The Roots of Black English”²⁸¹ which might indicate a difficulty in relating to a new generation of cadets or a changing racial mix within the Army. But after the July 1980 a special issue on Leadership the agenda of *Military Review* was functionally hijacked in favour of working on the problems of balancing management against leadership, motivation, recruitment, and retention of volunteers.²⁸² Though the issues of fielding the new Abrams Tank (XM1), or the Assault Breaker program for scatterable guided munitions continued to persist in the equipment section, subsequent issues in the latter half of the year saw articles prompted by the July special.²⁸³ Responses in commentary and stand alone articles evolved the discussions toward team building, leadership, training and education, and even changes in the attitudes and approach of instructors during basic training.²⁸⁴ By December of that year,

²⁷⁹ Colonel Edward M. Bradford, ed., *Military Review* 60, no. 2 (February, 1980).

²⁸⁰ Colonel Edward M. Bradford, ed., *Military Review* 60, no. 3 (March, 1980).

²⁸¹ Bradford, *Military Review* 60, no. 2.

²⁸² LTC Ernest L. Webb, ed., *Military Review* 60, no. 7 (July, 1980).

²⁸³ Every issue of *Military Review* between August 1980 and December 1980 has at least one or two articles on leadership as well as additional commentary in the letters sections.

²⁸⁴ Captain Samuel J. Barlotta, “Basic Training: The Verge of Destruction,” *Military Review* 60, no. 11 (November, 1980): 47-62. This article is also illustrative of the “pedagogic” shift from training conscripts to training volunteers.

index entries for the volume dealing with social factors internal to the Army outnumber entries dealing with the Soviet threat by nearly an order of magnitude. Education and training had 17 entries, manpower accounts for 11, and personnel for 19, while leadership had a staggering 46 entries in a volume with roughly 120 total articles.²⁸⁵ The Soviet threat could claim roughly one quarter of the articles, but leadership and training topics combined to roughly half of all articles in the volume.

Similar paradigms echoed in *Parameters*. Recalling that this journal was aimed at, and written by, a strategically oriented senior audience, it was therefore more focused on policy questions. Articles addressed the draft²⁸⁶ or women in combat roles.²⁸⁷ But here the ratios of themes were reversed and the Soviet threat is dominant. Though *Parameters* was not indexed like *Military Review*, *Parameters*' fewer published articles are relatively easy to count. Each issue included a handful of articles dealing with nuclear weapons, potential war in Europe, or Rapid Deployment Forces intended to reinforce defenders in central Europe. The December 1980 issue alone included articles on "The Decline of the American Military Leadership,"²⁸⁸ in reference to reduced

²⁸⁵ Bloom, "Subject Index," *Military Review* 60.

²⁸⁶ See for instance Morton H. Halperin, "The Draft Again," *Parameters* 10, no. 2 (June 1980): 86-87; Arthur T. Hedley, "The Draft – Pro Et Contra: Without a Draft, We're Inviting War," *Parameters* 10, no. 2 (June, 1980): 84-86; Robert K. Griffith, "Conscription and the All-Volunteer Army in Historical Perspective," *Parameters* 10, no. 3 (September, 1980): 61-69.

²⁸⁷ Judith H. Stiehm, "Women and the Combat Exemption," *Parameters* 10, no. 2 (June, 1980):51-59; See also the comments by BG Theodore C. Mataxis in the Comments section of *Parameters* 10, no. 3 (September, 1980):92-94.

²⁸⁸ Edward N. Luttwak, "The Decline of American Military Leadership," *Parameters* 10, no. 4 (December, 1980): 82-88; James R. Schlesinger, "American Power and the Survival of the West," *Parameters* 10, no. 2 (June, 1980): 19-25.

conventional forces, both quantitatively and qualitatively; an article on short decisive nuclear war; and “Soviet airborne forces and pre-emptive power projection.”²⁸⁹

Technology was the least dominant theme in the volume, but the presence of articles exploring the relation of computers to warfare suggests that the strategic thinkers seemed more interested in computers because the wider diffusion of the technology had not yet occurred. One year before the release of the IBM Personal Computer, we see here the first articles dealing with computer networks and their use to manage forces.²⁹⁰ The March issue could have been James Cameron’s muse for the 1984 film *Terminator*. A cursory count reveals roughly 19 articles could be said to deal with NATO, the Warsaw Pact, Nuclear Weapons or the Cold War conflict. Conversely, only about 10 articles related to motivation, ethics, recruitment, the profession of arms, or leadership. The results in the reviews and comments section are comparable and together indicate that the audiences and authors of the two journals perceived the problems of the AVF quite differently. These differences could indicate an ongoing shift in the dominant military culture as the junior officers would carry their perceptions forward into the 1980s. One article in the September issue of *Parameters* captured the mood with a comment that “[t]he ‘post-Vietnam’ malaise appeared to be ending.”²⁹¹ For the officers and academics writing in *Parameters* or *Military Review*, Vietnam was effectively

²⁸⁹ Kenneth Allard, “Soviet Airborne Forces and Preemptive Power Projection,” *Parameters* 10, no. 4 (December 1980): 42-51.

²⁹⁰ James North, “Hello Central, Get me NATO: The Computer That Can’t,” *Parameters* 10, no. 1 (March, 1980): 91-94; Frank Greve, “Pentagon Calls Super-Computer a ‘Disaster,’” *Parameters* 10, no. 1 (March, 1980): 94-97; Perry R. Nuhn, “WWMCCS and the Computer that Can,” *Parameters* 10, no. 3 (September, 1980): 16-21.

²⁹¹ Leslie Anders, “American Pacifists: The Peculiar Breed,” *Parameters* 10, no. 3 (September, 1980): 46.

forgotten. The military and even national cultures were beset by fear of imminent, surprise Soviet nuclear and conventional attack in Europe, combined with their own sense of unpreparedness. These leaders were also publicly re-evaluating the important relationship between the nation, which voluntarily provided recruits, and its military leadership which employed them.

On a wider scale, the contrast between the two periodicals is also informative. Considering the age difference of the authors, a reasonable conclusion sees a younger generation, the Baby Boomers, having come of age and now reaching the mid-career and beginning to assert themselves with a focus on leadership and management of an AVF.²⁹² Though they likely experienced the end of Vietnam as platoon or company commanders, these young leaders are dissociating from that conflict and re-oriented on the Soviets. Conversely, the older generations consist of a combination of retiring Greats at the highest levels, and the late-career soon-to-be Generals representing the Silent Generation and whose only armed conflict was Vietnam. Theirs was a strangely myopic view centred entirely on the USSR, moderated only by the professional historians who contributed to *Parameters* with articles on broader historical and socio-political topics. Even when they did engage on the topics of the AVF, theirs was an approach intended to inform policy – to solve a political problem – rather than the day-to-day challenges of commanding people in combat. Would there be any evidence of a shift in these cultures 8 years later?

²⁹² Generations and demographics are described in more detail below.

