

Army Leaders in Multi-Domain Operations: A Theoretical Approach to a Multi-Domain Operation Mentality SAMS

A Monograph

by

MAJ Ryan K. Yamauchi
US Army



School of Advanced Military Studies
US Army Command and General Staff College
Fort Leavenworth, KS

2021

Approved for public release; distribution is unlimited

REPORT DOCUMENTATION PAGEForm Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Department of Defense, Washington Headquarters Services, Directorate for Information Operations and Reports (0704-0188), 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. **PLEASE DO NOT RETURN YOUR FORM TO THE ABOVE ADDRESS.**

1. REPORT DATE (DD-MM-YYYY) 07-04-2021		2. REPORT TYPE MASTER'S THESIS		3. DATES COVERED (From - To) JUNE 20-MAY 21	
4. TITLE AND SUBTITLE Army Leaders in Multi-Domain Operations: A Theoretical Approach to a Multi-Domain Operation Mentality SAMS				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S) MAJ Ryan K. Yamauchi				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Command and General Staff College ATTN: ATZL-SWD-GD Fort Leavenworth, KS 66027-2301				8. PERFORMING ORG REPORT NUMBER	
9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES) ADVANCED MILITARY STUDIES PROGRAM				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION / AVAILABILITY STATEMENT Approved for Public Release; Distribution is Unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT As the US Army solidifies the Multi-Domain Operations concept, it is essential to keep leadership development relevant towards the future operational environment. Near-peer adversaries will continue to compete below the threshold of conflict increasing complexity and uncertainty in multi-domain operations. While it is common to evaluate the Army Leadership Requirements Model, how can the Army leaders build upon core attributes and competencies to thrive in multi-domain operations? The Army Leadership Requirements Model, combined with developing a multi-domain mentality, enables effective leadership in multi-domain operations. The theoretical approach expands on the leadership core competencies and attributes, providing three additional leadership characteristics. The ability to anticipate near-peer actions, leverage available capabilities and people, and persevere through complexity and uncertainty formulate a multi-domain mentality. By implementing a multi-domain mentality through education and training, Army leaders will be effective against near-peer adversaries in multi-domain operations					
15. SUBJECT TERMS Leadership, Multi-domain Operations, Mentality, Army Leadership Requirements Model					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. PHONE NUMBER (include area code)
(U)	(U)	(U)	(U)	46	913 758-3300

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std. Z39.18

Abstract

Army Leaders in Multi-Domain Operations: A Theoretical Approach to a Multi-Domain Operation Mentality, by MAJ Ryan K. Yamauchi, 51 pages.

As the US Army solidifies the Multi-Domain Operations concept, it is essential to keep leadership development relevant towards the future operational environment. Near-peer adversaries will continue to compete below the threshold of conflict increasing complexity and uncertainty in multi-domain operations. While it is common to evaluate the Army Leadership Requirements Model, how can the Army leaders build upon core attributes and competencies to thrive in multi-domain operations? The Army Leadership Requirements Model, combined with developing a multi-domain mentality, enables effective leadership in multi-domain operations.

The theoretical approach expands on the leadership core competencies and attributes, providing three additional leadership characteristics. The ability to anticipate near-peer actions, leverage available capabilities and people, and persevere through complexity and uncertainty formulate a multi-domain mentality. By implementing a multi-domain mentality through education and training, Army leaders will be effective against near-peer adversaries in multi-domain operations.

Table of Contents

Abbreviations	iv
I. Introduction.....	1
II. Multi-Domain Operation Mentality.....	3
Anticipation	5
Leverage	7
Perseverance.....	9
General George Washington in Multi-Domain Operations.....	11
III. Current Doctrine and Theory.....	13
Army Doctrine Publications 6-22- Army Leadership and the Profession Analysis	15
IV. Core Attributes	18
Character	18
Presence.....	19
Intellect.....	20
General Martin E. Dempsey in Multi-Domain Operations	23
V. Core Competencies.....	26
Leads	26
Develops.....	28
Achieves	29
General Norman Schwarzkopf in Multi-Domain Operations.....	30
VI. Multi-Domain Operations Analysis on Army Leaders	34
Implications of Near-Peer Action on Army Leaders.....	36
General Stanley McChrystal in Multi-Domain Operations.....	38
VII. Recommendations for Developing Future Army Leaders	40
VIII. Conclusion.....	42

Abbreviations

ADP	Army Doctrine Publication
ALDS	Army Leadership Development Strategy
ALRM	Army Leadership Requirements Model
AI	Artificial Intelligence
AQI	Al-Qaeda in Iraq
AR	Army Regulation
AO	Area of Operations
ARCENT	Army Central Command
CENTCOM	Central Command
CJCS	Chairman of the Joint Chief of Staff
CJTF-OIR	Coalition Joint Task Force-Operation Inherent Resolve
COIN	Counterinsurgency
CGSC	Command and General Staff College
CRS	Congressional Research Service
CTC	Combat Training Centers
FM	Field Manual
IO	Information Operations
ISIS	Islamic State of Iraq and Syria
MDO	Multi-Domain Operations
MDTF	Multi-Domain Task Force
NDS	National Defense Strategy
NSS	National Security Strategy
OE	Operational Environment
OIR	Operation Inherent Resolve
OODA	Observe-Orient-Decide-Act

PME	Professional Military Education
SERE	Survival Evasion Resistance and Escape
TC	Training Circular

I. Introduction

Although we intuitively know the world has changed, most leaders reflect a model and leader development process that are sorely out of date. We often demand unrealistic levels of knowledge in leaders and force them into ineffective attempts to micromanage... Efficiency remains important, but the ability to adapt to complexity and continual change has become imperative.

- Stanley McChrystal, *Team of Teams: New Rules of Engagement for a Complex World*

The future operating environment will test Army leadership abilities, particularly in multi-domain operations (MDO), against near-peer adversaries. The inherent complexity and uncertainty near-peer adversaries bear in MDO will challenge Army leaders' core attributes and competencies from leading effectively. However, the Army Leadership Requirements Model (ALRM), combined with developing an MDO mentality, enables effective leadership in MDO. While the ALRM applies the attributes and competencies to prepare leaders for the most likely situations they will encounter, MDO requires developing an emerging mindset. An MDO mentality is the ability to anticipate near-peer adversaries' actions, leverage available capabilities and people, and persevere through complexity and uncertainty. A similar process occurred when the US Army transitioned from an AirLand Battle mindset of maneuver warfare to a counterinsurgency (COIN) mentality of simultaneously defeating an insurgency through political and military efforts. A factor guiding the mental shift was the publication of Field Manual (FM) 3-24 (2006), *Counterinsurgency*, amid the Iraq War and arguably overdue, taking three years to develop. While Army leaders have developed a foundation for complex thinking in an MDO environment over the past decades, a fuller and more conscious effort to prepare leaders will be necessary for a near-peer contest. Army leaders must begin to develop an MDO mentality and strengthen relevant qualities within the character, presence, and intellect attributes as well as the leading and developing competencies. By doing so, Army leaders will anticipate adversarial

actions by using systems and experience, leverage the right people and capabilities, and persevere through multiple dilemmas to defeat near-peer adversaries in MDO.

Rather than evaluating the Army Leadership Development Strategy (ALDS) and providing recommendations for the leadership development process, proposing Army leaders develop an MDO mentality maintains the importance of the ALRM by continuing to build relevant leadership requirements. Analyzing the relevancy of ALRM from an MDO perspective presents the core leadership competencies and attributes favorable in MDO.¹ Beyond assessing the ALRM, former Army leaders will highlight the key attributes and competencies that have stood the test of time and influenced their leadership actions in MDO. Furthermore, as conceived by the Army, MDO provides a glimpse of near-peer adversaries' use of advanced technology and information operations (IO) to compete below conflict throughout multiple domains.² Therefore, it is also necessary to show how former Army leaders can use attributes and competencies in conjunction with MDO mentality to defeat adversaries' tactics and capabilities.

Since leadership is a topic with universal appeal, conceptualized in many ways, this research will provide a theoretical approach to understand a different leadership development for MDO.³ Although the approach is inductive, developing an MDO mentality is practical. First, educate Army leaders how to use systems and tacit knowledge to anticipate adversary actions. Second, instruct creative ways to achieve a relative advantage by leveraging capabilities and people. Last, expose leaders to situations that purposely cultivate high uncertainty and risk to build their perseverance. The characteristics of anticipation, leverage, and perseverance form an MDO mentality that future Army leaders must develop to adapt and lead effectively in MDO.

¹ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-2.

² US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 7-12.

³ Peter G. Northouse, *Leadership: Theory and Practice* (Thousand Oaks, CA: Sage, 2016), 16.

However, there are exceptions to this study; the term Army leader(s) focuses on leaders and commanders in a combat role against one or more near-peer adversaries across all operational levels of warfare in multi-domain operations. According to Army Regulations and doctrine, if the study included all Army leaders, it would involve all Army professional members and the Department of the Army Civilians.⁴ Though this study omits Army civilians and non-combat leaders, it does not discount the important role they perform throughout the organization. Additionally, the MDO concept reflects the broader scope of competition and conflict and the inherent jointness nature of modern warfare; however, leadership in joint doctrine primarily discusses a leader's roles and responsibilities. Joint doctrine often mentions a common leadership responsibility; it is building a shared understanding to unify and synchronize actions.⁵ Moreover, since joint leadership doctrine currently does not exist, Army leadership will be examined mainly through Army doctrines.

II. Multi-Domain Operation Mentality

The MDO mentality prepares future Army leaders with a diverse, driven, and proactive way of thinking. To understand an MDO mentality, it is important to define the term multi-domain operations and mentality. According to *the US Army in Multi-Domain Operations 2028* concept, multi-domain deals with more than one domain simultaneously, includes land, air, maritime, space, and cyberspace domains.⁶ While multi-domain operations are conducted across multiple domains and contested spaces to overcome an adversary's strengths, it presents them with several operational and or tactical dilemmas.⁷ Moreover, MDO is more fluid, adaptive, and

⁴ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-15.

⁵ US Department of the Defense, Joint Staff, Joint Publications (JP) 3-0 CH I, *Joint Operations* (Washington, DC: Government Printing Office, 2017), III-14.

⁶ US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), GL-6.

⁷ *Ibid.*, GL-7.

effective operations simultaneously across five domains.⁸ Thus, leaders will face demanding situations and challenges in all environments against highly sophisticated systems with unknown effects. The Oxford dictionary defines mentality as the characteristic attitude of mind or way of thinking of a person or group.⁹ Therefore, an MDO mentality is defined as the ability to anticipate future actions, leverage capabilities and people, and persevere through complexity. The anticipation characteristic drives Army leaders to visualize and describe near-peer actions using systems and personal experience to gain the initiative. At the same time, leveraging enables leaders to think about various ways and means in time and space to accomplish the mission. The perseverance characteristic of an MDO mentality strengthens Army leaders' psychological capacity to endure near-peer stressors.¹⁰ While adversaries present an array of threats across multiple domains, the potential to disrupt a leader's decision-making process will decrease due to a robust mentality.¹¹

In addition, shaping the MDO mentality requires a leader to be exposed to a range of experiences and developmental skills favorable to MDO, contributing to building the associated mindset characteristics. Moreover, the mindset complements the leadership attributes and competencies, which embody a breadth of experiences and skills in other domains. Thus, MDO mentality must stimulate a way of thinking in multi-domains in which diverse cognition becomes without hesitation. As Daniel Kahneman argues in *Thinking Fast and Slow*, mentality is intuition-based thinking involving emotions and quick reactions, which facilitates "cognitive

⁸ Kevin M. Woods, and Thomas C. Greenwood. "Multidomain Battle: Time for a Campaign of Joint Experimentation," National Defense University Press, accessed November 14, 2020, <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/1411615/multidomain-battle-time-for-a-campaign-of-joint-experimentation/>.

