

Thinking Beyond the Point of Contact

A Monograph

by

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Abstract

Thinking Beyond the Point of Contact, by MAJ M.G. Maurais, 50 pages.

This monograph explores the hypothesis that a dogmatic focus on tactics inhibits the commander's understanding in the context of a more information-centric, cognitive operational environment and prevents the development of an internally coherent and externally relevant operational approach. It seeks to understand the cognitive limitations of the current paradigm, to propose that it risks relevancy in competition, and to demonstrate the importance of thinking beyond the point of contact within the contemporary context. This monograph is divided into three sections, the first of which seeks to understand the origin of the current paradigm and its internal logic. The second section seeks to demonstrate the limitations of the current paradigm within a contemporary context and the resulting risk to external relevance. The third section considers a need to adapt the US Army's mode of thinking to re-establish equilibrium between theory, doctrine, practical experience, and context to create a context-based paradigm.

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Abbreviations

CAC	Common Access Card
CGSC	Command and General Staff College
DA PAM	Department of the Army Pamphlet
FM	Field Manual
IBM	International Business Machines
MIT	Massachusetts Institute of Technology
NDS	National Defense Strategy
NMS	National Military Strategy
NSC	National Security Council
NSS	National Security Strategy
OSD	Office of the Secretary of Defense
WWII	World War II

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Understanding the Problem: Understanding is the Problem

Viewing the channelized Missouri at the wildlife refuge, caged straight lines of broken rocks, made our beliefs about nature all the more ironic, because the Missouri we had created was the realization of what we believed nature was like before we altered it.

—Daniel B. Botkin, *Our Natural History: The Lessons of Lewis and Clark*

Commanders play the most important role in contemporary US Army doctrine, and they are the primary driving force behind the employment of operational art through their understanding of the operational environment and visualization of their operational approach.¹ The centrality of the commander was a core concern for doctrine writers during a revision of the US Army’s capstone doctrinal publication, FM 3-0, *Operations*, in 2012.² One of the key additions made to doctrine during that revision was the insertion of the commander’s understanding into their role in the operations process.³

Understanding the operational environment became a prerequisite to a commander developing a visualization for their operational approach, and it remains as such in current doctrine.⁴ The commander’s operational approach describes ways to use available means to change the current conditions of the operational environment into a desired future state, and operational art is the process through which commanders and their staffs develop an operational approach.⁵ The current doctrine affirms the cognitive nature of operational art and the role of

¹ US Department of the Army, Field Manual (FM) 3-0, *Operations* (Washington, DC: Government Printing Office, 2018), 1-20.

² Colonel (Retired) Steve Leonard, “The Third Rail” (lecture, School of Advanced Military Studies, Fort Leavenworth, February 10, 2020).

³ US Department of the Army, Army Doctrine Publication (ADP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2012), 2.

⁴ US Department of the Army, Army Doctrine Publication (ADP) 5-0, *The Operations Process* (Washington, DC: Government Printing Office, 2019), 1-8.

⁵ US Department of the Army, Army Techniques Publication (ATP) 5-0.1, *Army Design Methodology* (Washington, DC: Government Printing Office, 2012), 5-1.

commanders and staffs in its employment. FM 3-0, *Operations*, specifies knowledge and experience as two important components of the cognitive process.⁶

Contemporary US Army officers' knowledge and experience are grounded in a tactical conception of combat and competition from a capabilities-based paradigm. A paradigm is the accepted theory of phenomena that frames thinking about how to act within a given context.⁷ The US Army's reliance on Carl von Clausewitz as a foundational theory of phenomena for war prepares leaders to think in industrial-age terms that characterize victory as the annihilation of an enemy's forces.⁸ Samuel Huntington's theories refine Clausewitzian concepts concerning the relationship between the military and the state to guide a professional ethic of objective control that limits military leaders' responsibility for the development of strategic aims and political objectives.⁹ US Army doctrine is written by practitioners within the resultant worldview and constitutes a theory of action derived from observation and experience of accepted theory of phenomena.¹⁰ A Huntingtonian lens filters the application of military theory primarily to the tactical level of war.

The US Army further ensures a tactical focus through its officer professional development model. Officers are selected for promotion to general officer because of their success in tactical commands. They typically only have a few years of experience above tactical echelons when they are promoted, and they usually do not have their first experience above a tactical echelon until after their Intermediate Level Education experience.¹¹ The combination of a

⁶ US Army, FM 3-0, 1-19.

⁷ James N. Rosenau, "Thinking Theory Thoroughly," in *The Scientific Study of Foreign Policy*, ed. James N. Rosenau. (London: Frances Pinter, 1980), 33.

⁸ Carl von Clausewitz, *On War*. ed. and trans. Peter Paret and Michael Howard (Princeton: Princeton University Press, 1976), 92.

⁹ Samuel Huntington, *The Soldier and the State* (Cambridge, MA: Harvard University Press, 1957), 83.

¹⁰ Norman Maclean, *Young Men & Fire* (Chicago: University of Chicago Press, 1992), 300-309.

¹¹ US Department of the Army, "General Officer Management Office," accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

Huntington-filtered theory of the phenomena of war, an institutional theory of action codified in doctrine, and practical experience foster a capabilities-based paradigm that concentrates commanders' attention on tactical actions. As one senior leader emphasized, platoon-level maneuver and winning "at the point of contact," were their most urgent concerns.¹² This downward focus within a more complex context creates a cognitive gap between what is observed and what has changed, and discerning the difference becomes increasingly difficult to overcome.¹³

The author proposes that a dogmatic focus on tactics inhibits the commander's understanding in the context of a more information-centric, cognitive operational environment and prevents the development of an internally coherent and externally relevant operational approach. Furthermore, the US Army's current paradigm risks relevancy in the contemporary context because adversaries have adapted their theory of action to a human-centered Information Age. This monograph seeks to understand the cognitive limitations of the current paradigm, to propose that it risks relevancy in competition, and to demonstrate the importance of thinking beyond the point of contact within the contemporary context.

This monograph is divided into three sections, the first of which seeks to understand the origin of the current paradigm and its internal logic. This section begins with a discussion concerning the definition and significance of a paradigm, as described in *The Structure of Scientific Revolutions* by Thomas Kuhn. It then constructs a narrative from key theoretical and doctrinal decisions made in the wake of the US Army's experience in Viet Nam to give readers an understanding of the relevant context and its significance in shaping those decisions.¹⁴ A discussion of the role of theory of phenomena in the creation of a theory of action follows the

¹² General Michael X. Garrett (remarks to School of Advanced Military Studies, Fort Leavenworth, KS, January 7, 2020).

¹³ Zvi Lanir, *Fundamental Surprises* (Remat Aviv, Israel: Center for Strategic Studies, 1983), 14.

¹⁴ John Lewis Gaddis, *The Landscape of History: How Historians Map the Past* (Oxford: Oxford University Press, 2004), 3.

historiography.¹⁵ It essentially illustrates that how the US Army broadly thought about war significantly framed how individuals perceived their role in its conduct. The section concludes with an analysis of the biographical data of sixty-two current three- and four-star US Army general officers to demonstrate that the current paradigm emerges from its theory of war and politics, the application of the theory through doctrine, and the practical experience of the US Army officer corps.