1988

Eight years later, *Parameters* generally retained its focus from 1980: that of the imminent conflict between the Soviets and NATO.²⁹³ While *Military Review* retained a sense of focus on the adversary, the topics shifted away from the attritional fight and into the nuances of manoeuvre and peripheral operations. The January 1988 issue opened with a special on Counter Insurgency (COIN) and Low Intensity Conflict (LIC).²⁹⁴ Rooted in newly released doctrine defining the spectrum of conflict, the writers in this issue wrestled with topics related to operations short of war reminiscent of Vietnam which none of these authors had experienced. The very next issue dealt with sustainment at Corps level, suggesting that the theme for 1988 may be primarily about debating issues not directly related to combat. Another revealing indicator comes from the book reviews, which focused on conventional warfighting problems like *Deep Battle: The Genius of Marshall Tukhachevski*, *Intelligence and Strategic Surprise*, and *Extended Deterrence: The US and NATO Europe*.²⁹⁵ These book length monographs were published in 1987 but topics of the more recently published articles with a much shorter draft-to-publication cycle suggest a shifting focus away from the Soviet threat paradigm in the late 1980s. The ratios of these concerns become less evident in subsequent issues of *Military Review*, but there is evidence of a sense of having solved the division's fight in Europe. Later in the year, a three part article on how best to

²⁹³ 1988 is one of the last years before SAMS graduates would reach the War College.

²⁹⁴ LTC Phillip W. Childress, ed., *Military Review* 68, no. 1. (January, 1988).

²⁹⁵ LTC Phillip W. Childress, ed., "Book Reviews," *Military Review* 68, no. 2 (February, 1988): 91-95.

employ attack helicopters integrated within the armored divisions also suggests the US Army was now fine-tuning its capacity to deliver destruction and to integrate the most modern force multipliers.²⁹⁶ By 1988, it appears that the ideas of Air-Land Battle were being perfected and that these authors no longer seemed apprehensive about surprise attack in central Europe, either because the possibility of surprise was not considered realistic, or because they were confident that, even if surprised, NATO could repel the conventional Warsaw Pact forces.

The index of *Military Review* is also revealing, but by 1988 it is more broadly categorized so not entirely comparable with the 1980 volume. Indicative of a shift to an offensive mindset are the ten entries on Air Land Battle, four on armour, the seven entries discussing Centre of Gravity as well as seventeen articles dealing with the Operations Level of War.²⁹⁷ Supporting the hypothesis that the focus of the authors has shifted are entries such as Military Operations Short of War (17) and Low Intensity Conflict (22), compared to only three articles on NATO or ten on the USSR. Regional focus has widened to include not only Europe (5), but also Latin America (3) and Asia (4) unlike in 1980 where a country or region might have had a single mention in the whole volume. There is also an indication of a new self-awareness regarding

²⁹⁶ LG Crosbie E. Saint and COL Walter H. Yates, "Attack Helicopter Operations in AirLand Battle: Close Operations," *Military Review* 68, no. 6 (June, 1988):2-15; LG Crosbie E. Saint and COL Walter H. Yates, "Attack Helicopter Operations in AirLand Battle: Deep Operations," *Military Review* 68, no. 7 (July, 1988): 2-9; LG Crosbie E. Saint and COL Walter H. Yates, "Attack Helicopter Operations in AirLand Battle: Rear Operations," *Military Review* 68, no. 10 (October, 1988):2-10; All likely inspired by the recent fielding of the AH-64 Apache in 1984.

²⁹⁷ COL Phillip W. Childress, ed., "Subject Index," *Military Review* 68, no. 12 (December, 1988):106-111.

modernization. There are nine articles on technology, mostly in a special issue in March that year, as well as fourteen on modernization and two on space – all topics which were utterly absent in 1980.²⁹⁸ The quantitative assessment supports the qualitative: the problems which troubled the US Army in 1980 had largely been resolved, including the institutionalization of the AVF. On the whole, it is evident that by 1988, the US Army was solving a new suite of problems concerned with logistics and command and control at the Corps level, few of which dealt directly with the USSR, with one notable exception.

A special issue of *Military Review* in December 1988 was entirely organized around updates published by the Soviet Army Studies Office (SASO).²⁹⁹ First, it may seem unusual to a reader today, though not entirely surprising, that such an office even existed. After a decade in Vietnam (or more recently 15 years in Afghanistan and Iraq), no such comparable office focusing on a region or potential adversary was stood up within TRADOC. Second, and more to the point, are the sentiments expressed in the opening abstract of the very first article which deserve to be unpacked in detail:

The Soviets, through General Secretary and President Mikhail Gorbachev, have made what appears [sic] to be unprecedented concessions on arms control and conventional force issues. Are these legitimate expressions of “new thinking” or are they simply steps carefully designed to obtain a “breathing space” for Soviet strategists to implement qualitative changes to their doctrine and force structure? The author sees evidence that “the Soviets have already mounted a sophisticated

²⁹⁸ This may suggest that technology percolates downwards, or alternatively may support the generation change hypothesis, but the observation alone is insufficient to form a conclusion.

²⁹⁹ Bruce W. Menning, “SASO: Soviet Army Studies Office,” *Military Review* 68, no. 12 (December, 1988): 1.

and well integrated campaign to reshape the international security system to Soviet advantage.³⁰⁰

Misinterpreting Gorbachev's "unprecedented concessions" even so close to the end suggests a deeply rooted lack of trust. If these are the same officers who had spent the previous decade diligently reading entire issues with articles about the imminent Soviet threat, they may have retained these learned assumptions without ever having revisited them, or even elevated them to dogma. Having accurately observed the concessions, the SASO misinterpreted their meaning.³⁰¹ Estimates by the Federation of American Scientists (FAS), the Bulletin of Atomic Scientist (BAS) and the International Institute for Strategic Studies (IISS) all agree that in 1986 the Soviet Union apparently unilaterally began reducing its nuclear stockpiles.³⁰² No single satisfactory explanation exists, but possibilities include a modernization of the Soviet missiles with the fielding of the SS-25 which allowed for fewer, more accurate warheads, even with reduced yield. Alternatively, there could in fact have been a unilateral drawdown, motivated by either the cost of maintaining so many weapons, or Gorbachev's desire to reduce stockpiles as a show of willingness to negotiate.³⁰³ International treaties would also not account for

³⁰⁰ Jacob W. Kipp, "Soviet Military Doctrine & Conventional Arms Control," *Military Review* 68, no. 12 (December, 1988), 3.

³⁰¹ Or projected its own past behaviour: this assessment would be accurate from a Soviet perspective observing the US in the late 1970s and early 1980s when NATO supported détente, while the US rebuilt its own conventional capability.

³⁰² Robert S. Norris and Hans M. Kristensen, "Global Nuclear Weapons Inventories, 1945-2010" *Bulletin of Atomic Scientists* 66, no 4 (July/August 2010), 82. See especially footnote 2 for a comment on the methodology for estimating Soviet nuclear stockpiles.