⁹ *Oxford English Dictionary*, "Mentality," On-Line Dictionary, accessed January 18, 2021, <https://www.lexico.com/en/definition/mentality>.

¹⁰ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-1.

¹¹ Nassim Nicholas Taleb, *Antifragile: Things that gain from disorder* (Random House Incorporated, 2012), 48.

ease.”¹² The ability to reflect-in-action and reflect-on-action contributes to the mental process in which feedback from all domains is vital to strengthening a leader’s mindset.¹³ Therefore, anticipation, leverage, and perseverance revolve around reflection and self-improvement as a catalyst to develop an MDO mentality. This is a theoretical approach to developing future Army leaders to thrive in MDO; however, there are practical methods to foster an MDO mentality to augment with the ALRM.

Anticipation

The ability to anticipate is a way to look at complex problems and apply non-linear thinking by applying feelings, intuition, impressions, and operational environment factors to understand and visualize a future state. There are two primary ways to gain the ability to anticipate; by using systems and through tacit knowledge. Systems refer to artificial intelligence and intelligence collection assets, whereas tacit knowledge resides in a leader’s mind gained from experiences and training.¹⁴

In the future operating environment, AI advancement is poised to provide a way to anticipate near-peer adversaries’ actions through better information and analysis for decision-makers in MDO.¹⁵ Already AI facial recognition and predictive analysis exist and, if implemented correctly, can provide Army leaders to identify near-peer adversaries from non-adversarial people in conflict.¹⁶ Additionally, AI will also speed up leaders’ decision-making through intelligence collection assets with built-in AI algorithms that will enable leaders to

¹² Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2013), 59.

¹³ Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions, 1 ed.*, (San Francisco: Jossey-Bass, 1990), 41.

¹⁴ Department of the Army, Field Manual (FM) 6-0, *Command and Staff Organization and Operations* (Washington, DC: Government Printing Office, 2014), 6–2.

¹⁵ Greg Allen and Taniel Chan, *Artificial Intelligence and National Security*, (Belfer Center for Science and International Affairs, July 2017), 32.

¹⁶ Patrick Tucker, “What the CIA’s Tech Director Wants from AI,” *Defense One*, September 6, 2017, Accessed March 25, 2021. <http://www.defenseone.com/technology/2017/09/cia-technology-director-artificial-intelligence/140801/>.

analyze and anticipate future actions in MDO.¹⁷ The ability to anticipate through AI provides better options in MDO, inflicting multiple dilemmas against near-peer adversaries. Another way to anticipate with AI is by using systems to recognize near-peer patterns of life and systemic patterns throughout all domains in large volumes of data and taking it to create a deep learning system.¹⁸ Army leaders who trust AI and future data mining systems facilitate predictive thinking to gain initiative against adversaries. However, a valid concern is leaders might put too much trust in AI; therefore, anticipation also involves tacit knowledge.¹⁹

Regarding an assumption that systems will generate perfect analysis, Army leaders will need to apply tactical and technical tacit knowledge of the OE concurrently to validate data if distrust occurs or systems are compromised. In addition, leaders will still need tacit knowledge to recognize non-codifiable human behaviors and experiences. Army leaders grow tacit knowledge through leadership attributes, diverse experiences, and training; however, knowledge varies in leaders. Therefore, by teaching Army leaders how to sense and recognize adversaries' actions efficiently, leaders will increase their ability to anticipate. The non-linear thinking empowers Army leaders to use tacit knowledge with core competencies to foster creative and innovative thinking to understand complexity.²⁰ Leaders who develop their ability to anticipate enable effective leadership in MDO, allowing leaders to gain the initiative on near-peers. However, anticipation is one characteristic of an MDO mentality; thus, it requires leveraging and perseverance to maximize the mindset potential.

¹⁷ Forrest E. Morgan et al, "*Military Applications of Artificial Intelligence: Ethical Concerns in an Uncertain World*," accessed 28 April 2020, https://www.rand.org/pubs/research_reports/RR3139-1.html.

¹⁸ Jerry Kaplan, *Artificial Intelligence: What Everyone Needs to Know*, (Oxford, UK: Oxford University Press, 2016), 8.

¹⁹ Forrest E. Morgan et al, "Military Applications of Artificial Intelligence: Ethical Concerns in an Uncertain World," April 28, 2020, https://www.rand.org/pubs/research_reports/RR3139-1.html

²⁰ Charles M.Vance, Kevin S. Groves, Yongsun Paik, and Herb Kindler, "*Understanding and Measuring Linear-NonLinear Thinking Style for Enhanced Management Education and Professional Practice*," (Academy of Management Learning & Education 6, no. 2 2007), 169, accessed March 23, 2021, <http://www.jstor.org.lumen.cgsccarl.com/stable/40214438>.

Leverage

The ability to leverage cognitively arranges capabilities and people to create cross-domain effects, where effects present multiple dilemmas to near-peer adversaries.²¹ Arguably leverage is similar to a characteristic of the offense, in which concentration is massing the effects of combat power in multiple domains to achieve a single purpose.²² However, the ability to leverage requires an understanding of means in multiple domains, not just the land domain, to enable leaders in all domains to deliver multiple dilemmas to achieve a range of military objectives if need be. Nonetheless, leveraging capabilities requires expert knowledge of how other domains function in time, space, and purpose. Two ways to fortify leveraging characteristics include increasing the knowledge of capabilities and people within multiple domains and having leaders serve in a multi-domain task force (MDTF) to expand experiences in multiple domains.

To shape the ability to leverage, military institutions offer a host of opportunities to teach Army leaders about all domains. All leaders attend some form of professional military education (PME). The 2013 *Army Leadership Development Strategy* states, “there are three components of developing leaders: training, education, and experience, supported through three domains operational, institutional, and self-development.”²³ Therefore, leaders can build their institutional multi-domain knowledge through joint and Army PME to cultivate a more diverse mentality. Furthermore, education and training allow leaders to fill gaps of operations within domains,

²¹ US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), GL-3.

²² US Department of the Army, Army Doctrine Publication (ADP) 3-90, *Offense and Defense* (Washington, DC: Government Publishing Office, 2019), 3-2.

²³ US Department of the Army, Deputy Chief of Staff, G3/5/7, *Army Leader Development Strategy* (ALDS), 2013, 11.

resulting in better integration of combat power, shared understanding, and unity of effort.

Thereby effectively leading in MDO by diverse thinking of employing assets and maximizing human potential.

Next, by serving in a multi-domain task force (MDTF), Army leaders will gain experience managing and employing various capabilities in MDO. Currently, there is one MDTF unit concept located at Joint Base Lewis-McChord in Tacoma, Washington, that replicates how the Army envisions joint-warfighting in the future battlefield against near-peer adversaries.²⁴ The MDTF has begun to participate in the Indo-Pacific area of operations, and Army Futures Command plans to add two more MDTF in Europe and another in the Pacific region.²⁵ In the MDTF, leaders can plan for intelligence, cyber, electronic warfare, and space operations for training exercises and test the effectiveness of the MDTF.²⁶ Moreover, by serving in a unit postured for MDO, Army leaders will better understand how to leverage other domains in the future OE. The experience training with other US military services in warfighter exercises will provide operational knowledge to increase leverage. However, if the opportunity to serve in an MDTF does not arise, training alongside MDTFs will still be a suitable way to increase familiarity with MDO. The combination of PME and firsthand experience is the optimal way to understand how to leverage multi-domains; thus, the Army must pursue both avenues for developing future effective leaders in MDO.

²⁴ Thomas Brading, “*Talent Management Key to Filling Future Specialized Multi-Domain Operations Units*,” Military, U.S. Indo-Pacific Command, 26 May 2020, accessed on January 20, 2021, <https://www.pacom.mil/Media/News/News-Article-View/Article/2197978/talent-management-key-to-filling-future-specialized-multi-domain-operations-uni/>.

²⁵ Jen Judson, “Multi-Domain Operations Doctrine Still a Few Years out, Says US Army Chief,” Military Defense, Defense News, October 15, 2020, accessed on February 10, 2021, <https://www.defensenews.com/digital-show-dailies/ausa/2020/10/15/multidomain-operations-doctrine-still-a-few-years-out-army-chief-says/>.

²⁶ Government Accountability Office, “Future Warfare: Army Is Preparing for Cyber and Electronic Warfare Threats, but Needs to Fully Assess the Staffing, Equipping, and Training of New Organizations Military Operations” (GAO-19-570), 2019, 15, accessed March 10, 2021, <https://www.gao.gov/assets/710/701033.pdf>.

Perseverance

In the leadership attribute presence, resiliency entails an implied notion that an adverse event must occur to become resilient. However, if an Army leader understands how to persevere through complex and challenging situations, they are not just resilient but mentally tough. As former Navy SEAL and top endurance athlete, David Goggins refers to it as “callous the mind.”²⁷ Through sheer drive and determination in tandem with emotional intelligence, the mind will become more robust and emotionally hardened. Goggins also refers to the “40% rule,” which means most people give up when they have only given 40% of their maximum potential.²⁸ Therefore, to unlock the remaining 60%, people must let go of any self-limiting factors by accepting uncertainty and persevering in what may seem the most demanding situations near-peer adversaries may present. Whether it may be China hacking into a government database or Russia attempting a *fait accompli* situation, an MDO mentality will enable an Army leader to sustain domain effects across the conflict continuum and competition.

Although there are associated timelines with conflicts depicted through but not limited to phase lines, tempo, and condition setting, MDO could be a limited and protracted form of war. Army leaders will need to have the mentality to persevere or encounter the risks of near-peer adversaries capitalizing on the disorientation of Army leaders. In other words, as John Boyd suggests, orientation is part of mentally isolating an opponent’s moral aspect.²⁹ At the same time, they are in paralysis from not being able to overcome multiple dilemmas. Therefore, exposure to stimulating, dynamic, and realistic training will enhance an MDO mentality and be less

²⁷ David Goggins, “*Can’t Hurt Me: Master Your Mind and Defy the Odds*,” (Lioncrest Publishing, 2018).

²⁸ Ibid., 210-211.

²⁹ John A. Boyd, *Discourse on Winning and Losing*, (Air University Press, Curtis E. LeMay Center for Doctrine Development and Education, Vol. 13, 2018), 157.

acceptable to multiple stressors. Moreover, the ability to persevere will enable leaders to continue pursuing operational and strategic aims dictated by dominating near-peer adversaries in multi-domains and not a specified time.