The second section seeks to demonstrate the limitations of the current paradigm within a contemporary context and the resulting risk to external relevance. This section begins with an explanation of the Fourth Industrial Revolution, which was identified by Dr. Klaus Schwab as being a cascading series of technological and informational changes so significant that it is distinct from previous historical eras. The focus of the discussion is the dramatic ongoing and potential sociological shifts caused by exponential technological development.¹⁶ Then it explores Soviet theories of phenomena and action to demonstrate how they evolved alongside the American paradigm in the 1970s and 1980s. Drs. Vladimir and Victorina Lefebvre's *Reflexive Control: The Soviet Concept of Influencing an Adversary's Decision Making Process* describes the concepts Soviet military theorists were developing and their adaptability to the Information Age.¹⁷ This section concludes with a discussion of the relevancy of a Huntingtonian lens in the contemporary context and its continuing impact on US Army officers' practical experience. Consequently, readers will become aware of the gap between what the US Army's current paradigm deems relevant and what is relevant within context.

The third section considers a need to adapt the US Army's mode of thinking to re-establish equilibrium between theory, doctrine, practical experience, and context to create a

¹⁵ Chris Argyris and Donald A. Schön, *Organizational Learning: A Theory of Action Perspective* (Reading, MA: Addison-Wesley, 1978), 10.

¹⁶ Klaus Schwab, *The Fourth Industrial Revolution* (New York: Crown Business, 2016), 1.

¹⁷ Vladimir A. Lefebvre and Victorina D. Lefebvre, *Reflexive Control: The Soviet Concept of Influencing an Adversary's Decision Making Process* (Englewood, CO: Science Applications, 1984), 12.

context-based paradigm. An operational approach possesses an internal logic that links the elements of operational art and gives them coherence. It also interacts with an external context and adversarial operational logic and must be relevant to them to achieve its desired effects. The concepts of internal coherence and external relevance are examined through the metaphor of architecture to describe how operational commanders and senior military leaders' understanding can be improved through systems thinking. This section seeks to provide a synthesis of the preceding sections. It advances a human and information-centric, context-based alternative for the tactical, capabilities-based paradigm described in the first section.

This monograph adheres to a multidisciplinary approach to explore concepts and develop its hypothesis. Philosophy is included to give it theoretical cohesion. Dr. Thomas Kuhn was an American philosopher of science, member of the Harvard Society of Fellows, and professor at Princeton University. His work *The Structure of Scientific Revolutions* provides this monograph with its central argument for the existence of an American paradigm for conflict and the US Army's experience of a paradigmatic crisis in a changed context.¹⁸

This sense of crisis is illustrated in philosopher and cognitive scientist Dr. Zvi Lanir's *Fundamental Surprises*, which describes how organizations develop their understanding of the operational environment and identify gaps between observation and reality.¹⁹ Dr. Donald A. Schön's *Educating the Reflective Practitioner* advocates for the importance of reflective practice as an epistemological process that can mitigate these phenomena. It is included in this monograph to explain the importance of practical experience in the formation and adaptation of an individual's paradigm.²⁰

¹⁸ Thomas S. Kuhn, *The Structure of Scientific Revolutions* (Chicago: University of Chicago Press, 1970), 46.

¹⁹ Lanir, 12.

²⁰ Donald A. Schön, *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions* (San Francisco: Jossey-Bass, 1987), 22.

The disciplines of sociology and cognitive psychology explain the patterns of thought and behavior for individuals and groups, and this illuminates the importance of self-awareness and organizational sensemaking to developing the commander's understanding of the operational environment. Sociologists Peter Berger and Thomas Luckmann's work *The Social Construction of Reality* is included for its constructivist explanation for an individual's fundamental beliefs about reality.²¹ Psychologist Daniel Kahneman's work *Thinking, Fast and Slow* explores an individuals' susceptibility to cognitive biases when thinking about this reality.²² The resultant cognitive blind spots and uncertainty affect decision-making capacity, as explained in *The Logic Of Failure* by psychologist Dietrich Dörner.²³

The disciplines of history and military theory provide an overarching context within which ideas about operational art and strategy were developed and provide examples of success and failure to move the monograph's central premise in a practical direction. Historians were selected for their works spanning the length of the Cold War period, which is of primary interest to this monograph as the roots of the US Army's current paradigm. Military theorists were selected to provide context for the accepted theory of phenomena of the current paradigm and evaluate its contemporary relevance.

Some are included for their theoretical insights into the nature of history and sensemaking. Another group of historical literature is represented by grand sweeping history while others are specifically focused on historical events. For example, Dr. John Lewis Gaddis is an American historian and military and naval history professor at Yale University. His work *Strategies of Containment* is notable for its comprehensive account of US Cold War military

²¹ Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality: A Treatise in the Sociology of Knowledge* (New York: Doubleday, 1966), 22.

²² Daniel Kahneman, *Thinking, Fast and Slow* (New York: Farrar, Straus and Giroux, 2011), 80.

²³ Dietrich Dörner, *The Logic of Failure: Why Things Go Wrong and What We Can Do to Make Them Right* (New York: Metropolitan Books, 1996), 104.

strategy.²⁴ *The Landscape of History* is included for its explanation of how historians create representations of past events for current audiences, and it is relevant to this discussion because it allows the reader to connect specific historical events to a broader narrative.²⁵

T.R. Fehrenbach was an American historian and former head of the Texas Historical Commission. His work *This Kind of War* provides context for the early events of the Cold War and offers commentary on the readiness of the United States to engage in an ideological struggle at the outset of the Korean War.²⁶ Following the armistice in 1953, Dr. Robert Bowie served as the US State Department's Director of Policy Planning during the Eisenhower Administration. He and Dr. Richard Immerman wrote *Waging Peace: How Eisenhower Shaped an Enduring Cold War Strategy*, which is included for its account of the processes and inputs that resulted in NSC 162/2. This helps provide context for US strategic decisions at the recognized beginning of the Cold War.²⁷

The threat of nuclear weapons use was important to NSC 162/2, and Dr. Bernard Brodie's *Strategy in the Missile Age* articulates their impact on the US government's containment strategy.²⁸ Dr. Michael Burleigh is a British historian and former professor at Oxford, the London School of Economics, and Stanford. His work *Small Wars, Faraway Places* is included for its specific focus on limited conflicts in an era dominated by nuclear deterrence strategy.²⁹ It is relevant in this discussion because it was in a limited conflict that the US experienced strategic

²⁴ John Lewis Gaddis, *Strategies of Containment: A Critical Appraisal of American National Security Policy During the Cold War* (Oxford: Oxford University Press, 2005), 4.

²⁵ Gaddis, *Landscape*, 3.

²⁶ T.R. Fehrenbach, *This Kind of War: The Classic Korean War History* (New York: Macmillan, 1963), 18.

²⁷ Robert R. Bowie and Richard H. Immerman, *Waging Peace: How Eisenhower Shaped an Enduring Cold War Strategy* (Oxford: Oxford University Press, 1998), 187.

²⁸ Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1967), 223.