³⁰³ Svetlana Savranskaya and Thomas Blanton, eds, *National Security Archive Electronic Briefing Book No. 563: Gorbachev's Nuclear Initiative of January 1986 and the Road to Reykjavik* (Washington: George Washington University, 12 October 2016), online: <http://nsarchive.gwu.edu/NSAEBB/NSAEBB563-Gorbachev-nuclear-abolition-1986-and-Reykjavik-summit/> .

this change.³⁰⁴ The SALT II Treaty was not ratified and was only followed voluntarily until 1986,³⁰⁵ START talks were ongoing, and the Intermediate-Range Nuclear Forces (INF) Treaty would not be signed until later in the 1980s, so it is possible Gorbachev was trying to pre-empt these talks (or that they gave him a plausible reason to reduce expensive stockpiles). The final possible explanation was that the reductions were not as significant, but that the western estimates were incorrect, though the effect would be the same.³⁰⁶

The second reason the assessment by SASO is striking is that the Soviet Union would dissolve within 36 months. In fact, the workers' strikes which would cascade throughout the Eastern Bloc to collectively become the revolutions of 1989 had already begun. Within twelve months of this SASO assessment the Berlin Wall would open without Soviet intervention as had occurred in Hungary in 1956 or Czechoslovakia in 1968. Surprisingly, by 1991 free elections would be held in Poland, Hungary, Bulgaria, and Romania. Germany would formally be unified on 3 October 1990 and the Soviet Union would be powerless to oppose these movements. The SASO had misread or misinterpreted the sources and, in the cultural analysis, demonstrated how deeply these animosities were entrenched amongst the officers of the US Army. In fairness, "the fact

³⁰⁴ Joseph P. Harahan and John C. Kuhn III, *On-Site Inspections Under the CFE Treaty, A History of the On-Site Inspection Agency and CFE Treaty Implementation, 1990-1996*, (Washington: US Department of Defense, 1996), 345-346. The chronology of the Conventional Forces Europe (CFE) talks, occasionally called Mutual Balanced Force Reduction talks also fails to account for the Soviet drawdown of Nuclear Weapons in 1987.

³⁰⁵ George C. Wilson and R. Jeffrey Smith, "US to Break SALT II limits Friday," in *The Washington Post*, November 27, 1986.

³⁰⁶ It is unclear when Sovietologists noted these reductions, and it is entirely possible that the estimates were retroactive after the end of the Cold War.

that there were plenty of alternative scenarios at hand made the unlikely Soviet retreat from the ideological and military confrontation with the West almost impossible to predict until the very last moment.”³⁰⁷ Conversely, Bruce Berkowitz argues, the evidence, and product from the US intelligence community predicted the Soviet collapse quite accurately.³⁰⁸ The warnings could not be heeded because of a “collective cognitive architecture” or in the language of the present text ‘the dominant culture,’ which was not prepared to accept evidence so contrary to the established patterns of thought passed down since the mid-1970s, and exemplified in the SASO’s assessment.

But having been so finely tuned and prepared to fight the Warsaw Pact, and persevering so close to the end of the Cold War to prepare for the inevitable confrontation, it is little surprise that the US Army was so overwhelmingly successful against the second rate Iraqi Army two years later. In fact, it was VII Corps, arguably the best trained and equipped formation ready to face the Warsaw Pact in Europe, which redeployed to the Gulf in 1990 and faced the Iraqi Army instead of the USSR. And it was only because the Soviet threat had so rapidly subsided that it was even possible for VII Corps to redeploy to the Gulf.

³⁰⁷ Olav Njolstad, “Introduction” in *The Last Decade of the Cold War: From Conflict Escalation to Conflict Transformation*, Olav Njolsad ed, (London: Frank Cass, 2005), xi. It is also possible that even those within the Eastern Bloc could not foresee the exact effects of drastic policy change.

³⁰⁸ Bruce D. Berkowitz, “US Intelligence Estimates of the Soviet Collapse: Reality and Perception” in *International Journal of Intelligence and Counterintelligence* 21 (2008): 237-250.

Popular Culture and Demographics

Popular culture is a relevant indicator of culture change in the wider society because it signals a “passing of the torch” to a new generation.³⁰⁹ One of the earlier indications originates in the Army War College with an analysis by Colonel Harry G. Summers, who was one of very few authors critically examining Vietnam. As an instructor at the War College he was taken aback by the lack of enrollment in elective courses on Vietnam as late as 1983.³¹⁰ But the apathy appears to end rather suddenly through the early 1980s, as noted at the time by the NY Times, with a spike in literature, and supported by cursory searches of online databases.³¹¹ Between 1968 and 1983, there were an average of 63 articles and monographs published annually, but these suddenly increased through the 1980s to reach a steady average of nearly 500 publications annually through the 1990s.³¹² A similar pattern follows a few years later in film.

The portrayal of the US Armed Forces in films in particular oscillates between glorified to openly critical. In the case of naval aviators, whose status was clearly untainted by Vietnam, they were seen as competent and cocky in *Top Gun* (1986) and

³⁰⁹ Neil Howe and William Strauss, *Generations: The History of America's Future, 1584 to 2069*, (New York: William Morrow & Company, 1991), Chapter 11. With respect to the transition between Baby Boomers and Gen X, I use 1964-5 as accepted by the US Census Bureau. See footnote 6 in U.S. Census Bureau, *The Older Population: 2010* (November 2011), online:

<https://www.census.gov/prod/cen2010/briefs/c2010br-09.pdf>. The relevant definition is not only demographic but cultural as well. Gen X are the first children who have no memory of the Moon landing and who come of age in an era of computers and the early internet.

³¹⁰ Harry G. Summers, “Teaching Vietnam: A Critical Military Analysis,” *Teaching Political Science* 12, no. 4 (Summer 1985): 152-160.

³¹¹ Fox Butterfield, “The New Vietnam Scholarship,” *The New York Times*, February 13, 1983.

³¹² Based on a cursory search through UNB libraries for “Vietnam War” and sorting publications by year.

An Officer and a Gentleman (1982). The mood was moderately positive when dealing with Marines in Grenada as portrayed by Clint Eastwood in *Heartbreak Ridge* (1986). But for the US Army the subject matter and focus dealt critically with the flood of Vietnam War films such as *The Deer Hunter* (1978), *Apocalypse Now* (1979), *First Blood* (1982) *Platoon* (1986), *Hamburger Hill* (1987), *Good Morning Vietnam* (1988), Kubrick's *Full Metal Jacket* (1987), or Oliver Stone's *Born on the Fourth of July* (1989). According to Michael Anderegg in *Inventing Vietnam: The War in Film and Television*: "it became clear that Vietnam films were not merely retrospective; rather, they became and continue to be barometers of current attitudes."³¹³ And if Anderegg's assessment is correct, what does the "barometer of current culture" indicate when there was a spike in generally critical films released through the late 1980s? Did these indicate contempt for the army by the wider society? Or did the number of films suggest that it had become acceptable to have a public discourse about Vietnam because enough time had passed, and if so, why not for the previous ten years? To answer these questions, it is important to consider the likely audiences for these films.

Loosely based on Neil Howe and William Strauss' generation theory, there is a valid observation to be made that demographic cohorts represent both commonalities with each other and contrast to cohorts before and after. The so-called Greatest Generation was born between 1900 and 1925 and fought in WWII and Korea. They were disproportionately represented in government and senior Army positions through the

³¹³ Michael Anderegg, Introduction in *Inventing Vietnam: The War in Film and Television*, Michael Anderegg, ed. (Philadelphia: Temple University Press, 1991), 4.