Leaders that develop an MDO mentality and combine it with leadership attributes and competencies will lead effectively in MDO. Therefore, teaching current Army leaders to anticipate near-peer actions, leverage capabilities and people throughout all domains, and preserve arduous situations is essential in MDO. Thereby, future Army leaders can provide dynamic solutions in the future operating environment; however, the MDO mentality in conjunction with the ALRM is how leaders will lead proficiently through complexity and uncertainty. Thus, as an MDO mentality proposes three additional characteristics to develop, the core leadership attributes and competencies must provide relevancy in MDO. Examining the Army's leadership theory and doctrine helps to understand which core attributes and competencies will be relative for MDO. Additionally, as MDO is simply operating in more than one domain to direct multiple dilemmas against near-peer adversaries, history provides information on former Army leaders and their key leadership characteristics favorable for MDO. Arguably, the MDO concept is not entirely a novel idea; it is "old wine in new bottles."³⁰

MDO is not exclusive to the future, as former Army commanders and military leaders have lead in MDO. Specifically, American history provides creditable examples of Army leaders' MDO mentality. From General George Washington in the Revolutionary War to General Stanley McChrystal in the Global War on Terrorism, past leaders present core attributes and competencies relevant to today and tomorrow's MDO. As Professor of Military and Naval History at Yale University, John Lewis Gaddis suggests, a historical view can help represent reality by shifting back from humility to mastery, enabling a person to turn complexity into

³⁰ Richard Hart Sinnreich, "Multi-Domain Battle: Old Wine in a New Bottle?," Lawton Constitution, October 30, 2016, accessed November 12, 2020, <http://www.swoknews.com/misccolumns/multi-domain-battle-old-wine-new-bottle>.

something comprehensible, first to oneself, then to others.³¹ Further, a central point is a diversity of US Army leaders who have led formations in MDO, such as Operation Overlord during the Normandy Campaign, Operation Chromite during the Battle of Inchon, and Operation Urgent Fury during the invasion of Grenada. Moreover, these operations to include many other operations provide a realistic understanding of possible core attributes and competencies worth developing and shaping for the inherent complexities of MDO.

General George Washington in Multi-Domain Operations

As a nation, America started MDO with the Revolutionary War; General George Washington highlights an MDO mentality within the maritime, land, information domains while also fostering civil-military relationships. Even with limited command experience regarding a large, sizeable force, the Commander-in-Chief, General George Washington's presence, mental agility, and perseverance led the Continental Army to a critical victory in Yorktown.³² The Revolutionary War unveils land and sea operations in concert with one another. For example, in 1781, ill-supplied and low morale Continental Army was on the verge of defeat after years of fighting.³³ After discovering a French fleet was sailing to the Chesapeake Bay, General George Washington's ambitious plan to fight the British in New York had to be changed. He produced a contingency plan that involved deception and reliance on the Franco-American Army.³⁴ Upon maneuvering from New York to Virginia, Washington purposely allowed a letter to get into the British's possession, detailing a false plan for an attack in New York, which was part of his information operation deception plan. During the Battle of Chesapeake Bay, with Rear Admiral

³¹ John Lewis Gaddis, *The landscape of history: How historians map the past*, (Oxford University Press, USA, 2004) 7.

³² Russell S. Perkins, "Yorktown Campaign," History, George Washington's Mount Vernon, accessed March 19, 2021, <https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/yorktown-campaign/>.

³³ Ibid.

³⁴ Patrick H. Hannum, "George Washington's 1781 Campaign Design Revealed," *Journal of the American Revolution*, (2018), accessed March 19, 2021, <https://allthingsliberty.com/2018/01/george-washingtons-1781-campaign-design-revealed/>.

François Joseph Paul de Grasse's French fleet's support, they defended the mouth of the bay against Admiral Sir Thomas Graves' British fleet, which enabled another French fleet to enter and control the bay, ultimately becoming a decisive event in the war.³⁵ The tactical victory at sea denied the British fleet the ability to supply reinforcements in Yorktown to support General Cornwallis.³⁶ Thus, General Washington could utilize the Chesapeake Bay for sustaining his land forces in Yorktown, ultimately leading to a strategic win at the Siege of Yorktown and the surrender of General Cornwallis. In the aftermath, General Washington famously wrote a letter to General Lafayette, the French aristocrat, that "no land force can act decisively unless it is accompanied by a Maritime superiority."³⁷ Thus, based on French Lieutenant General Rochambeau's maritime experience from the Seven Years' War, Washington leveraged Rochambeau's force to strike at a blow at a critical, decisive point.³⁸ Washington presents a strong sense of humility and judgment in the multi-national coalition against Cornwallis' forces. However, multi-domain operations throughout the Revolutionary War consisted of sea, land, and information domain. General Washington's ability to understand those domains created a compound effect against the British, setting the conditions for signing the Treaty of Paris, which ended the war in 1783. Further, though Washington was worried about the morale and health of the Continental Army, his perseverance after many losses in the war played a significant role in preserving the soldiers' morale and statesmen's endorsements.³⁹ Like Washington, Army leaders

³⁵ Alex Todd, "Battle of the Chesapeake," History, George Washington's Mount Vernon, accessed March 19, 2021, <https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/battle-of-the-chesapeake/>.

³⁶ Ibid.

³⁷ "From George Washington to Marie-Joseph-Paul-Yves-Roch-Gilbert du Motier, marquis de Lafayette, 15 November 1781," Founders Online, National Archives, accessed on February 20, 2021, <https://founders.archives.gov/documents/Washington/99-01-02-05092>

³⁸ Robert T. Arthur, "The Siege of Yorktown—1781-1862" (The Coastal Artillery School Press, Fort Monroe, VA, 1952) 7.

³⁹ Russell S. Perkins, "Yorktown Campaign," History, George Washington's Mount Vernon, accessed March 19, 2021, <https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/yorktown-campaign/>.

will need the leadership skills and characteristics capable of leveraging not three but all five domains at any given time or risk implications like the British forces. Moreover, since the Revolutionary War, fighting in MDO has increasingly become more challenging with new capabilities; but certain historical characteristics/attributes remain relevant.

Still, leadership development must prepare leaders for the operational environments' future adversities. Through analysis of the Army leadership theory and doctrine, the skill-approach model is the guiding theory that sets the foundation for ALRM; hence it validates the ALRM application in MDO.

III: Current Doctrine and Theory

Army leaders have the attributes and competencies that may be favorable for MDO, but the inverse is also true as operational assignments, institutional learning, and self-development vary in experiences and skills development.⁴⁰ However, specific attributes and competencies of the ALRM and the characteristics of an MDO mentality provide a cohesive way of leading in MDO. Moreover, the interrelationship between skills and characteristics fosters growth in Army leaders, which relies on the ALRM depicted through leadership core attributes and competencies. The origin for the ALRM reflects the skills approach theory made famous by American Psychologist Robert Katz, which bears the foundation for Army leadership doctrine as far back as 1948, Training Circular (TC) 6 *Leadership*. Additionally, the logic of the ALRM, as doctrine states, "ALRM is grounded in historical experience and determinations of what works best for the Army," meaning the model provides a holistic and proven approach to all leaders in the Army organization.⁴¹ The skills approach, in theory, examines three skill categories: the technical, human, and conceptual skills regarding developing Army leaders.

⁴⁰ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-15.

⁴¹ *Ibid.*, 1-15.

Although it would be most optimal to have leaders with a high skill level across each category in MDO, skills and qualities change over time in correlation with different leadership levels; thus, conceptual skills tend to be higher at the strategic level.⁴² High technical skills relate to the intellect attribute, evident in lower-enlisted soldiers and junior officers such as Second and First Lieutenants. The benefits of having strong technical skills in MDO provide relevant institutional knowledge and up-to-date specialized training. Human or interpersonal skill is the ability to understand others' feelings, attitudes, and motives and communicate clearly and persuasively, which gradually increases over time.⁴³ Human skills associate with the intellect attribute under interpersonal tact, where a leader's diverse skills and perspectives can help build cohesive teams in MDO.⁴⁴ Furthermore, conceptual skills involve good judgment, foresight, intuition, creativity, and the ability to find order in uncertainty; similarly, it falls under the intellect attribute.⁴⁵ Leaders must be able to harness complexity through critical and creative thinking while balancing inherent risk such as unintentional escalation of conflict against near-peers; thus, conceptual skills are a requirement in MDO. Though the skills approach has merit in developing leaders, it presents various degrees of leadership attributes and competencies among Army leaders. In theory, the skills approach supports the hierarchical nature of the Army rank structure in reference to shaping leaders; however, it poses the potential to underdevelop Army leaders in MDO. As the MDO concept highlights, MDO will challenge Army leaders to visualize and conduct maneuver in fundamentally new ways to defeat near-peer systems.⁴⁶ Despite the skill

⁴² Gary Yukl, *Leadership in Organizations* (Upper Saddle River, NJ: Prentice Hall, 2002), 148.

⁴³ Gary Yukl, *Leadership in Organizations*, (Upper Saddle River, NJ: Prentice Hall, 2002), 150.

⁴⁴ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-3.

⁴⁵ *Ibid.*, 149.

⁴⁶ US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 46.

approach model, it does validate the use of the ALRM sufficiently, confirming specific core attributes and competencies to be effective in MDO.

As professionals in the Army, leadership is the “activity of influencing people by providing purpose, direction, and motivation to accomplish the mission and improve organizations.”⁴⁷ MDO will assess how leaders influence vertically, laterally, and outside the organization. ADP 6-22 (2019) *Army Leadership and the Profession* explains how Army leaders presently think, act, and lead through attributes and competencies. Therefore, examining the Army leadership doctrine through an MDO perspective delineates the attributes and competencies necessary for MDO.

Army Doctrine Publications 6-22- Army Leadership and the Profession Analysis

As leader development continues to be an Army priority, understanding core attributes and core competencies are the two most important leadership development factors.⁴⁸ According to ADP 6-22 (2019) *Army Leadership and the Profession*, attributes are personal characteristics gained through experiences over time, while competencies are skills that can be trained and developed.⁴⁹ Furthermore, ADP 1-02 (2019) *Terms and Military Symbols*, characteristics refer to a feature or quality that marks a distinctive or representative function, such as providing motivation, building trust, and achieving results.⁵⁰ In comparison, skills reflect leadership actions’ the Army expects, including having moral attitudes, professional bearing, and making sensible decisions.⁵¹ As crucial as core attributes and competencies are for developing leaders,

⁴⁷ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 1-13.

⁴⁸ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-1.

⁴⁹ *Ibid.*, 1-15.

⁵⁰ *Ibid.*, 1-7.

⁵¹ *Ibid.*, 2-1, 3-2, 4-5.

certain leadership characteristics lean towards a garrison environment rather than MDO. For instance, the character competency outlines the Army Values and Warrior Ethos; both perhaps are Army cultural factors, which leaders and soldiers must embrace from day one of joining the Army. Moreover, the broad description of the presence attribute describes physical fitness, professional bearing, and humility. Although humility is key to adapting to MDO, physical fitness may not be as favorable in MDO. The MDO concept relies on leaders' technical and conceptual expertise, which implies a lesser priority to be physically fit.⁵²

The Army leadership doctrine ADP 6-22 (2019) *Army Leadership and the Profession* is a holistic, skills-based leadership development approach for Army leaders.⁵³ As one of the six roles doctrine plays for the development of military professionals is to “state and foster desirable traits in leaders and Soldiers,”⁵⁴ which speaks to the heart of Army leadership doctrine. As MDO is on the horizon for future operations against near-peer adversaries, Army leaders will be responsible for making decisions with many uncertainties and greater risks than the current operational environment. Therefore, Army leaders must question the validity, relevancy, and effectiveness of the leadership attributes and competencies concerning MDO. ADP 6-22 (2019) defines an *Army leader* as “anyone who assumed the role or assigned responsibility, who inspires and influences people by providing purpose, direction, and motivation to accomplish the mission and improve the organization.”⁵⁵ Nevertheless, to be an Army leader, there is an implied notion that leaders vary in scale and scope and differ in application and execution, which could hinder leading in

⁵² US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), x.

⁵³ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), v.