²⁹ Michael Burleigh, *Small Wars, Faraway Places: Global Insurrection and the Making of the Modern World, 1945-1965* (New York: Viking, 2013), 460.

failure, as captured in *The Rise and Fall of the Great Powers* by Yale University professor Dr. Paul Kennedy.³⁰

US Army Center of Military history researchers Graham Cosmas, Michael Krause, R. Cody Phillips, and Clayton R. Newell present a semi-official narrative of historical events and theoretical and doctrinal changes in the US Army during and after Viet Nam. Their works, *MACV: The Joint Command in the Years of Escalation, 1962-1967*, *MACV: The Joint Command in the Years of Withdrawal, 1968-1973*, *Historical Perspectives of the Operational Art*, and *On Operational Art* are used to provide an internal perspective of the US Army's experience in Viet Nam and changes to theory and doctrine following its withdrawal. The account of these changes is complimented by US Army Field Artillery School researcher Boyd L. Dastrup. His work *Modernizing the King of Battle* represents a semi-official narrative of the US Army's modernization efforts following the Viet Nam War.³¹

Dr. Lawrence Freedman is Emeritus Professor of War Studies at King's College London, former head of the War Studies Department, official historian of the Falklands War, and Fellow of the British Academy. His work *Strategy: A History* provides an external perspective of theoretical and doctrinal changes during and after Viet Nam alongside the US Army Center of Military History's narrative.³² Dr. Russell Weigley was a military historian and Distinguished University Professor of History at Temple University. He is most known for being the first to hypothesize a uniquely American Way of War. His work *The American Way of War* is included in this monograph for its importance in understanding war and strategy in an American context.³³

³⁰ Paul Kennedy, *The Rise and Fall of the Great Powers* (New York: Vintage Books, 1987), 405.

³¹ Boyd L. Dastrup, *Modernizing the King of Battle* (Washington: US Army Center of Military History, 2003), 12.

³² Lawrence Freedman, *Strategy: A History* (New York: Oxford University Press, 2013), 201.

³³ Russell F. Weigley, *The American Way of War: A History of United States Military Strategy and Policy* (Bloomington: Indiana University Press, 1973), xxii.

Brigadier General (Retired) Dr. Shimon Naveh is a retired Israeli general officer and co-founder of the Operational Theory Research Institute, National Defense College of Israel. His work *In Pursuit of Military Excellence: The Evolution of Operational Theory* chronicles the development of German, Soviet, and American ideas about operational art. It is included in this monograph for its explanation of the development of Soviet military theory, which is essential to understanding the context of American theoretical and doctrinal changes after Viet Nam.³⁴

One of the key changes made following Viet Nam was in the inclusion of Carl von Clausewitz's *On War*. His theories facilitated a concept of victory as the annihilation of an enemy's forces.³⁵ Several other important theorists from the Western military tradition are included in this monograph to refute specific aspects of Clausewitzian ideas. Sir B.H. Liddell Hart advocated for an indirect approach in his work *Strategy*, and it is included in this monograph for his belief in the importance of the psychological aspect of war and strategy.³⁶ Rear Admiral J.C. Wylie's *Military Strategy* offers a modern rebuttal to Clausewitz by asserting that control rather than destruction is the aim of military strategy.³⁷

Vanya Bellinger is a former Bulgarian journalist and independent researcher. She is an associate professor of strategy at Air University and visiting professor at the US Army War College. Her work *Marie von Clausewitz: The Woman Behind the Making of On War* further illuminates the limitations of the US Army's interpretation of Carl von Clausewitz by exploring Marie von Clausewitz's impact on *On War*.³⁸ Understanding her role in its formation and

³⁴ Shimon Naveh, *In Pursuit of Military Excellence: The Evolution of Operational Theory* (London, UK: Frank Cass Publishers, 1997), 165.

³⁵ Carl von Clausewitz, *On War*. ed. and trans. Peter Paret and Michael Howard (Princeton: Princeton University Press, 1976), 92.

³⁶ B.H. Liddell Hart, *Strategy* (London: Faber and Faber, 1967), 325.

³⁷ J. C. Wylie, *Military Strategy: A General Theory of Power Control* (Annapolis, MD: Naval Institute Press, 1989), 77.

³⁸ Vanya E. Bellinger, *Marie von Clausewitz: The Woman Behind the Making of On War* (Oxford: Oxford University Press, 2016), 245.

publication is imperative because of Clausewitz's centrality to the US Army's concept of strategy and war. It also provides commentary on the nature of the relationship between war and politics, which is an important element in this monograph.

Dr. Samuel Huntington's *The Soldier and the State* advocated for a strong separation between the responsibilities of military and political leaders, and it has been the defining theory behind US civil-military relations for decades.³⁹ However, his theories have not been without challenge. Other authors on civil-military relations are included in this monograph as a critique of Samuel Huntington's theories. They include Janine Davidson, Emerson T. Brooking, Benjamin J. Fernandes, James Golby, Mara Karlin, and Major General William Rapp. Their works *Mending the Broken Dialogue: Military Advice and Presidential Decision-Making*, "Why "Best Military Advice" Is Bad for the Military— and Worse for Civilians," and "Civil-Military Relations: The Role of Military Leaders in Strategy Making" highlight the shortcomings of Huntington's theories in the contemporary context.

This monograph does not propose that senior military leaders should be involved in politics or responsible for determining the political object. Nor does it suggest changes the current form, function, or processes of the US Department of Defense. It does seek to understand the lens through which American military professionals view the political process as it relates to military strategy and its impact on developing the commander's understanding of the operational environment.

Contemporary theorists provide descriptions and explanations of the contemporary context that allow readers to discern the disconnect between the US Army's current paradigm and the contemporary context. Dr. Klaus Schwab is a German economist, founder and executive chairman of the World Economic Forum. His work *The Fourth Industrial Revolution* studies the

³⁹ William E. Rapp, "Civil-Military Relations: The Role of Military Leaders in Strategy Making," *Parameters* 45, no. 3 (2015): 13.

rapid technological development of the Information Age and its impact on society.⁴⁰ P.W. Singer's works *Wired for War* and *LikeWar* describe the effects of the Information Age on the character of war.⁴¹ They, along with retired British General Sir Rupert Smith's *Utility of Force*, theorize a paradigmatic change in warfare from the Industrial Age to the Information Age.⁴² This change is echoed in Emile Simpson's *War from the Ground Up*, which describes a 21st Century conception of the changing character of war.⁴³ These works help this monograph demonstrate the gap between the American paradigm of conflict and the contemporary context.

Military theorist Everett Dolman's *Pure Strategy* connects systems theory into strategy and operational art, making it valuable to this monograph's description of a context-based paradigm.⁴⁴ Systems and complexity theory provide a basis for considering the relationships between interdependent variables. Dr. Ludwig von Bertalanffy was one of the founders of general systems theory and his work *General Systems Theory* is included in this monograph to understand the characteristics of systems.⁴⁵ Similarly, Dr. John H. Holland's "Complex Adaptive Systems: A Primer," is included to explain systemic behavior.⁴⁶ Once systems theory is understood in its basic form, Dr. Donella Meadows's *Thinking In Systems: A Primer* describes how to map system

⁴⁰ Schwab, 1.

⁴¹ P.W. Singer, *Wired for War: The Robotics Revolution and Conflict in the 21st Century* (New York: Penguin Press, 2009), 7; P.W. Singer and Emerson T. Brooking, *LikeWar: The Weaponization of Social Media* (Boston: Houghton Mifflin Harcourt, 2018), 4.

⁴² Rupert Smith, *The Utility of Force: The Art of War in the Modern World* (New York: Alfred A. Knopf, 2007), 4.

⁴³ Emile Simpson, *War from the Ground Up: Twenty-first-century Combat as Politics* (NY: Cambridge University Press, 2012), 1.

⁴⁴ Everett C. Dolman, *Pure Strategy: Power and Principle in the Space and Information Age* (London: Routledge, 2005), 6.

⁴⁵ Ludwig von Bertalanffy, *General Systems Theory* (New York: George Braziller, Inc., 1968), 5.