1970s and 1980s. Notable representatives included Generals Westmoreland, DePuy, and Abrams; two of the longest serving Secretaries of Defense: McNamara and Weinberger; notable secretaries of state Kissinger and Schultz; as well as Presidents Nixon, Ford, Carter, and Reagan. The aptly named Silent Generation (born 1925-1945), missed WWII but formed the bulk of US forces in Vietnam. The Silent Generation was effectively dominated by the Greatest in positions of leadership and in decision making until the late 1980s, with the likes of Schwarzkopf and Powell who had mid-career experiences in Vietnam called on to lead the AVF through the 1980s and into the post-Cold War period. Baby Boomers (born 1945-1965) came of age through the Vietnam War where they may have served as platoon and company Commanders at most. As such, Boomers were absolved of the operational and strategic failures associated with this conflict. Significantly, this was the last generation to be drafted into service. Gen X, those born between 1965 and 1980, come of age in the mid to late 1980s. They had grown up with TVs and computers, but do not remember the moon landings. Like the Boomers before them, this generation was exposed to the threat of the Cold War, but did not subscribe to the notion of an ideological struggle. Importantly, they were all volunteers joining an Army accustomed to leading draftees.

So in the context of the US Army though the 1980s, cultural change overlapped with a demographic shift, was reinforced by the AVF, and amplified by a spike in portrayal of the army in popular culture. It was not only the culture that changed, but also those who contained it and carried it too. Like a game of telephone, played out over millions of line between the Boomers and Gen Xs coming of age, the old could not relate the experiences of the late 1960s and early 1970s because the young had no frame

of reference to which to relate it. By the mid-1980s any vestigial guilt about Vietnam was expunged from the US Army's psyche, possibly because there were so few of the original conscripts left serving to remember it. A number of events culminated in the mid-1980s and suggest a change in attitudes through a series of films combined with the coming of age of the oldest Gen Xers into the building of a new Army. Unlike the religious tradition of inherited original sin, the new generation could dissociate itself with the decisions and events of Vietnam, or even the Cold War. These Gen Xers, born since 1965, were barely old enough to remember the fall of Saigon but not the Moon landings, so could bear no responsibility for the decisions of their parents in the late 1960s and 1970s which led to a mini civil war over support for the war in South-East Asia. This was arguably a reconciliation of reality and discourse in the act of passing the story to the next generation as a lesson. The US societal culture had a moment of catharsis in the mid-1980s when it also re-established its confidence in its own ability to perform warfighting tasks betraying the impact of innovation on culture. The seeming successes in Grenada and Panama were recent enough to be owned by the new generation, but the failures in Iran in 1980 and earlier could be their parents' fault. Furthermore, a newly equipped and organized army might have appealed to a new cohort which was progressively more comfortable with technology. In sum, the notion that each generation might have its own slightly distinct culture, cyclical or not as Howe and Strauss suggest, is not sufficiently explored or mapped to form the basis of a significant conclusion about this observation of catharsis, no matter how intuitively appealing it seems.

The US Army in the late 1980s

A preliminary note on the sources is warranted. First, this is an incredibly literate army. The discipline and organization required to publish a ten-article issue monthly as is the case for *Military Review* or as many as fifteen academic level articles in *Parameters* quarterly is impressive. Secondly, the focus, professionalism, and engagement on the germane issues are striking. The dialogue in these periodicals is likely as much a contributing factor to the success of the US forces in the Gulf as the AoE organization, The Big Five, or the doctrine of ALB. Finally, the ongoing and contemporary historical record of events, as managed by the Center of Military History and professional historians, provides an unprecedented access into the considerations of the decision makers of the time.

In the 1988 volume of *Military Review*, there were mentions of Vietnam in reprints and reviews, but never as the primary subject of a published article.³¹⁴ The index at the end of the volume shows zero entries and this conspicuous absence is just as indicative of the impetus for the changes within the Army. If it was failure in Vietnam which motivated the technological, organizational, and doctrinal transformation of the 1980s, the people living through it were unaware of this prime mover. The initial development of The Big Five pre-dates the escalation in Vietnam, so technological transformation is evidently not driven by that conflict. Similarly, the doctrine published

³¹⁴ LTC Phillip W. Childress, "Summaries," *Military Review* 68, no. 5 (May, 1988):83-85; LTC Phillip W. Childress, "Reviews," *Military Review* 68, no. 7 (July, 1988):92-96; LTC Phillip W. Childress, "Reviews," *Military Review* 68, no. 10 (October, 1988):89-96; COL Phillip W. Childress, "Reviews," *Military Review* 68, No. 11 (November, 1988):88-96.

in the three editions of *FM100-5* between 1976 and 1982 makes no mention of counter-insurgency, low intensity conflict, operations short of war, or interventions. The 1986 version only mentions (counter-) insurgency and low intensity conflict in passing within the introduction, but does not return with prescriptive guidance on how to prosecute these environments.³¹⁵ These secondary efforts were left for subsidiary publications, so clearly doctrinal revision was also not driven by Vietnam. It is only the divisional restructuring and the organizational change which could be said to have its origin in Vietnam, though even this is circumstantial, and far more likely to have been motivated by total authorized strengths. The light infantry divisions of the Army of Excellence were structured as such for their rapid deployment,³¹⁶ even if that also incidentally made them well suited for low intensity interventions and counter-insurgency operations. It was not the defeat in Vietnam which prompted the transformation of the US Army through the 1980s, but the singlemindedness of pursuing solutions to only one problem: how to defeat the Soviet Army in central Europe. The US Army in 1991 was not revolutionarily different from its WWII predecessor. Rather, it was an instrument of national power focused on the single object of defeating an adversary without ever crossing the threshold of war.

Though there is no successful definition of a disruptive innovation, it is a defensible position to argue that none of the material transformations in the US Army through the 1970s and 80s was revolutionary. In his *Warfighting and Disruptive*

³¹⁵ *FM 100-5* (1986), 4-5.

³¹⁶ Henry O. Malone, JR, "Foreword," in Romjue, *The Army of Excellence*, xi.

Technologies, Terry C. Pierce offers a typology of innovation in a military context. Working along two axes – those of components and architecture, he differentiates between incremental and overturning changes.³¹⁷ As examples of architectural overturning he cites Blitzkrieg and carriers, but of modular change he gives examples of equipment upgrades and even modular innovation of components within a system.³¹⁸ In the context of Desert Storm, GPS could easily be classified as a modular upgrade, since vehicle crews have to navigate on land, regardless of the tool they use. Even The Big Five would qualify as mere incremental innovation, while *FM 100-5* cannot be said to reinvent the linkages between components of the ground forces. Tanks and infantry continued to work together in mechanized formations, exactly as they had since 1918. *FM100-5* might be more aptly called a renaissance, or rediscovery of tactics, rather than a discontinuity. Materially, by the late 1980s, the US Army was not significantly smaller than at the end of Vietnam with 776 000 regulars, all high quality volunteers, organized into 18 divisions. They were equipped with the best technology the United States could offer, but these were only differences in degree, not kind. By Pierce's morphology, the changes were not disruptive.