⁵⁴ US Department of the Army, Army Doctrine Publication (ADP) 1-01, *Doctrine Primer* (Washington, DC: Government Publishing Office, 2019), 1-2.

⁵⁵ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 1-13.

MDO. However, the doctrine does provide attributes and competencies that merit continual development for Army leaders in MDO.

Besides *ADP 6-22* (2019) providing a common lexicon, it presents a leadership framework through the Army Leadership Requirements Model (ALRM Figure 1). Although all-encompassing, the ALRM is not perfect and contains leadership gaps in skills and qualities for MDO.

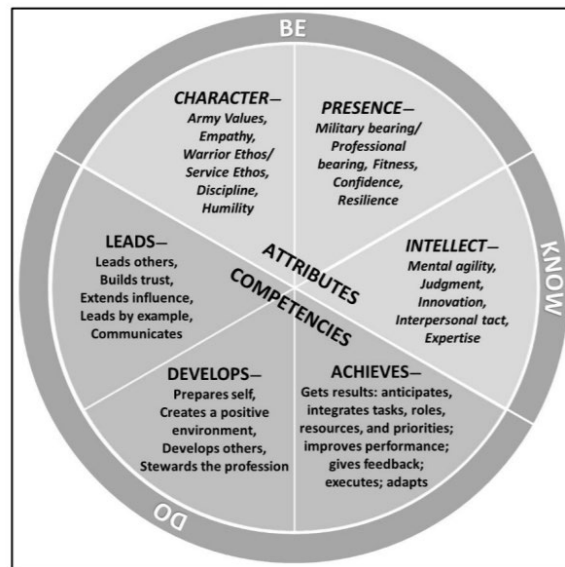


Figure 1-3. The Army leadership requirements model

Figure 2. The Army Leadership Requirements Model. US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 1-15.

The ALRM is divided into six components: character, presence, intellect, leads, develops, and achieves, with the purpose to inform leaders of the expectations for what they need to be, know, and do.⁵⁶ The overall assertion of Army leaders is descriptive rather than prescriptive on what leaders should be, know, and do; therefore, there must be a focus on attributes and competencies which matter most for MDO.

⁵⁶ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), vii.

IV. Core Attributes

Character

In MDO, near-peer adversaries will exploit a leader's moral and ethical decision-making abilities by creating false narratives of the US military violating international law, undermining operational and strategic objectives. Therefore, a leader's character, particularly empathy and humility, are important to strengthen for MDO. Character consists of moral actions and attitudes consisting of the Army Values, empathy, Warrior Ethos, discipline, and humility.⁵⁷ However, not all character attributes contribute to developing Army leaders for MDO. Army Values and the Warrior Ethos are ingrained into the Army culture and within Army leaders. Thus, leaders' expectations should not be to develop values and ethos, but to uphold and reinforce the standards, principles, and beliefs. However, as humans, mental models and culture create different interpretations, but leaders must always do what is morally and ethnically correct. Moreover, discipline can often be straightforward; a leader either has it or does not have self-discipline. A middle-ground does not exist in discipline, and the absence leads to taking the easier wrong than the harder right, which creates a rigid framework for leader development resulting in a vulnerability for Army leaders in MDO.⁵⁸

While the Army Values, Warrior Ethos, and discipline are not direct contributors to MDO, the empathy and humility qualities are favorable to developing an MDO mentality. Empathy affects ethical reasoning and ethical orders through the decision-making process, which is valuable for anticipation. According to doctrine, "empathy allows leaders to anticipate what others are experiencing and gives insight into how decisions will affect them," playing a role in

⁵⁷ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 2-1.

⁵⁸ *Ibid.*, 2-10.

ethical reasoning and the orders that follow.⁵⁹ One of the most prominent character attributes that will have an impact on MDO is humility. Army leaders' willingness to learn and seek feedback is highly viable in an environment of vast uncertainty. Humility informs a leader's limitations and abilities and initiates leveraging other domains to mitigate risks and vulnerabilities to accomplish the mission.⁶⁰ Army leaders who put themselves in experiences that increase their empathy and humility attributes will have a stronger character and awareness of the implications of MDO.

Presence

Military and professional bearing, confidence, and personal resilience are qualities of the presence attribute in Army leaders, including the fitness characteristic, possibly the most suitable for MDO. Leaders' confidence and experience may not be enough to endure the rigors inherent to MDO unless leaders focus on the fitness (mental and moral) aspect of the presence attribute.⁶¹ Former US Air Force (Ret.) Colonel and military theorist John Boyd defines mental as the emotional activity we generate to adjust to or cope with the physical world and defines moral as "cultural codes of conduct or behavior standards that constrain our thinking."⁶² Thereby fitness corresponds with the perseverance characteristic within the MDO mentality; when one increases, so does the other. Moreover, the complexity and uncertainty in MDO can disrupt a leader's presence if their mental capacity is unprepared for near-peer actions' in the cognitive dimension.⁶³ Subsequently, leveraging fitness through the mind against near-peer adversaries can

⁵⁹ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 2-8.

⁶⁰ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 2-11.

⁶¹ John R. Boyd, *A Discourse on Winning and Losing*, (Air University Press, Curtis E. LeMay Center for Doctrine Development and Education, 2018), 291.

⁶² Ibid.

⁶³ US Department of the Defense, Joint Staff, Joint Publications (JP) 3-13 CH I, *Information Operations* (Washington, DC: Government Printing Office, 2014), I-13.

get into what John R. Boyd calls the “OODA (observe-orient-decide-act) loop.”⁶⁴ Army leaders who have a fit mental state and healthy emotional intelligence, and robust physical stamina will have a better advantage in defeating adversaries’ moral-mental-physical dimensions in multiple domains.⁶⁵

Additionally, resilience has become almost a buzzword with the Army culture, mainly associated without overcoming hardships and Army Regulation 350-1 (2017), *Army Training and Leader Development*, periodical training. Which resilience is bouncing back from adversity, which poses fragility in one’s mind. Using the MDO mentality, leaders that anticipate near-peer actions in competition and conflict will be more resilient and better prepared for uncertainty and hardship. Though the ability to anticipate cannot always predict near-peer actions, it is a way to reduce adversity.

One quality of presence not worth developing in MDO, arguably, is the military and professional bearing. Like the Army Values, military and professional bearing are part of the Army culture and not something leaders should develop further for MDO. Military and professional bearing is the standard for everyone in the Army; anything less creates disorder. Regardless, Army leaders show presence with a discipline mentally able to withstand multiple dilemmas and complex situations in MDO.

Intellect

MDO will require maximizing human potential to increase the ability to see, understand, decide, and act before near-peer adversaries.⁶⁶ The intellect attribute and all its qualities are essential in MDO. Intellect attribute encompasses mental agility, sound judgment, innovation,

⁶⁴ John R. Boyd, *A Discourse on Winning and Losing*, (Air University Press, Curtis E. LeMay Center for Doctrine Development and Education, 2018), 384.

⁶⁵ *Ibid.*, 58.

⁶⁶ US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 19-20.

interpersonal tact, and expertise. The power of one's intellect will reflect through the ability to maximize human potential. The ability to think critically and creatively will generate innovation in the most complex problems. MDO mentality focuses on harnessing the expertise and diversity of human agility and competency.

Among the components of the intellect attribute, mental agility emerges above the other intellect characteristics. Concerning an MDO mentality, mental agility would be a foundation for gaining a diverse way of thinking. ADP 6-22 (2019) discusses the importance to adapt and think critically from multiple perspectives.⁶⁷ Complexity thrives in MDO, something which will challenge Army leaders' experiences and cognitive dimensions. Thus, building a flexible mind through experience, purposeful learning, and a growth mindset will provide leaders the power to extrapolate the root cause of a problem rather than symptoms.⁶⁸ Moreover, to isolate the main problem beneath a mound of compound issues and apply a solution to achieve the military aim is mental agility.⁶⁹ MDO mentality combines creative and critical thinking to tackle complexity, and mental agility is the ability to facilitate it.

Another component of the intellect attribute is sound judgment or the skill to make decisions timely. Sound judgment integrates a base of knowledge and experience to foreshadow as accurately as possible. A theme in MDO is the speed of decision-making will increase with the implementation of AI.⁷⁰ Thus, Army leaders will need to use their sound judgment and decision-making skills at a speed greater than the present day. Furthermore, sound judgment is

⁶⁷ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-1.

⁶⁸ Carol S. Dweck, "Mindset: The new psychology of success" (Random House Digital, Inc. 2008).

⁶⁹ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-1.

⁷⁰ Forrest E. Morgan, Benjamin Boudreaux, Andrew J. Lohn, Mark Ashby, Christian Curriden, Kelly Klima, and Derek Grossman, "*Military Applications of Artificial Intelligence: Ethical Concerns in an Uncertain World*," April 28, 2020, accessed 12/15/2020, https://www.rand.org/pubs/research_reports/RR3139-1.html.

an integral part of the mental agility to solve problems.⁷¹ However, the speed of decision-making in the future OE has an assumption that Army leaders place trust in artificial intelligence over human intelligence gathering abilities. MDO mentality enables sound judgment to occur while balancing AI with human cognition. Therefore, sound judgment is a necessary intellect quality to exercise while training Army leaders to acquire an MDO mentality.

Uncertainty in MDO will emphasize the requirement for innovative thinking to stay competitive with near-peer adversaries. *ADP 6-22 (2019)* describes innovation as “the ability to introduce or implement something new.”⁷² Also, innovation concerns being adaptive with existing approaches viewed from a unique perspective. Although Army leaders enforce rules and regulations, it should not deter innovation. As mentioned by then Lieutenant General Robert Brown, a young soldier was attending a baseball game and had noticed a live video feed broadcasting to monitors in every hotdog stand in the stadium; that same idea brought real-time feed technology into Stryker vehicles in Iraq.⁷³ Army leaders must find ways to foster innovation for subordinates and strive to provide innovation to MDO. The innovative foresight to utilize available resources validates an MDO mentality, whereby leveraging capabilities and people complements innovation.

As the primary land domain designator, Army leaders must be experts in the domain they primarily lead. However, space and cyber organizations are still in their infancy stages compared to the other domains; therefore, Army leaders will need to seek learning to understand how to leverage them. The quality of expertise outlines a general idea of the types of knowledge to lead in MDO effectively. Notably, tactical, technical, joint, and cultural knowledge must continuously

⁷¹ *Ibid.*, 4-2.

⁷² US Department of the Army, *Army Doctrine Publication (ADP) 6-22, Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-1.

⁷³ Bryce Hoffman, “How the Army Got Soldiers to Share Their Great Ideas.” *Forbes*, September 1, 2015, accessed on December 11, 2020, <https://www.forbes.com/sites/brycehoffman/2015/09/01/how-the-army-got-soldiers-to-share-their-great-ideas/>.

improve to gain in-depth knowledge in various areas.⁷⁴ Like the Japanese philosophy, *Kaizen* meaning striving to improve by focusing on the process rather than learning outcomes.⁷⁵

As aforementioned, the leadership attributes depend primarily on experiences to grow attribute skills. The three categories (character, presence, and intellect) of leadership attributes can serve a purpose(s) with an MDO mentality. However, not all sub-qualities within each category are favorable in MDO. Arguably, Army Values, Warrior Ethos, and military bearing are cultural elements and beliefs of the Army organization rather than leader attributes. Thus, the variation and degree of experiences diverge the quality and quantity of leaders' attributes. As the Army transitions to MDO, specific leadership attributes must be shaped through various experiences to obtain multi-disciplinary characteristics and an MDO mentality. Furthermore, as General Martin E. Dempsey displayed in 2014, his mental agility, strategic patience, and intuition were significant against the Islamic State of Iraq and Syria (ISIS).