⁴⁶ John H. Holland, "Complex Adaptive Systems: A Primer," in *Worlds Hidden in Plain Sight: The Evolving Idea of Complexity at the Santa Fe Institute 1984-2019*, ed. David C. Krakauer (Santa Fe: Santa Fe Institute Press, 2019), 5.

variables and relationships to create a visualization of a system.⁴⁷ Jamshid Gharajedaghi is an adjunct professor of systems theory at Villanova University and a former systems engineer for IBM. His work *Systems Thinking: Managing Chaos and Complexity* explains a holistic inquiry process, which enables commanders and staffs to develop a model for systems thinking.⁴⁸

Dr. Peter Senge's *The Fifth Discipline: The Art and Practice of the Learning Organization* explains the adaptive characteristics of systems and the regulatory effects of negative feedback to return a system to a state of equilibrium in response to stimuli.⁴⁹ Mathematician David Morin's *Introduction to Classical Mechanics With Problems and Solutions* is incorporated to provide a metaphor to explain the time/space logic of feedback.⁵⁰ This time/space logic is central to Lieutenant Colonel (Retired) Robert R. Leonhard's *Fighting by Minutes: Time and the Art of War*. It is relevant to this monograph for its discussion of sequencing actions and synchronizing effects within a complex adaptive system.⁵¹

James Gleick's *Chaos: Making a New Science* provides this monograph with a foundational understanding of emergence as a characteristic of complex adaptive systems.⁵² This occurs because of lower level systems' ability to organize higher-level knowledge, as described in *Emergence* by Steve Johnson.⁵³ Dr. Edward O. Wilson applies this concept in his work *Consilience* to study complex biological systems, consciousness, and the unity of knowledge.⁵⁴

⁴⁷ Donella H. Meadows, *Thinking In Systems: A Primer* (White River Junction, VT: Chelsea Green, 2008), 18.

⁴⁸ Jamshid Gharajedaghi, *Systems Thinking: Managing Chaos and Complexity: A Platform for Designing Business Architecture*, 3rd ed. (Amsterdam: Morgan Kaufmann, 2011), 137.

⁴⁹ Peter M. Senge, *The Fifth Discipline: The Art and Practice of the Learning Organization*, Rev. ed. (New York: Currency Books, 2006), 58.

⁵⁰ David Morin, "Oscillations," in *Introduction to Classical Mechanics With Problems and Solutions* (Cambridge: Cambridge University Press, 2012), 15.

⁵¹ Robert R. Leonhard, *Fighting by Minutes: Time and the Art of War* 2nd ed. (Robert R. Leonhard, 2017), 115.

⁵² James Gleick, *Chaos: Making a New Science* (New York: Penguin Books, 1987), 251.

⁵³ Steven Johnson, *Emergence* (New York: Scribner, 2001), 19.

⁵⁴ Edward O. Wilson, *Consilience* (New York: Alfred Knopf, 1998), 120.

Dr. Fritjof Capra's *The Tao of Physics* is an unconventional discussion of the unity of knowledge through systems thinking and quantum physics.⁵⁵

Dialectical logic in the form of the Hegelian dialectic provides an example of this unity when applied to Colonel John Boyd's theory of destruction and creation, which is explained in Bertrand Russell's *The History of Western Philosophy*.⁵⁶ Boyd was a US Air Force pilot and military strategist whose work *A Discourse on Winning and Losing* provides the core mechanism to create the context-based operational paradigm that this monograph hypothesizes.⁵⁷ His theories are more comprehensively explained by Dutch Air Commodore Dr. Frans P.B. Osinga. His work *Science, Strategy, and War: The Strategic Theory of John Boyd* is included in this monograph because of its expansive explanation of Boyd's theories and their applicability to operational art.⁵⁸

Other authors were incorporated to add perspective in specific sections. *The Cambridge Introduction to Narrative* by H. Porter Abbott is included to explain how commanders and planners must communicate to connect the internal coherence of an operational approach with the strategic context.⁵⁹ Lastly, the language of architecture in Bernard Tschumi's *Red is Not a Color* is included to provide a metaphor that describes the cognitive arrangement of individual elements according to an internally coherent logic and externally relevant link to purpose within context.⁶⁰

⁵⁵ Fritjof Capra, *The Tao of Physics*, 3rd ed. (Boston: Shambhala Publications, 1991), 131.

⁵⁶ Bertrand Russell, *The History of Western Philosophy* (New York: Simon & Schuster, 1945), 730-732.

⁵⁷ John R. Boyd, *A Discourse on Winning and Losing* (Maxwell AFB: Air University Press, 2018), 322-323.

⁵⁸ Frans P.B. Osinga, *Science, Strategy, and War: The Strategic Theory of John Boyd* (London: Routledge, 2007), 1.

⁵⁹ H. Porter Abbott, *The Cambridge Introduction to Narrative* (New York: Cambridge University Press, 2002), 3.

⁶⁰ Bernard Tschumi, *Architecture Concepts: Red Is Not a Color* (New York: Rizzoli, 2012), 557, 493.

Theory, Doctrine, and Practical Experience: Origins of a Capabilities-based Paradigm

The initial section of this monograph seeks to understand the roles of accepted theory of phenomena, a theory of action, and practical experience in forming a paradigm that frames the commander's understanding of an operational environment. A brief chronology of events and a related discussion of doctrinal changes made by US Army leaders in the years following Viet Nam provide insight. To understand the origins of the current paradigm, we must consider its situation and explore the context within which its contemporary form, function, and processes emerged.

Examining the formation of a paradigm as a theory of phenomena and its adaptive process is necessary to understand the reinvention of the American way of war in the wake of Viet Nam. This process fundamentally begins within the context of observed events and activity. In the sciences, a paradigm is the accepted theory of phenomena within a field.⁶¹ While common sense might suppose that scientific theory develops slowly over time, Dr. Thomas Kuhn demonstrated in *The Structure of Scientific Revolutions* that the reality of scientific revolutions is different than assumed. Discoveries are checked against accepted theory, and if empirical observations do not match expected behavior, then they are initially ignored as anomalies.⁶²

A paradigmatic cognitive process also exists within individuals. Nobel prize-winning economist and cognitive psychologist Daniel Kahneman differentiates between the cognitive processes that exist below and above the threshold of conscious knowledge.⁶³ Below this threshold, individuals assess information and make decisions within the context of an expected theory of phenomena.⁶⁴ Institutional language and prior experiences that form an individual's

⁶¹ Kuhn, 46.

⁶² Ibid., 52.

⁶³ Kahneman, 20.

⁶⁴ Ibid., 71.

social identity construct this paradigm.⁶⁵ The paradigm gives an individual a baseline for comparison when encountering new information and situations, and unless otherwise prompted, they make intuitive decisions through a subconscious cognitive process.⁶⁶ Anomalies occur on an individual level as well, and the subconscious paradigm ignores them by substituting what it already understands in the anomaly's place.⁶⁷

However, they are ignored at the peril of the scientific consensus and the individual because the established paradigm does not adapt as anomalies accrue until their existence cannot be ignored.⁶⁸ At this point, the overwhelming weight of the anomalies has made accepted theory fundamentally unsound, and the two forces must be reconciled.⁶⁹ The opposition to necessary change causes a breakdown, which Kuhn referred to as a crisis.⁷⁰ The reconciliation of a paradigmatic crisis is not smooth, and the foundational assumptions of the scientific community shift abruptly to reflect the new reality.⁷¹ Within individuals, this process results in decision-making paralysis.⁷² Once equilibrium is re-established, the emergent observed theory forms a new paradigm that will remain in place until the next revolution occurs.⁷³

The outbreak of the Korean War in 1950 demonstrated that the ideologies of the democratic United States and the communist Soviet Union would not coexist peacefully. President Harry Truman's initial strategy to contain a perceived expanding communist threat at key strongpoints failed, mainly because his communications with Soviet leaders through the

⁶⁵ Berger and Luckmann, 22.