There was, however, something different about the US Army culture by 1988. Perhaps the wider US society had had its catharsis with Vietnam represented by the abundance of films about the soldiers' experiences. A generational change was in progress, with the Gen-X coming of age, while the Boomers began assuming the roles of

³¹⁷ Pierce, *Warfighting*, 16.

³¹⁸ Pierce, *Warfighting*, 16.

leadership, displacing an aging population of Silents and the dominant Greats. With the handover also came a cultural shift – Gen X was familiar with technology, having grown up in a world which had only ever known rockets and nuclear weapons, and which had an increasing and persistent access to personal computers. The inevitability of the RMA must have seemed immediate and unquestionable.

Finally, the old military adage that it is best to train for *a* war and not *the* war rings paradoxically hollow. In the mid-1970s it was not the failures of Vietnam, but rather the Soviet nuclear, conventional, and doctrinal parity which terrified the US.³¹⁹ In response, the US Army was specifically configured to fight the Warsaw Pact, in a particular place, with particular equipment, and within particular constraints. General Rupert Smith said in *The Utility of Force*: “Armies do not prepare for the last war, they frequently prepare for the wrong one.”³²⁰ On the occasion of the First Gulf War, the US had prepared brilliantly for the right war. A suitable metaphor may be of a football team which is trained, equipped, and tuned to contest a championship with a similarly built team and on a very specific field. But by 1988, after over a decade of deliberately preparing for this conflict, the Americans did not seem to realize they had won without fighting. The Soviets likely knew they were on the wrong end of the balance, that they had lost economically and would lose materially if it came to blows, just as certain forward thinking elements of the Reagan Administration had intended. But even in December 1988, elements of the US Army and TRADOC, indicative of the wider

³¹⁹ Krepinevich and Watts, *The Last Warrior*, 75, 180.

³²⁰ General Rupert Smith, *The Utility of Force: The Art of War in the Modern World*, (New York: Alfred A. Knopf, 2007), x.

attitudes and perceptions of the adversary, would not believe the Soviet collapse was imminent until the Warsaw pact began disintegrating. To complete the metaphor, having VII Corps deploy from Europe to fight in Iraq and Kuwait was the equivalent of taking this finely tuned football team, and setting them against a little league crew.

There appears to have been a crisis and paradigmatic shift in what the military culture believed, not dissimilar from what Thomas Kuhn observes in the sciences.³²¹ The existing paradigm was characterized by belief in a particular form of Army experience, and with it the expectation that future experiences would also be comparable to Vietnam in what Benjamin Bulley calls “war is hell,”³²² but amplified by the Soviet threat. What hell might war have been if the poorly disciplined, marginally equipped, conscript Army of the US had faced off against the Soviets in the mid-1970s? How quickly would the US have resorted to nuclear weapons? But the “war is hell” paradigm was completely replaced over the course of roughly twenty years with a new view of “immaculate destruction.”³²³ Where did this view originate? It was not created by an excellent tank, a sound doctrine, or a table of organization and equipment, yet somehow by 1991 an entire generation of soldiers (and politicians) came to believe that they could utterly destroy their adversary, with hardly any losses – because they had. This transformation in ideologies, assumption, and biases, more than any other change represents the fundamental revolution in the US Army through the late Cold War.

³²¹ Thomas Kuhn, *The Nature of Scientific Revolutions*, 43.

³²² Bulley, *The New American Way of War*, 1, Bulley devotes most of Chapter 1 to establishing the base paradigm of “War is Hell.”

³²³ Bulley, *The New American Way of War*, 8.

Epilogue

The peace dividend of the Cold War lasted barely a decade. The interventions of the 1990's – arguably successful in the former Yugoslavia, and utter failures in Rwanda and Somalia – were indicative of an early eagerness to solve the problems of the world with military force. After the success of Desert Storm, it is no surprise that a sitting US President would so readily reach for the same tool again and again and again. Two paradigms were established in the late 1980s and early 1990s: first a willingness to use armed force, and second a corollary belief which appears prevalent even into the 21st century – that all military problems can be solved through some combination of technology, doctrine, or reorganization. If there is a new American Way of War, it is to solve strategic problems militarily, and to solve military problems with technology, doctrine, and structure. These paradigms fail to account for the human cultural elements which are at the root of every conflict in which the United States has engaged for the past 100 years, and will become more central to the ideologically motivated conflicts of the present.

Chapter 4 – Preliminary Observations Regarding Culture and Change.

First Battles

In every first battle there is a moment when combatants clash and when both respond to the stimuli in ways predetermined long before. They are products of their cultures – religious, linguistic, ethnic, and military, as well as of their personal experiences, training, doctrine, and equipment – and behave correspondingly. These combatants place a particular value on their own and adversaries' lives; they are shaped, often unconsciously, into fighting with particular weapons and in particular ways. The modern western tradition, for example, eschews “low blows”, gives quarter, and expects it in turn. Just as children can be said to be discursively gendered, so too can soldiers be said to be discursively inculcated into their respective national conceptions about warfare, then in turn into their services, corps, branches, and units. In a stark example of these differences, consider what it might have been like when sometime in late 1942 a US Marine with bayonet fixed first faced a Japanese officer with katana drawn? What of the US Tank Commander in 1991 who raced to fire first as he watched the Iraqi T-72 traverse its gun to do the same? What might each have hoped for as an end to the encounter, and what did his culture dictate about the purpose and righteousness of his cause, or the value of his own life or that of his adversary? Each was an expression of his underlying formative culture, and as a result may have been more or less willing to kill or to die and to fight in his particular way. But nearly all of these decisions had been made in the decades before the encounter, and the path had been set long before the shooting started.

This work set out to explore the relationship between adaptation and culture. In the absence of a comparative study of several nations or even multiple distinct cultures, it is too soon to make declarations about what makes some better at adapting than others. Nor can any declarations be made about what distinguishes some innovations and adaptations as revolutionary or disruptive enough to give significant advantage over an adversary because the literature is simply not sufficiently developed. Based on this limited study of secondary literature and of the US Army in a rather short period, no sweeping conclusions should be made about which elements of the thirty-year transformation gave the coalition the most distinct advantage in Desert Storm. There are, however, a few provisional and peripheral deductions which may be made regarding the influence of culture on adaptation, or the relationships amongst cultures and sub-cultures.