General Martin E. Dempsey in Multi-Domain Operations

From a more recent perspective of MDO, West Point class of 1974, and US Army Command and General Staff College graduate (CGSC), General Martin E. Dempsey's role as Chairman of the Joint Chief of Staff (CJCS) during Operation Inherent Resolve offers a glimpse into a resource-constrained multi-domain environment. Although General Dempsey was fighting against a violent extremist organization and not near-peer adversaries, his actions in MDO displayed flexible leadership characteristics in a complex environment.

The momentum of ISIS in Northern Iraq in August of 2014 transitioned from a challenging situation to a convoluted state. In addition to ISIS' regaining territory in Northern Iraq, it had only been three years since US troops had led an offensive battle in Iraq, not since the

⁷⁴ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 4-4.

⁷⁵ Volkan Duran and Hüseyin Mertol, "Kaizen Perspective in Curriculum Development," *Asian Journal of Education and Training* 6, no. 3 (2020), 384-96. <https://doi.org/10.20448/journal.522.2020.63.384.396>.

surge of troops ended in 2011. During Operation Inherent Resolve (OIR), General Dempsey's leadership attributes of intellect and character were instrumental against ISIS. Moreover, his cultural knowledge enabled the US coalition forces to regain trust within a host of Iraqi partners to achieve a unity of effort. General Dempsey recognized the importance of his role and the intrinsic power of influence he could leverage.

By the time General Dempsey became the Chairman of the Joint Chiefs of Staff, he was aware of his diverse experience and knowledge of MDO. However, during August of 2014, his judgment and intuition to withhold a quick reaction against a mass number of ISIS fighters storming into Erbil, a Kurdish region, was crucial. The Peshmerga, an organization of Kurdish military forces, was not capable of withstanding about 400 ISIS fighters, as Dempsey recalls.⁷⁶ The situation was rapidly growing worse, and General Dempsey understood the risk associated with delaying a decision of the situation. In addition to the outnumbered Peshmerga, the unprepared Iraqi Army was not ready to fight due to internal organizational issues, embassy staff was hounding for action, and the media directly focused on the situation. As General Dempsey contemplated the options available, he also had to prepare to discuss the matters with President Obama and the rest of the defense staff within the hour of being notified. With no time to waste, he used his intellectual knowledge, experience, and judgment to generate his staff to create two presentation slides; one for the Peshmerga resources, mainly airpower, and the other slide on a plan to evacuate about a hundred US Consulate members. After a detailed brief framing the problem to the President, General Dempsey told himself, "only ask for what I needed at the moment," which asked for airpower to attack ISIS to support the Peshmerga along the Zab River.⁷⁷ After answering questions from the President, he approved the request, and immediately Dempsey called the Central Command (CENTCOM) headquarters and informed General Lloyd

⁷⁶ Martin E. Dempsey, *No Time for Spectators: The lessons that mattered the most from West Point to the West Wing*, (Missionday, 2020), 119-128.

⁷⁷ Ibid., 125.

Austin about the approval of airpower. Airpower employment minimized the risks and concerns of the Peshmerga forces, the embassy's apprehensions, and the media's worldwide coverage. Although airpower was not an innovative idea, air capability satisfied the military, diplomatic, and information domains. Moreover, the leadership experiences and skills grown over time led to thinking critically with a constrained timeline.

General Dempsey's experience with complexity and intellectual understanding of resources available allowed him to authorize the air, land, and sea components to support the Peshmerga. First, bombing ISIS's heavy weapons caches provided the Peshmerga forces a morale boost and increased the will to fight.⁷⁸ Though still numerically inferior to ISIS, Peshmerga forces continued to drive ISIS out of Northern Iraq and further hindering their tempo.⁷⁹ Next, the airpower helped disperse and disrupt ISIS' ability to mass forces. Lastly, US-led airstrikes sent a message to the world that ISIS would not be tolerated and uniting against them would bring a more stabilized Iraq. After strategic bombing operations on ISIS, a combined special operations task force fought alongside the Peshmerga and Iraqi military force; ISIS began to retrograde back to Mosul.⁸⁰ The airpower decision allowed the US Army to task organize CENTCOM to US Army Central Command (ARCENT), which became Coalition Joint Task Force-OIR (CJTF-OIR). In the fall of 2014, 1st Infantry Division arrived in Iraq to advise and assist the Iraq army, Iraqi air force, the federal police, and the Peshmerga forces to defeat ISIS in Iraq.⁸¹ Although the ISIS situation did not resolve in Iraq until 2017, General Dempsey's ability to have patience and assess the situation proved valuable in MDO, something that requires great

⁷⁸ Kenneth M. Pollack, "Iraq: Understanding the ISIS Offensive against the Kurds," Brookings, May 13, 2020, accessed November 10, 2020, <https://www.brookings.edu/blog/markaz/2014/08/11/iraq-understanding-the-isis-offensive-against-the-kurds/>.

⁷⁹ Ibid.

⁸⁰ Ibid., 127.

⁸¹ US Department of the Defense, Joint Staff, Joint Publications (JP) 3-31, *Joint Land Operations* (Washington, DC: Government Printing Office, 2019), V-3.

mental agility and fit mentally. Furthermore, he discusses in his book *No Time for Spectators* that when in a time of crisis, “allow leaders at every level to execute their judgment and discretion in solving problems” while balancing all domains in time, space, purpose, resource, and risk.⁸² Additionally, Dempsey’s attributes also highlight the characteristics of maintaining a civil-military relationship to allow military options to occur. The integrated approach empowers leaders a way to learn and anticipate the outcomes of their decisions.

V. Core Competencies

The leadership attributes represent the “be” and “know” of what an Army leader is by character, presence, and intellect. The leadership competencies describe the “do” of what an Army leader does through leading, developing, and achieving.⁸³ Moreover, the attributes explain the intrinsic characteristics, focusing on how leaders think, learn, and conduct themselves. However, from a pragmatic perspective, leadership competencies are action-oriented skills. Through the core leader competencies categories of leads, develops, and achieves, all supporting competencies are essential to the degree that will achieve the Army’s Operational Concept of Unified Land Operations in MDO.

Leads

As mentioned, MDO will challenge Army leaders’ ability to lead and dominate in competition and conflict against near-peer adversaries. The five sub-competencies include extending influence, building trust, leading by example, and communicating are skills under the lead competency. While each competency is essential in MDO, reasonably building trust, extending influence, and communicating will have a more profound emphasis. In contrast,

⁸² Ibid., 128.

⁸³ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 1-15.

leading others and leads by example are the fundamentals actions that will most likely receive minimal changes in MDO.

ADP 6-22 (2019) discusses building trust to create relations and encourage commitment among followers by way of experiences and shared understanding.⁸⁴ Moreover, trust transfers from the top of the chain of command down and laterally with other organizations. Thus, doctrine implies that building trust with leaders in other domains seeks to influence action and collaboration. Furthermore, Army leaders who facilitate trust will create a robust, cohesive relationship to enable unity of effort against near-peer adversaries. However, a significant concern does not exist in doctrine regarding trust and how Army leaders will approach trusting AI and robotics for decision-making and employment on the battlefield. The risk of leaders not trusting technology will produce possible implications in MDO, which can elevate due to leader fallacies. Whereas Goldsmith explains, success delusion occurs due to past successes that blind leaders' adeptness to take risks and challenges.⁸⁵ Changes in MDO will occur rapidly at a higher speed; therefore, Army leaders must pursue a different form of trust not stated in doctrine. The trust in technology and systems with a human in the loop will help mitigate the ethical and operational risks of using AI.⁸⁶ Leaders who apply trust in people and technology will understand how to leverage capabilities and skilled people throughout domains.

In addition to building trust, Army leaders must strive to extend influence beyond the chain of command to achieve unified action.⁸⁷ Building trust shapes the conditions for Army

⁸⁴ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 5-9.

⁸⁵ Marshall Goldsmith and Mark Reiter, *What Got You Here Won't Get You There: How Successful People Become Even More Successful*, (New York, NY: Hyperion, 2007), 15-16.

⁸⁶ Forrest E. Morgan, Benjamin Boudreaux, Andrew J. Lohn, Mark Ashby, Christian Curriden, Kelly Klima, and Derek Grossman, "Military Applications of Artificial Intelligence: Ethical Concerns in an Uncertain World," April 28, 2020, accessed 12/15/2020, https://www.rand.org/pubs/research_reports/RR3139-1.html.

⁸⁷ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 5-9.

leaders to form cohesive teams and coalitions external to the parent organization as a means of direct influence.⁸⁸ Moreover, Army leaders who embrace diverse cognition among people with various perspectives will help exploit near-peer weaknesses and lead effectively in MDO. According to *ADP 6-22 (2019)*, extending influence procures the grounds for future negotiations that incorporate multiple options to solve complex problems. Hence, an MDO mentality juggles a myriad of potential non-linear solutions; thus, Army leaders should apply indirect influence through negotiations as a tool to resolve competition and remain below conflict. Furthermore, leaders ought to balance direct and indirect ways of extending influence as MDO is fundamentally joint.

The art of articulating complexity to create a shared understanding is a skill that integrates clear situational awareness of the operating environment (OE) and effective communications techniques. Regardless of the OE, communication is critical to accomplish the military objective. Therefore, through a shared understanding, leaders engage in reciprocal feedback and dialogue to provide commanders feasible, acceptable, and suitable options for decision-making. In MDO, with simultaneous and sequential actions happening, a shared understanding frames how things operate in time, space, and purpose in a succinctly and digestible fashion. Competent and confident leaders encourage open and honest communication, which will help in developing an MDO mentality.

Develops

Army leaders must self-develop to build an adaptable persona to withstand the stress from uncertainty. The core leadership category of developing leaders includes four competencies: creating a positive environment, preparing self, developing others, and stewards of the profession. Arguably, most of the develops competencies are not specifically favorable to MDO. The develops competency is an ongoing action, responsibility, and duty to develop others

⁸⁸ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 5-10.

as Army leaders.⁸⁹ Which is focuses on developing subordinates to become Army leaders and stewards of the profession. Furthermore, creating a positive is an implied responsibility rather than a deliberate skill to develop. However, relating to MDO, *ADP 6-22* (2019) refers to preparing oneself by executing leadership responsibilities and improving technical and tactical expertise.⁹⁰ Therefore, preparing self as a leader for MDO is essential to leading in all levels of operations. Additionally, Army leaders gain intellectual capacity, critical and creative thinking abilities by studying doctrine and putting the information into context with personal experiences, military history, and geopolitical awareness, a form of self-preparation.⁹¹ Besides preparing self, the develops competency adheres to developing subordinates over current Army leaders; thus, preparing oneself is relevant to MDO.

Achieves

The purpose of leaders in MDO will not change; accomplishing the mission is the sole purpose of leaders; however, the way to conduct operations is a leader's decision. The leadership achieves competency outlines the essence of Army leadership and provides a general expectation of Army leaders. Getting results is the core competency that broadly covers the leadership category of achievement. Within *ADP 6-22* (2019), getting results focuses on consistent task accomplishment through leadership responsibilities.⁹² Though the achieve competency aligns Army leaders with a purpose, MDO is naturally non-linear with many solutions. Therefore, achieve competency has only a marginal impact in developing leaders for MDO. However, an essential and straightforward aspect of achieves is “all leaders understand that change is

⁸⁹ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 6-9.