⁶⁶ Kahneman, 80.

⁶⁷ *Ibid.*, 87.

⁶⁸ Kuhn, 52.

⁶⁹ *Ibid.*, 53.

⁷⁰ *Ibid.*, 75.

⁷¹ *Ibid.*, 77-78.

⁷² Boyd, 316.

⁷³ Kuhn, 111-112.

articulation of US policy were ambiguous.⁷⁴ More importantly, the Korean War also demonstrated that American military forces were unable to respond effectively and immediately to the threat because the United States lacked the military means to execute its stated strategy.⁷⁵ The lack of alignment between means and strategy prevented the United States' ability to act coherently within a changing context.

That the Korean War happened challenged the post-WWII status quo. In response to this failure, President Dwight Eisenhower directed a "New Look" in 1954 to understand the international context and revise American strategy. His efforts provided the US government with a military strategy that clearly articulated the United States was committed to combating the spread of communism anywhere in the world. It also envisioned keeping forces abroad for an indefinite length of time to accomplish that aim.⁷⁶ Eisenhower's strategic paradigm differed from his predecessor in scope and scale by first acknowledging the existence of a Cold War, seeking to understand the broader context of the Cold War, assessing the relationship between strategy and means, and believing that victory could not be the end of consideration for that relationship.⁷⁷ His guidance allowed US policymakers to develop a strategic aim that appropriately identified the global implications of US interests. Then they designed a military structure to secure them and codified them in NSC 162/2.⁷⁸

Rapidly increasing technological innovations provided the United States with the opportunity to develop new capabilities, especially in the nuclear arms. This was a cornerstone of fulfilling NSC 162/2.⁷⁹ The possession of nuclear intercontinental ballistic missiles by the United

⁷⁴ John F. O'Connor, *Cold War and Liberation: A Challenge of Aid to the Subject Peoples* (New York: Vantage Press, 1962), 180.

⁷⁵ Fehrenbach, 31.

⁷⁶ Bowie and Immerman, 178.

⁷⁷ Gaddis, *Containment*, 133.

⁷⁸ Bowie and Immerman, 187.

⁷⁹ Weigley, 402.

States and the Soviet Union made deterrence and the concept of mutually assured destruction critical components of American strategy. The strategy intended to prevent the escalation of the Cold War into a total war while also allowing the United States to rebalance forces in a cost-effective approach globally.⁸⁰ Yet, the prospect of limited war remained, and the early 1960s presented the United States with a security challenge in Viet Nam that threatened its strategy of containment and deterrence.⁸¹

The importance of aligning US political objectives, military objectives, and an approach appropriate to the context within Viet Nam was one of the major concerns of the Kennedy administration.⁸² However, political and military leaders over several US administrations did not develop a shared understanding of the political and military objectives, and the United States failed to translate tactical success into operational success or strategic victory.⁸³ The Military Advisory Command Vietnam commanders had to operate within severe constraints placed on them as a result of political considerations, which included the decision only to use military forces within South Vietnam and not consider a counteroffensive into North Vietnam.⁸⁴ These constraints had significant effects on commanders' operational approaches by imposing a narrow frame to create a desired state.

More importantly, senior commanders had a minimal role in the development of policy, which influenced how they presented options to political leaders and further hampered their ability to develop relevant approaches.⁸⁵ Robert McNamara, the Secretary of Defense, took a

⁸⁰ Brodie, 248; Bowie and Immerman, 202.

⁸¹ Burleigh, 460.

⁸² Burleigh, 462.

⁸³ Graham A. Cosmas, *MACV: The Joint Command in the Years of Withdrawal, 1968-1973* (Washington: US Army Center of Military History, 2007), 414.

⁸⁴ Cosmas, *Withdrawal*, 409.

⁸⁵ *Ibid.*, 414.

hands-on approach to the management of the war that affected tactical decisions.⁸⁶ His involvement subverted the cognitive linkage between strategy and tactics. The role of senior military officers became restricted to concerns about tactical actions because of their marginalized influence at the strategic level and their diminished flexibility.⁸⁷

The theory of action of the day, FM 100-5 *Field Services Regulations Operations*, did not use the term operational approach, nor did it discuss the cognitive link between strategy and tactics. It stated that military strategy was the use of military means to achieve national objectives.⁸⁸ With the political leadership's subversion of military strategy, the narrowed purview of military leaders did not permit them to look up and out along the strategic arc to connect tactical actions in time, space, and purpose in a way that was relevant to the context of the conflict. A focus on tactics, reliance on superior technology, and mistaken assumptions about the context in Viet Nam led commanders to implement an ineffective strategy.⁸⁹ This strategy did not support the political objectives in Washington and broke the political will of the American public to continue supporting US involvement.⁹⁰ The US withdrew from Viet Nam in 1973, having achieved nothing of strategic value.⁹¹

The experience of Viet Nam, a desire to refocus its commitments in Europe, and assessments of Soviet military strategy combined to create a state of paradigmatic crisis within the minds of political and military leaders. The cost of the Viet Nam War contributed to a significant fear about the feasibility of the United States' Cold War strategy in a changed strategic

⁸⁶ Graham A. Cosmas, *MACV: The Joint Command in the Years of Escalation, 1962-1967* (Washington: US Army Center of Military History, 2006), 388-389.

⁸⁷ Cosmas, *Withdrawal*, 424.

⁸⁸ US Department of the Army, Field Manual (FM) 100-5, *Field Service Regulations Operations* (Washington, DC: Government Printing Office, 1962), 4.

⁸⁹ Kennedy, 405.

⁹⁰ *Ibid.*, 406.

⁹¹ Cosmas, *Withdrawal*, 427.

context. The Soviet's pending parity with the United States' intercontinental ballistic missile capabilities further contributed to anxiety about the US Army's ability to respond to a perceived Soviet threat in Europe.⁹² Concomitantly, the 1973 Arab-Israeli War and open-source feedback concerning the Soviet concept of Deep Battle indicated that contemporary doctrine was unprepared to meet the challenge of a Soviet threat.⁹³

The US Army created the Training and Doctrine Command and enacted a modernization program to meet the perceived threat.⁹⁴ A significant acquisition project, dubbed the Big 5, was undertaken to equip the US Army with technologically advanced, modern combat systems.⁹⁵ Increasing reliance on technological innovations reinforced a more tactical and capabilities-based paradigm.⁹⁶ Foundational premises of how the American Army prepared for and waged war were no longer valid, and this prompted US Army senior officers to search for a better theory of phenomena.⁹⁷

Owing to increased availability following the release of a new translation, and according to the US Army Center of Military History's narrative, the US Army incorporated Carl von Clausewitz's *On War* as the theoretical foundation for its concept of victory and way of war.⁹⁸ One of Clausewitz's most well-known ideas is that war is an extension of politics.⁹⁹ This oft-quoted maxim, when viewed through the lens of Samuel Huntington, delineates the roles of

⁹² Gaddis, *Containment*, 265.

⁹³ Clayton R. Newell and Michael D. Krause, *On Operational Art*. (Washington: US Army Center of Military History, 1994), iii.