Patterns of Behaviour

The first observation relates to patterns of problem solving. Modes of adaptation are rooted in the most recent response to threat to national existence: whatever mode of adaptation worked effectively the last time will be the default mode of adaptation until it no longer works. “Organizations that have overcome extreme threats or challenges tend to reify whatever procedures they think saved them,” Isabel Hull wrote of the Germans in the 19th century, “The resulting lessons are doubly memorable: as solutions to the problem and as prescriptions against the anxiety the trauma caused. Trauma learning is

therefore especially resistant to change and testing.”³²⁴ In the case of the US Army, industrial level mechanized warfare had been successful in WWII, so this was the mode of adaptation adopted in the 1960s and 1970s even when faced with non-conventional threats like insurgency or nuclear weapons. It was a search for mechanized warfare, but better. General William DePuy is quite adamant in his papers assessing Soviet weapons’ performance during the Yom Kippur War (1973): “Today tanks are about ten times more effective than World War II tanks.”³²⁵ It is revealing that the baseline is WWII (with which Gen DePuy is familiar) rather than WWI, or the interwar period. It is also revealing that the argument and deductions drawn from the study of the 1973 war were not that a weapon suitable for defeating tanks or ATGMs was the answer, but rather that more or better tanks with more and better integration with infantry and better training for the crews and commanders was the solution. DePuy goes on to say that if a tank is exposed, it will suffer unacceptable losses.³²⁶ But McMaster’s Eagle troop, less than 20 years later, did exactly the opposite of what DePuy had concluded. They pressed their attack in the open desert and continued to assault even after they had crested and entered the enemy kill zone, moving too quickly for artillery support, and having only the organic weapons of the troop at hand. So it is not unreasonable to observe that DePuy drew lessons based on his experiences in WWII and that the lessons learned by McMaster and his cohort in the mid to late 1980s were not what DePuy may have intended to transmit.

³²⁴ Hull, *Absolute Destruction*, 96.

³²⁵ Swain, *Selected papers of Gen DePuy*, 79.

³²⁶ Swain, *Selected papers of Gen DePuy*, 86.

Compatibility and Fertile Ground

Second, adaptations and innovations, be they material or conceptual, architectural or incremental, must align with the culture in the population which adopts them. For instance, the notion of equipping Japanese Self Defense Forces with tactical nuclear weapons is absurd today because these weapons do not align with the current culturally acceptable forms of warfare. Suicide IEDs and Kamikaze attacks are not practiced in Western armies but self-sacrifice in defensive battle is glorified. ‘Waste of life’ in the attack, has been out of fashion since the First World War, but last stands have been a hallmark of legends to emulate since the three hundred sacrificed themselves at Thermopylae.

In this spirit, much has been made of Arab states’ relatively poor performance in recent conventional conflict with western armies (including Israel). Norvell De Atkine relates a specific example from his time as a US military attaché, security assistance officer, and observer within the UAE and other countries in the Middle East:

On one occasion, an American mobile training team working with armor in Egypt at long last received the operators' manuals that had laboriously been translated into Arabic. The American trainers took the newly-minted manuals straight to the tank park and distributed them to the tank crews. Right behind them, the company commander, a graduate of the armor school at Fort Knox and specialized courses at the Aberdeen Proving Grounds ordnance school, collected the manuals from the crews... he did not want enlisted men to have an independent source of knowledge. Being the only person who can explain the fire control instrumentation or boresight artillery weapons brings prestige and attention.³²⁷

³²⁷ Norvell B. De Atkine, “Why Arabs Lose Wars”, in *Middle East Quarterly* 6, no. 4 (December 1999): 17-28.

From this anecdote, it is apparent that Egyptian soldiers and officers accepted this officer's behaviour as normal within their particular hierarchical, low autonomy culture. But when a weapon such as a tank is conceived from the outset to be used by a crew of independent, knowledgeable operators, the overall effectiveness of the tank and its crew is degraded if they are denied access to critical technical information. What served McMaster's troop in February 1991 was partly that Iraqi crews took longer to respond, possibly because they did not have enough information passed down by those who retained it for their own prestige.³²⁸ De Atkine's anecdote also betrays the culturally transmitted and unconscious bias of the tank designers and the trainers of belonging to a society with high individual autonomy as contrasted to a hierarchical or collectivistic culture to which they provided the vehicles. They are, in Isabel Hull's words, "blind" to the possibility of another method of organizing society and the military culture it produces.³²⁹

The corollary observation is that innovations are unique products or expressions of the culture which originates them. This is the essence of John A. Lynn's critique of technological determinism: "choosing, integrating, and exploiting new weaponry remains essentially a conceptual task."³³⁰ This is by no means to say that the technological underpinnings of an army are irrelevant. Prussian performance against France in 1870-71 relied as much on railroads and breech loading steel artillery as it did

³²⁸ Stephen A. Bourque, "Correcting Myths about the Persian Gulf War: The Last Stand of the Tawakalna," *Middle East Journal* 51, no. 4 (Autumn, 1997), 573.

³²⁹ Hull, *Absolute Destruction*, 115.

³³⁰ Lynn, *Battle*, xix.

on the general staff, but the decisions to invest in the technologies, to lay track in a network synergetic with mobilization, or choices for training, equipment ratios, organizational structures and operational objectives were ultimately expressions unique to that Prussian culture.³³¹

Relations between Cultures

Third, change can occur at any level of Lynn's cultural hierarchy and by any means of Pierce's modes but what is far more interesting to explore is the change in relations between the levels of the hierarchy. Consider for instance the unique reordering of the relations between the ruling institutions of 17th century Europe and the groups of armed individuals. By reintroducing Roman drill and discipline, the states of early modern Europe reasserted control over the armed mobs that comprised their armies and claimed a monopoly on the delivery of violence. Simultaneously, the relations between the military and national cultures were also altered because the newly disciplined military could no longer supplement its earnings on the backs of conquered territories. But these "larger, more permanent, armies and the more intensive marshalling of resources which they required 'led invariably to an increase in the authority of the state.'"³³² So the relation between strategic and national cultures was also altered. Every linkage amended, the new arrangement became known as the Westphalian system of nation states in the wake of the Thirty Years War. This social

³³¹ Michael Howard, *The Franco-Prussian War: The German Invasion of France, 1870-1871*, (London: Routledge, 1961), 2-6.

³³² Rogers, "The Military Revolution in History," in *The Military Revolution Debate*, 2.

contract between citizen, soldier, and state was again disrupted during the French Revolution with the additional resources required from the citizen – effectively re-negotiating the duty of the citizen by adding *willing* able bodies to the tax, vastly expanding what could be asked of the army itself.

John Lynn captures the divergence of perceptions between the society and its military in his proposed model differentiating between a discourse and a reality on war.³³³ Simply put, Lynn notes that what people say about war and what actually happens are at best similar and at worse, widely divergent. The discourse can be expressed in norms – such as laws of armed conflict which forbid the murder and torture of non-combatants, while the reality witnessed at My Lai or Abu Ghraib is markedly unlike the ideal. Conversely, the reporting of war from the soldiers’ perspective, through embedded reporters, chroniclers, contemporary historians, or even soldiers’ own accounts compels the reader to reassess the discourse and realign it with the ‘reality’ reported by the first person account because the experience is otherwise inaccessible to over 99.5% of the US population.³³⁴ It suffices for the purpose of this thesis to establish the central role of the cultures which must interact and reconcile discourse and reality between the small military culture which has the best access to the reality, and the larger strategic and societal cultures which have the greater influence on discourse. It is precisely the possibility of divergence which Mattis and Schake explore in *Warriors and Citizens* (2016), though they happily conclude that “the concern about the American

³³³ Lynn, *Battle*, Annex A.