⁹⁰ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 6-4.

⁹¹ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 6-2.

⁹² US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 7-3.

inevitable and must prepare organizations to adapt” to pursue objective(s).⁹³ Thus, achieving competency is not a significant contributor for Army leaders to be effective in MDO, nor does it combine well with an MDO mentality.

Overall, for Army leaders to effectively lead in MDO with an MDO mentality, the core competency of leads provides the most significant contributor for MDO. The ability to build trust, extend influence, and communicate proficiently is necessary for MDO. Army leaders must place trust systems and people to anticipate near-peer actions’, extend influence to leverage capabilities, and communicate throughout multiple domains seamlessly. Though the leads core competency meets the relevancy for MDO, it does not minimize the importance of the develops and achieves competencies. Those competencies are mainly Army cultural aspects and traditional organizational leadership practices found in commercial businesses.

Training and developing the specific core competencies will work simultaneously with experiences gained through core leadership attributes favorable to MDO. Thus, those enduring leadership attributes and competencies combined with an MDO mentality forges an Army leader to embrace the complexities of MDO. More importantly, there is a risk of under-developing Army leaders’ attributes and competencies, which will only benefit near-peer adversaries’ actions in MDO. However, proper development of Army leaders begins now for future MDO. As General Schwarzkopf presents, his leadership abilities in MDO, notably the Gulf War, presents an MDO mentality and relevant attributes and competencies for MDO.

General Norman Schwarzkopf in Multi-Domain Operations

As the Allied Forces Commander, General Schwarzkopf portrays a near-representation of how leaders should think in MDO. During the Gulf War, he led more than 800,000 military

⁹³ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 7-1.

personnel from 36 countries combined to include multi-national and friendly Armed Forces.⁹⁴ He dealt with a mixture of uncertainties and risk, consisting of the size of Iraqi forces and the use of chemical weapons. Also, Schwarzkopf would leverage the massive coalition force in an attempt to overwhelm the enemy. It was a way to overcome the potential one million men of the Iraqi Army—about 950,000 regulars, of which some 480,000 were reserve and new conscripts, and about 90,000 volunteers.⁹⁵ His experience will present the complexity and risks associated with MDO. Moreover, the ALRM, in concert with an MDO mentality, executed through multiple domains to accomplish the mission.

After over two decades of leading in the Army, General Schwarzkopf shaped a direct-style leadership and candid persona. Meaning direct-style leadership provides detailed instructions on how, when, and where a task performs, which has appropriate value when leading inexperienced individuals or teams.⁹⁶ He was an expert at understanding and describing the operational environment at all operational levels, from President George H. W. Bush, Chairman of the Joint Chiefs of Staff, General Powell, Secretary of Defense Cheney, and subordinate commanders down to the lowest level. After briefing the President and SECDEF, he outlined the plan to a selected number of Corps commanders and staff. Later on, General Yeosock, the 3rd Army Commander, and Lieutenant General Frederick M. Franks, Jr., VII Corps Commander, discussed various issues before Schwarzkopf's general plan brief.⁹⁷ The pre-brief allowed General Yeosock and his subordinate commanders to provide feedback to Operation Desert Storm before going against the Republican Guard Forces Command. Furthermore, in his

⁹⁴ US Department of the Army, Field Manual (FM) 100-5, *Operations* (Washington, DC: Government Printing Office, 1993), 5-1.

⁹⁵ Frank N. Schubert, *Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm*, (Government Printing Office, 1995), 135.

⁹⁶ US Department of the Army, Field Manual (FM) 6-22, *Army Leadership: Be, Know, Do* (Washington, DC: Government Printing Office, 1999), 3-16.

⁹⁷ Stephen A. Bourque, *Jayhawk!: The VII Corps in the Persian Gulf War*, Vol. 70. (Government Printing Office, 2002), 31.

autobiography *It Doesn't Take a Hero*, he explains how he deliberately laid out the complex set of events as clearly, concisely and, complete as possible during Desert Storm.⁹⁸ Schwarzkopf recalls on November 14th, 1990, in Dhahran, Saudi Arabia, he gave the “most important brief of the war” on a fifteen-foot-wide map of Kuwait and Iraq to outline the four phases of the war to over 22 generals and admirals.⁹⁹ The plan was well communicated; a subordinate commander later stated, “a mission that even privates could understand and one upon which they could all concentrate their efforts.”¹⁰⁰ After the brief, the commanders returned to their home stations and began their planning efforts, which lead to continued refinements to the plan, but the outline remained unchanged.¹⁰¹ By that account, he fostered shared understanding, meaningful communication, and mission command, which led to a unity of effort all factors essential to MDO. In addition to briefing the course of action, he provided leaders with the overall strategy’s risks and concerns: chemical weapons, the Iraqi force size, and a possible stalemate tactic by the Iraqi military. General Schwarzkopf’s ability to extend influence across multiple formations empowered multi-national leaders to execute an overly complex situation through a well-thought-out plan to achieve victory.

The so-called “big five” is where General Schwarzkopf’s MDO mentality was most evident. Interestingly, the Army’s current modernization efforts for MDO are analogous to the big five to overcoming the enemy’s capability and size. The factors of speed, survivability, and good communications were essential to economizing a smaller US force to defeat a larger Iraqi

⁹⁸ Norman H. Schwarzkopf, *It Doesn't Take a Hero: The Autobiography of General H. Norman Schwarzkopf*, (Bantam Books, NY, 1993), xi.

⁹⁹ Norman H. Schwarzkopf, *It Doesn't Take a Hero: The Autobiography of General H. Norman Schwarzkopf*, (Bantam Books, NY, 1993), 442.

¹⁰⁰ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Printing Office, 2006), 12-3.

¹⁰¹ Stephen A. Bourque, *Jayhawk!: The VII Corps in the Persian Gulf War*, Vol. 70. (Government Printing Office, 2002), 36.

Army.¹⁰² The big five consisted of the M1 Abrams tank, M2 Bradley infantry fighting vehicle, the Apache helicopter, Black Hawk helicopter, and the Patriot air defense missile. Schwarzkopf anticipated the Iraqi Army's actions through intelligence collection by staff. He understood how to offset the numerical superiority, likely chemical weapon employment, and possible stalemate by leveraging new technology.¹⁰³ The sequencing of assets from the Apache helicopters destroying the Iraqi radars; to the M1 Abrams tanks and M2 Bradley fighting vehicles defeating the Iraqi armored vehicles, the Black Hawks carried out the largest air assault mission in history and the Patriot protecting against any Iraqi missile fire. Schwarzkopf stated that "synchronize combat power and encourage leaders to exercise initiative, flexibility, and ingenuity on the battlefield" would be the key to winning.¹⁰⁴ His operational proficiency in leveraging the new equipment throughout multiple domains in time, space, and purpose was highly effective. First by strategically bombing key chemical sites, logistical infrastructure, and artillery positions, then gain air superiority, followed by bombing Iraqi battle position, and ending with a ground force offensive.¹⁰⁵ By the end of the offensive phase, the number of Iraqi military personnel captured, killed, wounded, and the number of equipment destroyed was vastly disproportionate to the US and allied forces. General Schwarzkopf's will to win against many unknown factors, over a year of planning and endless decision-making showed a powerful sense of perseverance. His MDO mentality proves how crucial it is to develop it for future MDO.

General Schwarzkopf's performance as an operational leader in MDO was pivotal in defeating a larger enemy force with a host of uncertainty. His ability as a leader to think critically

¹⁰² Ibid.

¹⁰³ US Department of the Army, TRADOC Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 45.

¹⁰⁴ Norman H. Schwarzkopf, *It Doesn't Take a Hero: The Autobiography of General H. Norman Schwarzkopf*, (Bantam Books, NY, 1993), 259.

¹⁰⁵ Norman H. Schwarzkopf, *It Doesn't Take a Hero: The Autobiography of General H. Norman Schwarzkopf*, (Bantam Books, NY, 1993), 444.

about complex problems that involved a high probability of catastrophic implications from possible chemical weapons, combined with the fourth-largest enemy force employment and a potential attrition warfare conflict, exemplifies effective leadership in MDO.

VI. Multi-Domain Operations Analysis on Army Leaders

Army leaders are bound to visualize and conduct maneuvers in fundamentally new ways to defeat near-peer adversaries in all domains.¹⁰⁶ Changes to leadership requirements were conducive to AirLand Battle, Full-Dimension Operations, and Counter-Insurgency; however, future leadership development remains barely touched as the MDO concept evolves. Possibly due to many unknowns remain MDO which may be hindering leadership development. The MDO concept describes the effects near-peer adversaries will have on the Army, referring to the buzzword statement “contest and deny in all domains across the EMS, and the information environment at extended distances.”¹⁰⁷ Thus, it overshadows any proposed leadership concepts or changes to the ALRM to overcome challenges. As the Army moves forward into modernization, specifically in space and cyberspace domains, Army leaders will need to learn how to capitalize on technology, capabilities, and communication systems; thus, an MDO mentality is necessary to develop. As near-peer threats persist their exploitation efforts, the US Army must be aware of the validity and relevancy of the ALRM as future problems in MDO will soon be many complex issues.

The future OE will be across all domains with the possibility of adversaries simultaneously and sequentially competing and conflicting against friendly forces, which creates an increasingly joint and multi-layered convergence. Army leaders must at minimum build trust, extend influence, and communicate competently. Regarding a modern battlefield, wars may no

¹⁰⁶ US Department of the Army, TRADOC Pamphlet 525-31-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 46.

¹⁰⁷ US Department of the Army, TRADOC Pamphlet 525-31-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Publishing Office, 2018), 46.

longer be land-warfare-centric; multi-layered domains will give new meaning to the deep, close, support, and consolidation area within the areas of operations (AO) in time, space, and purpose.¹⁰⁸ Therefore, MDO will require a joint effort and unified actions where collaboration with other services is critical in winning the nation's wars. For example, according to the *Journal of Strategic Security*, "to be successful, the Joint Force will need to engage in operations through all domains to capture data and process intelligence to identify malign actors and understand their intentions in order to counter the use of ideas, images, and violence designed to manipulate the United States and its allies."¹⁰⁹ Gestalt theory explains that the total is greater than the sum of its parts, referring to joint operations' interrelationship toward a common goal.¹¹⁰ The MDO concept relies on Army leaders to understand how to integrate various capabilities from all domains across the range of military operations. This implies leaders apply an MDO mentality to leverage as many joint assets authorized with organic capabilities to accomplish the overall strategic objectives.

Although joint leadership doctrine does not exist but should, the term leadership in joint operations briefly describes roles and responsibilities and nothing relating to developing leaders. Army leaders have the responsibility to contribute to joint operations through ULO. Also, commanders in joint operations "use leadership to maximize performance" by influencing and inspiring others to build a shared understanding.¹¹¹ Army leaders must combine courage, ethical leadership, judgment, intuition to facilitate effective decision-making in complex situations,

¹⁰⁸ US Department of the Army, Army Doctrine Publication (ADP) 3-90, *Offense and Defense*, (Washington, DC: Government Publishing Office, 2019), 2-15.

¹⁰⁹ Kevin D. Scott, *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World*, (Joint Chiefs of Staff Washington, DC 2016), 23.

¹¹⁰ Angela R. Febbraro, "Leadership and command", RTO technical report AC/323 (HFM-120) TP/225—Multinational Military Operations and Intercultural Factors (Les opérations militaires multinationales et les facteurs interculturels, 2008), 3-2.