⁹⁴ Michael D. Krause and R. Cody Phillips, *Historical Perspectives of the Operational Art* (Washington: US Army Center of Military History, 2010), 13-14.

⁹⁵ Dastrup, 12.

⁹⁶ Smith, 228.

⁹⁷ Krause and Phillips, 13.

⁹⁸ *Ibid.*, 16.

⁹⁹ Clausewitz, 87.

soldiers and politicians in formulating the political object into readily identifiable and mutually exclusive areas of responsibility.¹⁰⁰

Huntington's *Soldier and the State* was published in 1957 and has served as the model for civil-military relations for generations of US Army officers.¹⁰¹ One of the key concepts in *Soldier and the State* is objective civilian control, which argued that politically empowered senior civilian leaders would determine the political object for a conflict and then step back to allow apolitical senior military leaders to execute the war itself.¹⁰² In the context of the post-Viet Nam era, objective control justified US Army senior leaders' marginalization in determining the political object of war. It turned their attention to the conduct of warfare itself.

Enmeshment of technological primacy, Clausewitz's theory of war, and Huntington's lens of objective civilian control fostered an American concept of victory based in a tactical, capabilities-based worldview. Emerging from the synthesis of these factors, US Army doctrine writers developed Active Defense in 1976 and then AirLand Battle in 1982, which transformed the theory of phenomena into something practical that can be applied, or a theory of action.¹⁰³ This theory of action was paradigmatically focused on the annihilation of an opponent's fighting capability through decisive battle with less attention paid to the political aspect of war.

The concept of a cognitive-physical link between strategy and tactics existed in Soviet theory as early as the 1920s.¹⁰⁴ Maneuver oriented and stressing the importance of attacking the enemy as a holistic system, the Soviet idea of Deep Battle provided a conceptual basis for bridging the cognitive with the physical.¹⁰⁵ The conceptual link between strategy and tactics did

¹⁰⁰ Rapp, 14-15.

¹⁰¹ Rapp, 13.

¹⁰² Huntington, 68-69.

¹⁰³ Argyris and Schön, 10; Freedman, 200.

¹⁰⁴ Naveh, 165.

¹⁰⁵ *Ibid.*, 166.

not make it into US doctrine until the creation of AirLand Battle in the 1982 version of FM 100-5, and then operational art was included in the 1986 version.¹⁰⁶

General Don Starry was the most prominent advocate for the inclusion of an operational level of war.¹⁰⁷ However, US Army leaders and doctrine writers did not fully adopt the concept of a systems-based approach and envisioned it as more divorced from the realm of politics and strategy than the Soviets.¹⁰⁸ They looked to other sources for inspiration and incorporated concepts from the Western military tradition. Carl von Clausewitz's idea of the center of gravity was combined with Antoine Henri Jomini's universal principles of decisive points, mass, and lines of operation.¹⁰⁹ Their reluctance to fully integrate the role of politics and strategy was indicative of Samuel Huntington's influence on the US Army officers' professional ethic.

US Army senior leaders were also concerned that junior officers were being trained incorrectly following the war in Viet Nam. Officer training was changed to ensure that lieutenants focused on how to be platoon leaders and captains focused on company command, and this remains its focus today.¹¹⁰ DA PAM 600-3, *Officer Professional Development*, codifies Key Developmental Assignments as the primary areas of practical experience for officers in their career fields.¹¹¹ Success in tactical echelons is the determining factor for promotion and advancement, even beyond the junior officer ranks. This model is the result of a system that prioritizes performance in Key Developmental Assignments in tactical units over experience in any other assignment.¹¹²

¹⁰⁶ Freedman, 200.

¹⁰⁷ Naveh, 297.

¹⁰⁸ Freedman, 202.

¹⁰⁹ Freedman, 205; Azar Gat, *A History of Military Thought: From the Enlightenment to the Cold War* (New York: Oxford University Press, 2001), 119-121.

¹¹⁰ Newell and Krause, 13.

¹¹¹ US Department of the Army, Department of the Army Pamphlet (DA PAM) 600-3. *Commissioned Officer Professional Development* (Washington: Government Printing Office, 2014), 12.

¹¹² US Army, DA PAM 600-3, 14.

Infantry (AOC 11A) Active Component Model

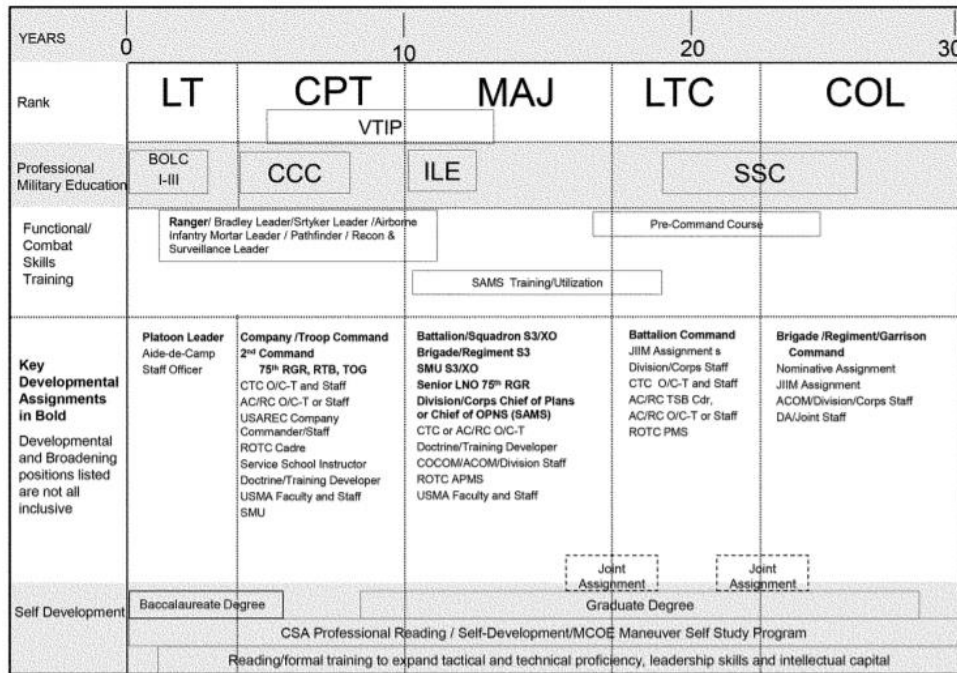


Figure 1. Professional Development Model. This chart shows the career progression of an infantry officer. Note that the Key Developmental Assignments are all at the tactical echelon. US Army, DA PAM 600-3, 62

This author conducted an analysis of sixty-two currently serving three and four-star general officers to determine the breadth and depth of their experience serving above tactical echelons before their promotion to general officer. The sources for the data included in this section are their official biographies, which the author pulled from the General Officer Management Office’s CAC-enabled website.¹¹³ To support this monograph’s hypothesis that US Army officers have limited exposure to the conduct of war above concern for tactical actions, the author compared dates of assignments to dates of rank, promotions, and Professional Military Education attendance to establish relevant metrics.

Screening criteria for service above a tactical echelon followed current doctrinal concepts for Large Scale Combat Operations as described in FM 3-0 that establish the division as the

¹¹³ US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

primary tactical headquarters.¹¹⁴ If an officer served on a staff of a Corps or higher operational headquarters, Army Service Component Command, functional and geographic combatant commands, or within the institutional Army in a position that plausibly required the officer to support above a tactical echelon, then the author counted the number of years in that assignment as above a tactical echelon. Service as a Deputy Commanding General of a division while Colonel (Promotable) was not counted because those billets are coded for general officers. The data was then graphically depicted in a series of charts to determine if they supported the hypothesis.