³³⁴ Kori Schake and Jim Mattis eds., *Warriors and Citizens: American Views of Our Military*, Stanford: Hoover Institution Press, 2016), 2.

public losing connection to its military is not substantiated by research conducted for this project.”³³⁵ They do however note that there are “gaps between the American public and its military... [and] between civilians and civilian elites or between civilians and government elites.”³³⁶ So if Lynn’s model satisfactorily identifies the observed sub-cultures, and historic study of changes in relations between, citizen, soldier, and state provide sufficient example of the scale of impacts, then study of *relations* between sub-cultures of the same ‘civilization’ is potentially more significant than the study of the impacts of technology, doctrine, or organization on the conduct of war.

Dissemination is Integral to the Culture

The official history’s use of the experience of Vietnam as a shorthand chronological bookend to name a chapter may seem simple or convenient, but it shapes the understanding of readers in subtle ways and perpetuates a particular understanding of causality. This leads to the fourth provisional conclusion: modes of transmission are also expressions of the culture. Jim Greer offers an unnecessarily constrained definition of culture which is effectively limited to behaviour.³³⁷ But since the act of transmission is a form of behaviour, culture includes its own replication. The working definition in this paper is to include all those things which are not biologically transmitted, so all

³³⁵ Schake and Mattis, *Warriors and Citizens*, 3.

³³⁶ Schake and Mattis, *Warriors and Citizens*, 4-5

³³⁷ Jim Greer, “The Weaker Foe - Part 3: Transforming to Win Future Wars,” *The Strategy Bridge*, August 17, 2017. Online: <https://thestrategybridge.org/the-bridge/2017/8/16/the-weaker-foe-part-3-transforming-to-win-future-wars>

forms of non-chemical communication are valid vectors. Then how can culture be transmitted in the military context?

At its most basic form of transmission, culture would begin formation as early as birth. Even the Spartans could not raise a child without some initial imprinting of identity before entry into military service, so the construction of identity, be it ethnic, sexual, religious, or national underpins the societal culture from which the military is recruited. Enrollment and continuation rates may be influenced by the culture which glorifies military service or be inversely impacted by a pacifist society. The transmission of the values identified by Adamsky or Schwartz noted in Chapter 2 begin before the recruit enters service, through primary education, structural metaphors in the language, as well as through national stories and myths. If, for instance, the story of the boy who cried wolf is told regularly in a particular culture, if it is referenced by national myth, and if variants are present in the media the child consumes, then values such as integrity might be imprinted and perpetuated or even amplified in military service. Telling tales of great warriors of Norse or Greek myth for instance communicate to the young listeners the desirable and undesirable behaviours. Thus on entry into military service, the recruit is not a tabula rasa but holder of preconceived notions about how to behave. The Stanford Prison Experiment is as much a comment on what, how, and why the participants thought they should act as guards or prisoners that they had some concept of these roles at all. So what might a young American conscript have thought in 1971 about how he should act and how might he have arrived at these beliefs if he had seen public protests against this war? Conversely, what might a volunteer think about how soldiers behave or what prestige they should be afforded after having seen a film

like *Full Metal Jacket*? These beliefs may be amplified, while others may be completely dissonant. For instance, values such as individualism might be repressed in the rigid hierarchical society of a military structure. This assimilation and modification, or indoctrination, begins with the aptly named basic training.

For soldiers and officers as adults functioning in a social environment, more conscious, rigid or formalized forms of cultural encoding are used. Laws, both national and international, religious doctrines, or articulation of ethos can attempt to both record and transmit the dominant or desirable behaviours. Popovski et al note the range of religious traditions and their relation to warfare and these form only one example of the cultural Venn diagram intersecting societal, national, and military traditions.³³⁸ Laws of Armed Conflict (LoAC) are another excellent example of the supra-cultural convention of how to fight, at least amongst western armies and the exported and associated allies who aim to participate in the Westphalian system.³³⁹ But Theo Farrell also points to rarely studied conventions: transnational norms such as the “common template of military organization... state-based, standing, standardized, and technologically structured forces.”³⁴⁰ From his study of the creation of the Irish Army he also notes the distinct forms of “norm transplantation” where he observes cultural match and cultural clash as a prerequisite for respectively incremental and radical norm transplantation.³⁴¹ Not dissimilar from the observations on compatibility above regarding technology,

³³⁸ Popovski et al., *World Religions and Norms of War*.

³³⁹ Farrell, *The Norms of War*, Chapter 5.

³⁴⁰ Farrell, *The Norms of War*, 25.

³⁴¹ Farrell, *The Norms of War*, 45.

doctrine and structure, as norms, are also dependent on a fertile ground for transplantation. A study of assimilation in particularly unique military formations such as the US Marine Corps, or even better, the French Foreign Legion, could illuminate this phenomenon.

Methods of indoctrination into the military group range in formality from hazing through to expected participation in traditional activities such as the teaching of foot drill or mess dinners, to deliberate professionalization through Professional Military Education (PME), training courses, and the acts of group formation in basic training. Doctrine and the PME through which it is frequently transmitted is one particularly significant method of separating the military culture from the societal. Since knowledge and application of doctrine is a prerequisite for success in training, its internalization is then proportional to advancement.

The purpose of doctrine, as observed by Harald Hoiback in its NATO definition, is to “guide actions,” or in other words, to suggest behaviour.³⁴² Hoiback goes on to offer doctrine as a relation between three related and occasionally opposing pillars of theory, representing rationality; culture, representing a-rationality;³⁴³ and authority which acts as an arbiter between the two.³⁴⁴ Specifically as it relates to culture, Hoiback’s model notes that culture can both cause action (or to impact behaviour) and

³⁴² Harald Hoiback, “What is Doctrine” in *Contemporary Military Innovation Between Anticipation and Adaptation*, Dimitry (Dima) Adamsky and Kjell Inge Bjerga eds., 21.

³⁴³ Hoiback, “What is Doctrine,” 25, used in the sense that culture is arbitrary and ultimately of personal preference, not necessarily irrational. The meaning here is comparable to the term atheist rather than anti-theist respectively.

³⁴⁴ Hoiback, “What is Doctrine,” 26-27.

mastery in that culture can dictate how doctrine is created in which case it becomes a symptom, or conversely to be an expression of desirable behaviours, in which case it can be manipulative in a sense similar to commandments.³⁴⁵ So he concludes that “based on how the three elements are balanced, ... [doctrine can be] a tool of education,... a tool of command, [or] a tool of change.”³⁴⁶ Thus in Hoiback’s view, there is room for doctrine to be used to perpetuate culture, as much as to modify it. But since military doctrine has no civilian equivalent short of religious dogma (which is far less nimble), it offers a unique method and rate for altering military culture which suggests in turn that military culture will always be distinct from its societal counterpart.

Caveats

In light of the examples here, a caveat and caution on assessing some cultural elements as more or less desirable are necessary. Reconsider Clausewitz who suggested that the moral plane is in fact underpinned by the cultural.³⁴⁷

Essentially, war is fighting, for fighting is the only effective principle in the manifold activities generally designated as war. Fighting, in turn, is a trial of moral and physical forces through the medium of the latter. Naturally, moral strength must not be excluded, for psychological forces exert a decisive influence on the elements involved in war.³⁴⁸

³⁴⁵ Hoiback, “What is Doctrine,” 25-26.