¹¹¹ US Department of the Defense, Joint Staff, Joint Publications (JP) 3-0 CH I, *Joint Operations* (Washington, DC: Government Printing Office, 2017), II-1.

whereby gaining these attributes through training, education, and experience.¹¹² Therefore, joint operational experiences and knowledge are important to increasing the intellect attribute and leading competencies in Army leaders.

Implications of Near-Peer Actions on Army Leaders

The *National Security Strategy* (NSS) of 2017 and the *National Defense Strategy* (NDS) of 2018 discuss the impact of technology on national security, particularly highlighting artificial intelligence (AI). Although these evolving technologies and cyber capabilities are not exclusive to MDO, they will significantly impact Army leaders' ability to lead in MDO. Army leaders should be thinking about the breadth and depth of these emergent technologies through an MDO mentality. Although innovative technologies provide an advantage for leaders in MDO, the inherent risk and uncertainty it brings could be detrimental.

Artificial intelligence is presenting risks and opportunities to leaders at an emerging rate. In MDO, future Army leaders are more likely to be using some form of AI. Therefore, the ability to anticipate with AI will generate more options for Army leaders if they trust the system. This is why implementing an MDO mentality in Army leaders is imperative. As an Analyst in Advanced Technology and Global Security at the Congressional Research Service (CRS), Kelley Slayer states, "an artificial system that performs tasks under varying and unpredictable circumstances without significant human oversight, or that can learn from experience and improve performance when exposed to data sets."¹¹³ This definition presents a silent hazard behind AI because it assumes that the system is learning from accurate data and providing the correct information. The moment AI provides incorrect information to leaders, distrust will occur. Moreover, distrust

¹¹² Ibid., III-14.

¹¹³ Kelley M. Slayer, *Artificial Intelligence and National Security* Congressional Research Service Washington, DC: Congressional Research Service, 2020), 43, accessed 20 January 2021, <https://apps.dtic.mil/sti/pdfs/AD1107549.pdf>.

and frustration may slow the adoption of AI, which poses possible tension between leaders.¹¹⁴ However, as part of ALRM, ADP 6-22 (2019) highlights, Army leaders must stay abreast of technological advances and their applications, advantages, and requirements.¹¹⁵ Army leaders must gain knowledge in advanced technology to maximize the potential of an MDO mentality.

Regarding the assumption that technology will have zero defects, too much dependency on systems may likely result in increased risks in MDO. Robotics like AI provide benefits for MDO, but leaders must again be aware of the associated potential hazards and threats. Moreover, the moral and ethical challenges that may occur in conflict, possibly hindering Army leaders' character core competency.

Near-peer adversaries are also conducting R&D through different priorities. China focuses on advancing AI, and Russia is investing in robotics.¹¹⁶ Robotics can be controlled by humans or be autonomous and unmanned, thus bringing morality and ethics into question in MDO. Leaders will face decisions to place a soldier in harm's way or deploy a robot instead to fight against the enemy. The decision to replace a soldier with a robot is not new; however, it begs to ask whether leaders command autonomous robots or soldiers that control robots? Subsequently, who will be held accountable for making the wrong decision when human lives are lost. Leaders will need to understand the character of warfare will change with AI, robots, and autonomy. Thus, ALRM is crucial to shaping leaders to think virtuously about morality and ethics in MDO. As General Stanley McChrystal presents, his leadership abilities in MDO, particularly against Al-Qaeda in Iraq's (AQI), provides a blend of technology, the ALRM, and an MDO mentality operating coherently to achieve an objective.

¹¹⁴ Peter Stone, Rodney Brooks, Erik Brynjolfsson, Ryan Calo, Oren Etzioni, Greg Hager, Julia Hirschberg et al. *Artificial intelligence and life in 2030: the one hundred year study on artificial intelligence*, 2016, 42.

¹¹⁵ US Department of the Army, Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession* (Washington, DC: Government Publishing Office, 2019), 8-5.

¹¹⁶ *Ibid.*, Summary page.

General McChrystal in Multi-Domain Operations

By the time General Stanley McChrystal became the Commander of Joint Special Operations Task Force in 2006, he had accumulated a wide array of experience in MDO. However, his leadership development over his career enabled him to establish an adaptive leadership style.

In 2006, the complexity of AQI was a challenge that assessed General McChrystal's leadership abilities. AQI's unpredictable attack system throughout the Iraq War created multiple dilemmas for friendly forces and a problematic mission for General McChrystal.¹¹⁷ Through the use of social media to distribute propaganda, episodic suicide bombing, improvised explosive device tactics, and decentralization of networks, AQI was exceptionally demanding.¹¹⁸ Thus, the lack of understanding of leveraging IO as a weapon created unsuspected challenges to defeat AQI. To further complicate the non-linear tactical actions, the AQI leader, Abu Musab al-Zarqawi, operated beneath US sight and sensors in a very covert manner making the AQI network robust and complex. The technology was providing a non-state actor the ability to conduct low-cost warfare with a high-yield return. General McChrystal realized that an outdated approach, even well-executed was not sufficient against AQI's unpredictable behavior, thus upon reflection, he explains how "Iraq had only grown worse, showing no signs of yielding."¹¹⁹ However, General McChrystal decides to implement changes to the joint organization to enable a novel way to operate through a shared understanding, leveraging technology, and empowering subordinate leaders.

¹¹⁷ General Stanley McChrystal, Tatum Collins, David Silverman, and Chris Fussell, *Team of teams: New rules of engagement for a complex world*, (Penguin, 2015), 308-309.

¹¹⁸ Ibid.

¹¹⁹ General Stanley McChrystal, Tatum Collins, David Silverman, and Chris Fussell, *Team of teams: New rules of engagement for a complex world*, (Penguin, 2015), 174-175.

By May 2006, it had been over two and a half years and hardly any evidence of Zarqawi's whereabouts. However, US intelligence received information linking Zarqawi's spiritual adviser, Sheikh Abd al Rahman, to the AQI leader. Through a combination of humans and machines operating cohesively, US intelligence was able to locate Rahman. However, finding Rahman created multiple decisions and dilemmas for General McChrystal. First, to keep constant surveillance on Rahman, it required a host of dedicated ISR resources, which meant other Iraq missions had limited ISR access. As McChrystal recalls, while the war in Iraq had an increased number of US military casualties, the decision to pull ISR assets was difficult but necessary. Secondly, the decision to capture or monitor Rahman was an issue. McChrystal understood if US forces captured Rahman, Zarqawi could be alerted and flee to another hideout.¹²⁰ Next, it was unknown how long it would take to find Zarqawi through his Sheikh; it could take days or months. In this situation, it took seventeen days. Using a non-linear process of connecting possible locations and mapping potential targets coupled with layered intelligence collection analysis, General McChrystal leveraged intelligence to bridge gaps of knowledge and receive data more efficiently. Upon positive identifying Zarqawi, there was a small window of opportunity to strike the infamous Al-Qaeda leader.

McChrystal's MDO mentality shown through anticipating and leveraging cyber and space domain enabled the land and air forces to execute the long-awaited opportunity. With the limited time available, McChrystal understood how important it was to take advantage of the opportunity. He empowered his subordinate commanders to determine how the strike of Zarqawi would occur. McChrystal's ability to trust his subordinate commanders and staff created a shared understanding towards a common goal. The death of Zarqawi, as McChrystal explains, "was a

¹²⁰ General Stanley McChrystal, Tatum Collins, David Silverman, and Chris Fussell, *Team of teams: New rules of engagement for a complex world*, (Penguin, 2015), 308-310.

small piece of the puzzle, and the primary strategy was to hollow out the middle ranks of Al-Qaeda, which was where it was most connected.”¹²¹

General McChrystal made decisions faster through computing and sensor employment by applying technological tools while balancing the risk to force and mission in MDO. Also, it was evident that McChrystal exercised his intellect attribute by using ISR as a tool to achieve the military objective and implement an organizational structure that facilitated a valuable, shared understanding. General McChrystal’s ability to operate in the air, cyberspace, space, and land domains was imperative in eliminating a key high-value target. His mental fitness, perseverance, and humility were pivotal to eliminate Zarqawi and disintegrate the AQI network.

VII. Recommendations for Developing Future Army Leaders

After analyzing doctrine, the MDO concept, and former Army leaders in MDO, there are two recommendations for enabling effective leaders in MDO. The Army Leadership Development Strategy functions on the ends, ways, and means concept for the development process.¹²² Although it may present a linear process, leaders gain expertise through operational assignments, institutional learning, and self-development, varying in experiences and skills development.¹²³ The first is implementing multi-domain training and education in all centers of excellence for officers. Doctrinally speaking, Army leaders understand the land domain above the other domains. However, Army leaders need to become more intuitive thinkers of MDO. By teaching the junior officers to have an MDO mentality, they will be able to plan and resource for MDO to deny near-peer adversaries’ actions in competition and conflict effectively by the time they are field grades. Developing Army leaders will take time; therefore, education must start at

¹²¹ General Stanley McChrystal, Tatum Collins, David Silverman, and Chris Fussell, *Team of teams: New rules of engagement for a complex world*, (Penguin, 2015), 314.

¹²² US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-2.

¹²³ US Department of the Army, Field Manual (FM) 6-22, *Leader Development* (Washington, DC: Government Publishing Office, 2015), 1-15.

the beginning of their careers. By educating Army leaders, the core competencies relevant to MDO will increase, creating a more effective leader.

Additionally, through operational assignment, making every unit train against a red-team MDTF at the Combat Training Centers (CTC) on a bi-annual basis will expose leaders to possible near-peer actions in MDO. The training would need to involve threat actions in all domains to test how effective leaders are in a contested MDO environment. As one of the main principles of *FM 7-0, Training* (2019), “units must train as they fight.”¹²⁴ Therefore conduct MDO at the CTC is necessary for the readiness of the force. Since experience influences core attributes, training with or within an MDTF will increase the proficiency in leading in MDO.

Next, the ability to anticipate and leverage will increase through the ALRM, AI advancement, and joint operational assignments. However, Army leaders must experience uncertainty in a controlled environment to develop a higher degree of perseverance. Often in the Army, it is young leaders who attend physically demanding and mentally challenging schools. Infrequently is a mid-career Major attending the US Ranger School or US Special Forces Selection Training. Over time, the ability to persevere decreases due to the lack of training or experience. Therefore, all Army leaders must attend a modified Survival, Evasion, Resistance, and Escape (SERE) training. Reserved mainly for special operation personnel and US Army pilots, SERE training can provide cognitive benefits that will increase Army leaders’ ability to persevere. The training would occur twice in their career, first during the Basic Officer Leader Course and subsequently becoming a field grade officer. A modified SERE training will assess leaders’ will in uncertain situations. Although conducted in a controlled environment, adding various scenarios to provide multiple stressors simultaneously will assess a leader’s will to persevere.

¹²⁴ US Department of the Army, Army Doctrine Publication (ADP) 7-0, *Training*, (Washington, DC: Government Publishing Office, 2019), 3-1.

Regarding senior leaders' approval, they would deny it. However, training in a similar fashion is essential for hardening the mind, particularly for the complexity in MDO. Thus, an MDO mentality requires leaders to gain experience to embrace multiple dilemmas and reduce uncertainty.