An initial demographic analysis revealed that twenty-four of the senior general officers studied were from either the infantry or armor branches, which for this study were grouped as maneuver officers. Field artillery and air defense artillery were classified together as fires officers. Figure 2 depicts the demographic breakdown.

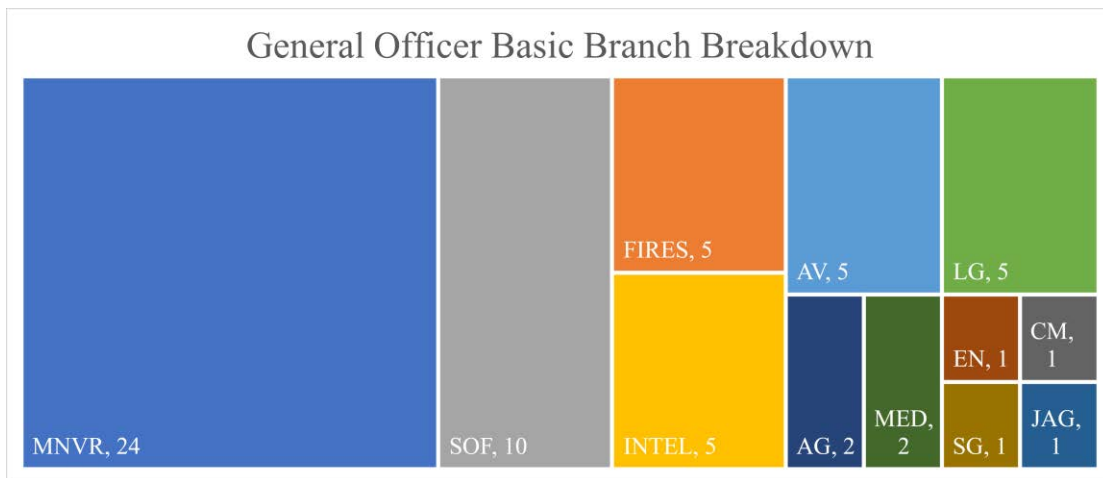


Figure 2. Basic Branch Demographics. This chart illustrates the demographic breakdown of the sixty-two general officers in the author’s research based on their basic branch before their promotion to general officer. Data adapted from US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>

¹¹⁴ US Army, FM 3-0, 2-13.

The sixty-two officers studied had an average of eight years of practical experience above a tactical echelon before becoming a general officer, as depicted in figure 3. Twenty-six percent of the officers had exposure above the tactical echelon before their Intermediate Level Education attendance, ninety-four percent of which was through resident CGSC at Fort Leavenworth, KS. The data also indicates that the first instance of a majority of officers serving above a tactical echelon occurs in years fifteen and sixteen of service.

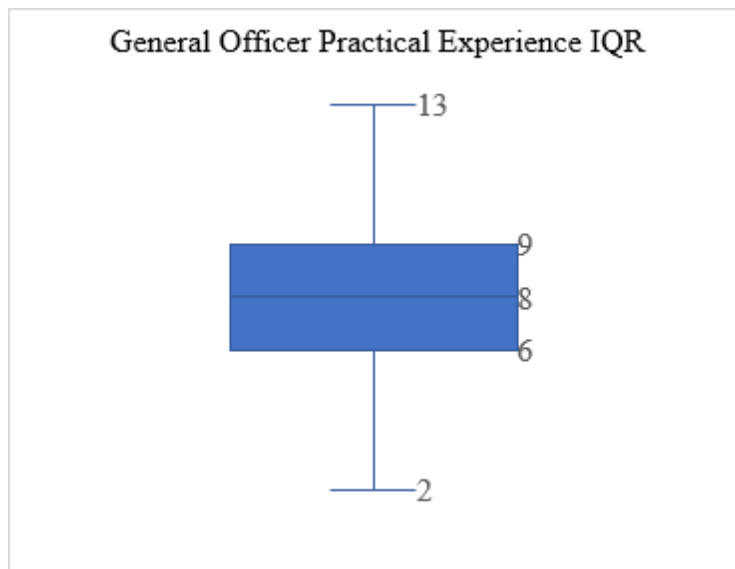


Figure 3. Practical Experience Interquartile Range. This box and whisker chart shows the number of years an officer spent in assignments above a tactical echelon before their promotion to general officer. The numbers depict the quartiles associated with the data, with the middle 50% falling between 6 and 9 years and a mean of 8 years. Data adapted from US Department of the Army, "General Officer Management Office," accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>

However, this is only a temporary exposure before returning to a majority in tactical assignments. As depicted in figure 4, more than fifty percent of the officers were serving in tactical assignments at twenty-three years in service. Typically, an officer was promoted to general officer in their twenty-sixth or twenty-seventh year of service. The analysis indicates that, on average, an officer spent eighteen years in tactical assignments, which is a ratio of more than 2:1 to service above a tactical echelon prior to promotion to general officer.

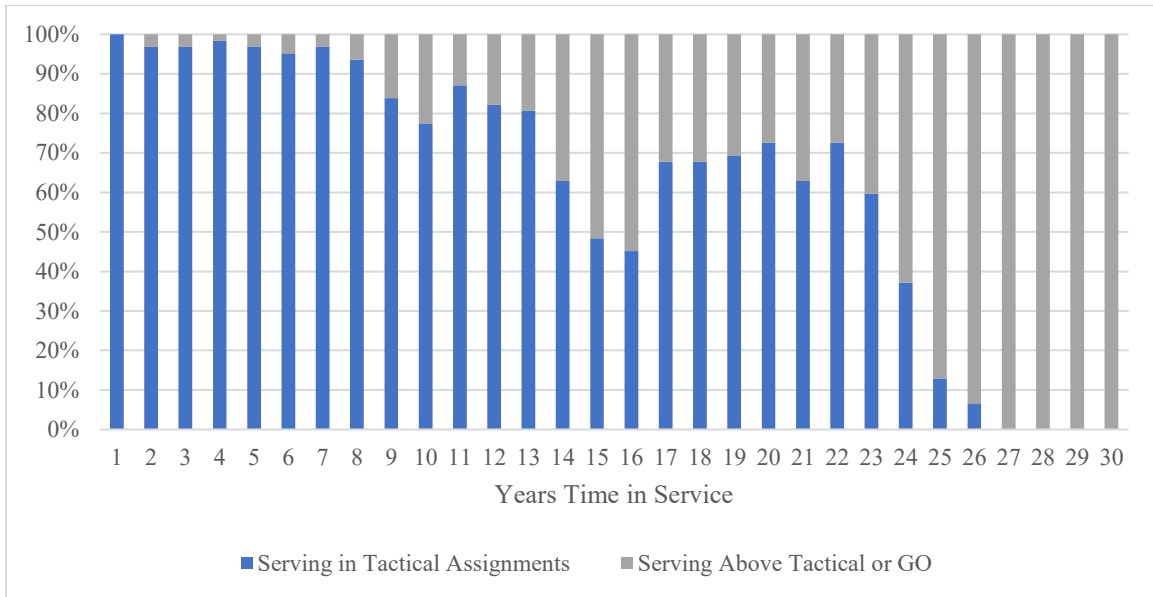


Figure 4. Tactical Percentages. This chart depicts the percentage of officers serving in a tactical assignment relative to those serving above the tactical echelon for the full sixty-two officer dataset. Data adapted from US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>