³⁴⁶ Hoiback, “What is Doctrine,” 27.

³⁴⁷ Jim Greer comes to a similar conclusion, though there is a nuance between our expressions: he subsumes culture within Clausewitz’ moral plane, while I contend that culture in fact underlies both Clausewitz’ moral and physical planes.

³⁴⁸ Carl von Clausewitz, *On War*, trans. Michael Howard and Peter Paret (New York: Alfred A. Knopf, 1993), 145.

Clausewitz' moral element includes not only the psychology of morale, but also the psychology of group dynamics and personal identity. By linking identity with nationality, ethnicity, religion, law, or any other carrier of internalized norms, the combatants compete for primacy of values in a form of social Darwinism at the tribal level. Armed conflict implicitly elevates combatants to the status of ambassadors for their culture. Therefore, one might conclude that if combat expresses culture, then victory in combat is an expression of cultural superiority. Moreover, because combat is ultimately a spectator sport, the culture/value relation is translated to the observers. But this assertion decontextualizes every other factor in combat. So readers must resist the temptation to causally relate culture, as expressed in a particular conflict, with the far more easily quantifiable military effectiveness. Battlefield effectiveness must concede to context ranging from weather and numbers, to political objectives and the conventions by which the conflict is persecuted. Both contextual factors are represented by the contrast of the First and Second Gulf Wars where nearly identical cultures engaged in armed conflict in nearly identical terrain, but the outcomes are entirely incomparable. In effect, while combat expresses culture, it does not express value superiority.

Interestingly though, the US Army pursuit of technological, organizational, and doctrinal evolution in the absence of an obvious trauma appears to contradict the first observation above regarding patterns. Considering the ongoing Cold War as a general trauma, or the specific events of the Cuban Missile Crisis, the Yom Kippur War, or the Soviet Invasion of Czechoslovakia as specific traumas which suggest a requirement for a conventional rebalance may help assuage this concern. To further reconcile the

seemingly contradictory observations, it is also possible and in fact probable, that a traumatic experience is not a firm pre-requisite to innovation, but a catalyst.

In summary, these preliminary observations, or even conjectures built on admittedly limited evidence, indicate that for meaningful adaptations to occur, cultural change necessitates an understanding of personal and cultural biases, combined with an awareness of relations amongst cultures including the adversary but also the societal, strategic and friendly allied cultures. And because culture underlies how weapons are designed, and how they are used, the most meaningful adaptation is not in the weapons, tactics, or organizational structures, but rather in the culture which they express and from which they originate. The timeline of the dominant interpretation which claims that the end of Vietnam and the Yom Kippur War were the primary drivers for change is not supported by the evidence. This experience may even suggest a feedback relationship between culture and innovation: that innovation can impact culture in a non-linear feedback where technology influences culture, since culture underlies behaviour, it in turn can drive technology and doctrine.³⁴⁹

Culture and Transformation

This investigation has illuminated the multifaceted relationship between culture and adaptation. The case of the US Army simultaneously provides a uniquely accessible example of changes in military culture, as well as demanding a more rigorous theoretical

³⁴⁹ Parker, *The Military Revolution*, 159. His conception is more akin to feedback in complex systems, while citing Charles Tilley “that states made war, but war also made states.”

development of the cultural lens. In other words, the case study both demands a cultural explanation, and concurrently informs the cultural approach.

Culture, comprising all things which are not biologically transmitted, is the primary driver of group behaviour. It is the *emergence* of group norms, these algorithms of collective beliefs and actions which follow a distinct logic. Cultures, at all levels do change, as do the relationships amongst them. They are challenged by their environments and other cultures so when the existing patterns of behaviour and problem solving are insufficient, adaptations occur just as Kuhn describes of scientific revolutions. Transmission, as its own unique form of behaviour, also requires fertile ground, explaining why paradigmatic shifts, why revolutions, are so elusive.

The US Army's changing perception of itself in the late Cold War was a result of nearly two decades of deliberate and directed effort to solve the particular problem of how to prepare for the imminent conventional war with the Soviet Union. The changes in the US Army culture progressed incrementally from collective self-doubt to a tipping point of collective confidence sometime in the mid-1980s. Such transformation would be impossible without updated doctrine, structure, and equipment, but without the metamorphosis in the military culture, the results of Desert Storm would not be as memorable today. This change can be replicated, but requires a clear problem and a bespoke solution. Occasionally, as was the case of VII Corps in 1991, the hammer can be used for a different nail, but it is a strategic miscalculation to assume that same solution would work for all future problems.

What Remains to Study

There is much work to be done, but underlying it all is a requirement to clarify the typology of cultures by asking: What are the value dimensions, how are they established and changed? Can a series of dimensions be used to define successive levels of granularity? That is, to define supra-groupings like “western civilization” with its constituent nations, each consisting of sub-cultures? How can culture, which appears continuous and differentiated by degree, compare to a typology like biological taxonomy which is essentially binary by sorting creatures into groups which have spines, and those which do not, or those which are born live and those which are not. Culture is not nearly so clear-cut – at least so far.

Once a reasonably functional map of cultural dimensions is established, the next step will be to map national, military, and strategic cultures against this typology. It will be interesting to see if (or to what degree) military cultures across nations have more in common with each other than with the national cultures which originate them.

As far as innovations are concerned, nowhere in the literature is there a suitable definition for a disruptive adaptation / innovation. Trevor DuPuy, one of the most deliberate and analytical students of historical conflict, recognized “the essentially evolutionary nature of warfare (no matter how revolutionary new weapons and technology may be)... that modern warfare always will be an extrapolation from past

warfare, and ... that some aspects of war never change.”³⁵⁰ If military effectiveness is conceived as a continuum, is it even possible to identify discontinuity? How can clearly disruptive technologies like nuclear weapons or revolutionary changes in relations between levels of culture be defined?

The study in the third chapter above is admittedly narrow both in time and geography, though fairly broad in context. What is missing in the literature are comparable studies of other cultures in other periods against which the preliminary deductions above can be tested. The immediate next step would be to locate and examine other examples of change similar to the American experience – both influenced by the dominant culture but also altering it in turn. Are there obvious counterexamples? Are there case studies similar to the US example which can reinforce or refute the conclusions?

Finally, there is theoretical gap in explaining the changing relationship between application of violence and monopoly by the state. More significant than the technology being invented may be the diffusion and democratization of dual use technologies which enable anyone so inclined to usurp the power to apply violence in the pursuit of political goals. This paradigm was based on a set of supra-national conventions, rooted in European experiences of the Thirty Years’ War, and represents a cultural super-set, but is deteriorating in the ongoing Global War on Terror.

³⁵⁰ Trevor N. Dupuy, *The Evolution of Weapons and Warfare*, (Indianapolis: The Bobbs-Merrill Company Inc, 1980), vii.

In the end, there are more questions than answers, though a framework for continued research and discussion is a useful step. Understanding human behaviour in its most destructive form can only be of benefit to those who have to practice it, as much as to those who expand the most precious national treasure.

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