VIII: Conclusion

The concept of multi-domain operations is not a novel idea; Army leaders of the past have shown many of the current Army leadership attributes and competencies prevailing in MDO. However, specific leadership characteristics within the ALRM may be more suitable for MDO than others. Subsequently, the ALRM, combined with developing an MDO mentality, enables effective leadership in MDO. The ability to anticipate near-peer actions, leverage capabilities and people, and preserve through complexity and uncertainty must be a priority in Army leader development. Army leaders must advocate for ways to educate and expose future leaders to the impact of risk and uncertainty in MDO.

Although near-peer adversaries continue to compete and remain below the threshold of conflict, US Army leaders must be aware of the adversaries' advancement in artificial technology, robotics, and future autonomous capabilities throughout MDO to dominate across the conflict continuum and competition. Most importantly, Army leaders must understand the value of building trust in people and systems to overcome adversities in MDO.

Lastly, an MDO mentality combined with the Army leadership attributes and competencies will enhance Army leaders' ability to lead in multi-domain operations effectively. Through professional military education, multi-domain task forces, and non-standard training, Army leaders can shape future leaders for the next major conflict. Army leaders' actions of today will define the words future Army leaders will say when operating in multi-domain operations. With the utmost importance, current leaders must continue to provide purpose, direction, and motivation to accomplish the mission and improve the organization for tomorrow's leaders.

Bibliography

- Allen, Greg, and Chan, Taniel. *Artificial intelligence and national security*. Cambridge, MA: Belfer Center for Science and International Affairs, 2017.
- Arthur, Robert T. “*The Siege of Yorktown—1781-1862.*” The Coastal Artillery School Press, Fort Monroe, VA, 1952.
- Connelly, Owen. *On War and Leadership: The words of combat commanders from Frederick the Great to Norman Schwarzkopf*. Princeton University Press, 2009.
- Boyd, John R. *A Discourse on Winning and Losing*. Air University Press, Curtis E. LeMay Center for Doctrine Development and Education, 2018.
- Brading, Thomas, “Talent Management Key to Filling Future Specialized Multi-Domain Operations Units.” Military, US Indo-Pacific Command, May 26, 2020. Accessed on January 20, 2021. <https://www.pacom.mil/Media/News/News-Article-View/Article/2197978/talent-management-key-to-filling-future-specialized-multi-domain-operations-uni/>.
- Bourque, Stephen Alan. *Jayhawk!: The VII Corps in the Persian Gulf War*. Vol. 70. Government Printing Office, 2002.
- Dempsey, Martin E. *No Time for Spectators: The lessons that mattered the most from West Point to the West Wing*. Missionday, 2020.
- Deszca, Gene, Cynthia Ingols, and Tupper F. Cawsey. *Organizational change: An action-oriented toolkit*. Sage Publications, 2019.
- Duran, Volkan, and Hüseyin Mertol. “Kaizen Perspective in Curriculum Development.” *Asian Journal of Education and Training* 6, no. 3. Asian Online Journal Publishing Group, 2020.
- Dweck, Carol S. *Mindset: The New Psychology of Success*. Random House Digital Inc., 2008.
- Febbraro, Angela R. “Leadership and command.” *RTO technical report AC/323 (HFM-120) TP/225—Multinational Military Operations and Intercultural Factors*. Les opérations militaires multinationales et les facteurs interculturels, 2008.
- Gaddis, John Lewis. *The landscape of history: How historians map the past*. Oxford University Press, 2004.
- Goggins David. *Can’t Hurt Me: Master Your Mind and Defy the Odds*. Lioncrest Publishing, 2018.
- Goldsmith, Marshall, Mark Reiter. *What Got You Here Won’t Get You There: How Successful People Become Even More Successful*. New York, NY: Hyperion, 2007.
- Government Accountability Office. GAO-19-570, *Future Warfare: Army Is Preparing for Cyber and Electronic Warfare Threats, but Needs to Fully Assess the Staffing, Equipping, and*

- Training of New Organizations Military Operations*. Washington, DC: Government Accountability Office, 2019. Accessed March 10, 2021. <https://www.gao.gov/assets/710/701033.pdf>.
- Hannum, Patrick H. “George Washington’s 1781 Campaign Design Revealed.” *Journal of the American Revolution*, 2018. Accessed March 19, 2021. <https://allthingsliberty.com/2018/01/george-washingtons-1781-campaign-design-revealed/>.
- Hoffman, Bryce. “How the Army Got Soldiers to Share Their Great Ideas.” *Forbes*, September 1, 2015. Accessed on December 20, 2020. <https://www.forbes.com/sites/brycehoffman/2015/09/01/how-the-army-got-soldiers-to-share-their-great-ideas/>.
- Judson, Jen. “Multi-Domain Operations Doctrine Still a Few Years out, Says US Army Chief.” *Defense News*, October 15, 2020. Accessed on February 10, 2021. <https://www.defensenews.com/digital-show-dailies/ausa/2020/10/15/multidomain-operations-doctrine-still-a-few-years-out-army-chief-says/>.
- Kahneman, Daniel. *Thinking, Fast and Slow*. Macmillan, 2011.
- Kaplan, Jerry. *Artificial Intelligence: What Everyone Needs to Know*. Oxford, UK: Oxford University Press, 2016.
- Keaveny, Valery C. and Fenzel, Michael R. “The area under the curve: Developing strategic leaders to win in a complex world. *Military Review* Vol 96, no. 6 (2016): 87.
- McChrystal, Stanley, Tantum Collins, David Silverman, and Chris Fussell. *Team of Teams: New rules of engagement for a complex world*. Penguin, 2015.
- Morgan, Forrest E., Benjamin Boudreaux, Andrew J. John, Mark Ashby, Christian Curriden, Kelly Klima, and Derek Grossman. *Military applications of artificial intelligence: ethical concerns in an uncertain world*. RAND Project Air Force, Santa Monica, CA, 2020.
- Northouse, Peter G. *Leadership: Theory and practice*. Thousand Oaks, CA: Sage, 2016, 16.
- Perkins, Russell S. “Yorktown Campaign.” *History, George Washington’s Mount Vernon*. Accessed March 19, 2021. <https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/yorktown-campaign/>.
- Pollack, Kenneth M. “Iraq: Understanding the ISIS Offensive Against the Kurds.” Brookings. May 13, 2020. Accessed November 10, 2020. <https://www.brookings.edu/blog/markaz/2014/08/11/iraq-understanding-the-isis-offensive-against-the-kurds/>.
- Schön, Donald A. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*, 1 ed. San Francisco: Jossey-Bass Publishers, 1990.
- Schubert, Frank N. *Whirlwind War: The United States Army in Operations Desert Shield and Desert Storm*. Government Printing Office, 1995.

- Schwarzkopf, Norman. *It Doesn't Take a Hero: The Autobiography of General H. Norman Schwarzkopf*. Bantam Books, NY, 1993.
- Scott, Kevin D. *Joint Operating Environment 2035: The Joint Force in a Contested and Disordered World*. Joint Chiefs of Staff Washington United States, 2016.
- Sinnreich Richard Hart. "Multi-Domain Battle': Old Wine in a New Bottle?" *Lawton Constitution*, October 30, 2016. Accessed November 12, 2020.
<http://www.swoknews.com/misccolumns/multi-domain-battle-old-wine-new-bottle>.
- Slayer, Kelley M. *Artificial Intelligence and National Security*. Congressional Research Service Washington, DC: Congressional Research Service, 2020. Accessed 20 January 2021.
<https://apps.dtic.mil/sti/pdfs/AD1107549.pdf>.
- Stone, Peter, Rodney Brooks, Erik Brynjolfsson, Ryan Calo, Oren Etzioni, Greg Hager, Julia Hirschberg, Shivaram Kalyanakrishnan, Ece Kamar, Sarit Kraus, and Kevin Leyton-Brown. Artificial intelligence and life in 2030. *One Hundred Year Study on Artificial Intelligence: Report of the 2015-2016 Study Panel*. Stanford University, September 2016.
- Taleb, Nassim Nicholas. *Antifragile: Things that gain from disorder*. Random House Incorporated, 2012.
- Todd, Alex. "Battle of the Chesapeake." *History, George Washington's Mount Vernon*. Accessed March 19, 2021. <https://www.mountvernon.org/library/digitalhistory/digital-encyclopedia/article/battle-of-the-chesapeake/>.
- Tucker, Patrick. "What the CIA's tech director wants from AI." *Defense One* (2017). Accessed March 25, 2021. <http://www.defenseone.com/technology/2017/09/cia-technology-director-artificial-intelligence/140801/>.
- US Department of the Army, Deputy Chief of Staff, G3/5/7, *Army Leader Development Strategy* (ALDS). Washington, DC: Government Publishing Office, 2013.
- US Department of the Army. Army Doctrine Publication (ADP) 6-22, *Army Leadership and the Profession*. Washington, DC: Government Publishing Office, 2019.
- . Army Doctrine Publication (ADP) 1-01, *Doctrine Primer*. Washington, DC: Government Publishing Office, 2019.
- . Army Doctrine Publication (ADP) 3-0, *Operations*. Washington, DC: Government Publishing Office, 2019.
- . Army Doctrine Publication (ADP) 3-90, *Offense and Defense*. Washington, DC: Government Publishing Office, 2019.
- . Army Doctrine Publication (ADP) 6-0, *Mission Command*. Washington, DC: Government Publishing Office, 2019.

- . Army Doctrine Publication (ADP) 7-0, *Training*. Washington, DC: Government Publishing Office, 2019.
- . Field Manual (FM) 6-0, *Command and Staff Organization and Operations*. Washington, DC: Government Printing Office, 2014.
- . Field Manual (FM) 6-22, *Leader Development*. Washington, DC: Government Publishing Office, 2015.
- . Field Manual (FM) 6-22, *Leader Development*. Washington, DC: Government Publishing Office, 2015.
- . Field Manual (FM) 22-100, *Army Leadership: Be, Know, Do*. Washington, DC: Government Printing Office, 1999.
- . Army Regulation (AR) 350-1, *Army Training and Leader Development*. Washington, DC: Government Publishing Office, 2017.
- . Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The US Army in Multi-Domain Operations 2028*. Washington, DC: Government Publishing Office, 2018.
- US Department of Defense. Joint Staff, Joint Publications (JP) 3-13, *Information Operations*. Washington, DC: Government Printing Office, 2014.
- US Department of Defense. Joint Staff, Joint Publications (JP) 3-30, *Joint Operations*. Washington, DC: Government Printing Office, 2019.
- US Department of Defense. Joint Staff, Joint Publications (JP) 3-31, *Joint Land Operations*. Washington, DC: Government Printing Office, 2019.
- Vance, Charles M., Kevin S. Groves, Yongsun Paik, and Herb Kindler. “Understanding and measuring linear–nonlinear thinking style for enhanced management education and professional practice.” *Academy of Management Learning & Education* 6, no. 2 (2007):169. Accessed March 23, 2021.
<http://www.jstor.org.lumen.cgscarl.com/stable/40214438>.
- Woods, Kevin M. and Greenwood, Thomas C. “Multidomain Battle: Time for a Campaign of Joint Experimentation.” *National Defense University Press*. Accessed November 14, 2020. <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/1411615/multidomain-battle-time-for-a-campaign-of-joint-experimentation/>.
- Yukl, Gary. *Leadership in Organizations*. Upper Saddle River, NJ: Prentice Hall, 2002.
- “From George Washington to Marie-Joseph-Paul-Yves-Roch-Gilbert du Motier, marquis de Lafayette, 8 March 1781.” *Founders Online*. National Archives. Accessed on February 20, 2021. <https://founders.archives.gov/documents/Washington/99-01-02-05092>.