When isolated from the larger dataset, the twenty-four maneuver general officers demonstrated the most homogeneity of career paths, and none of them had an assignment above a tactical echelon in the first eight years of their careers. This statistic is significant because the twenty-four maneuver officers represent thirty-nine percent of the senior general officer corps. That percentage increases to more than half when only considering the four-star general officers.¹¹⁵

¹¹⁵ US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

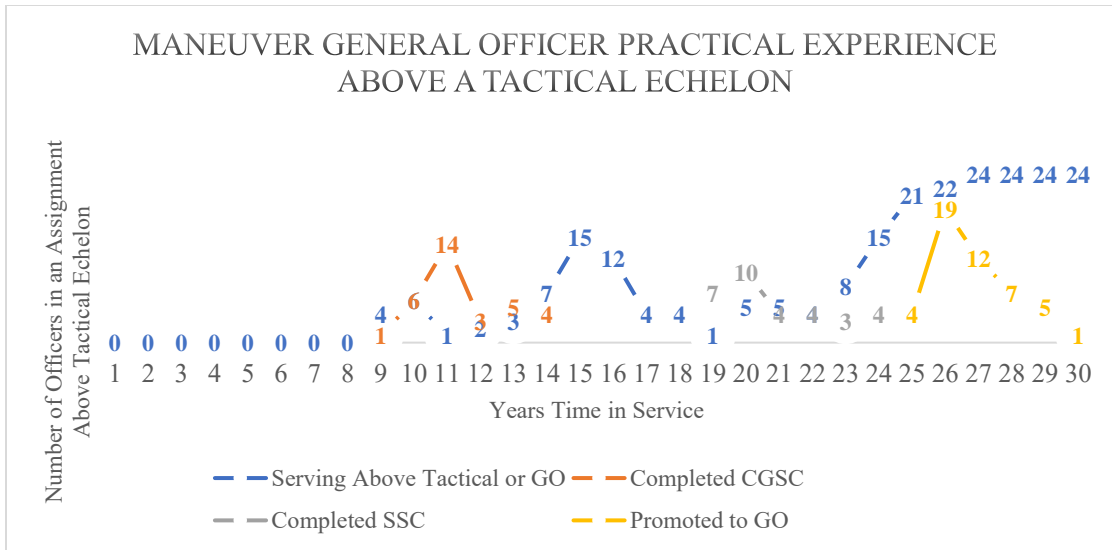


Figure 5. Maneuver Senior General Officers. This chart depicts the number of the maneuver basic branch officers serving above a tactical echelon relative to their time in service, their professional military education, and promotion to general officer. Data adapted from US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>

When comparing the career development timeline in DA PAM 600-3 and the data from the study, it becomes evident that the system is operating as designed. The architects of the post-Viet Nam army gave priority to the education and development of tactical combat leaders, and the data supports the hypothesis that they were successful. Current US Army officers are cognitively predisposed to think and act within a tactical paradigm, and future cohorts of officers are likely to follow a similar mold given the importance placed on success in tactical assignments as the crucial metric for promotion.

Changed Context, Unchanged Paradigm: Risking Relevance

Concerning operational art, commanders and staffs need to understand that assumptions about the environment, ourselves, others, and their interrelationships form a paradigm for reference and action.¹¹⁶ Awareness of their paradigm gives them a basis for determining the relevance of information and what to do with it. When they encounter information that does not

¹¹⁶ Kuhn, 10-11.

fit within their paradigm, they may reject it as an anomaly.¹¹⁷ However, if anomalies accumulate, they will experience a crisis as their paradigm is overwhelmed.¹¹⁸ In this section, the author explores indicators that the US Army officer corps' current paradigm may be risking relevancy in a post-industrial, human-centric Information Age.

The term Fourth Industrial Revolution comes from Dr. Klaus Schwab's book of the same name. In it, he chronicles the first three industrial revolutions as having been the invention of the steam engine, mass production, and computing.¹¹⁹ What makes the current era different, and why Schwab categorizes it as another industrial revolution, is the scope and scale of systemic change made possible by rapidly increasing technology.¹²⁰ The more interconnected nature of the information age enables a much higher frequency of disruption in time and space across industries and societies than in the past.¹²¹ As technological innovation increases exponentially, the time/space logic of what is possible in conflict, where it occurs, and operational frequency increases similarly.¹²² Managing the increased frequency of time/space logic places an increased demand on the cognitive capabilities of US Army officers.¹²³

The primacy of information and social connections has significant ramifications for the conduct of war.¹²⁴ In an information-centric environment, the actor that can develop an asymmetric advantage in access to information possesses greater freedom of action and thus greater power within the system.¹²⁵ They are then better positioned to exploit their advantage to

¹¹⁷ Kuhn, 52.

¹¹⁸ Ibid., 74-75.

¹¹⁹ Schwab, 7.

¹²⁰ Ibid., 9.

¹²¹ Ibid., 8.

¹²² Singer, 100.

¹²³ Leonhard, 90.

¹²⁴ Singer and Emerson, 19.

¹²⁵ Schwab, 73.

affect the decision-making space of a target.¹²⁶ Actors that have already adapted their theory of war to consider shaping perceptions, and thereby manipulating time/space logic, are in a better position to harness the Fourth Industrial Revolution.

While the United States languished in Viet Nam, the Soviets were busy exploring other theoretical constructs. Vladimir Lefebvre began considering the possibility of shaping a target's perception of reality to predetermine the target's choices in 1964.¹²⁷ The Soviets continued to develop their theory of using disinformation to alter threat perceptions in targets to usurp their normal decision-making processes, ultimately naming it "reflexive control."¹²⁸ Lefebvre was skeptical of the full potential of the theory at the time of his work's publication because he believed there were limitations on knowing enough data about an adversary to map their worldview completely. This limitation makes subversion of their perception by suggesting alternative information that is readily accepted as an internally justified experience more challenging.¹²⁹ However, this kind of theoretical thinking had tremendous potential to benefit from a dramatic increase in interconnected societies because it was already predisposed to consider its aims in relation to a broader context and manipulate the time and space of conflict.

The human-centric Information Age allows actors to directly act in the cognitive space to affect the domestic audiences of adversaries, disintegrate their system at a depth previously not possible, and potentially negates some utility of the physical warfighting capabilities of the United States, reducing their relevance. It is a cognitive strategic envelopment through the manipulation of what is possible by changing the boundaries of where conflict occurs.¹³⁰ The past where Lefebvre speculated that reflexive control lacked enough information about the decision-

¹²⁶ Ibid., 84.

¹²⁷ Lefebvre and Lefebvre, 12.

¹²⁸ Ibid., 3.

¹²⁹ Ibid., 124.

¹³⁰ Gharajedaghi, 126.

making processes of people has ended. It has given way to the present where a private company accumulated five thousand data points for every voter in the 2016 US Presidential election and accurately forecasted their voting preferences.¹³¹ An actor executing reflexive control could harness this wave of big data, deceive the target by presenting signals that confirm the target's paradigm through shaping threat perceptions, and ensure the target's blind irrelevance behind a façade of competence.

The US Army's current paradigm is unprepared to adapt to the Fourth Industrial Revolution because of lessons it learned from previous success and its continuing focus on technical capabilities separate from the current context. In *The Fifth Discipline*, Peter Senge asserts this occurs because today's problems are outputs from yesterday's solutions.¹³² US national security documents state that the most pressing threat to the United States is the return of great power competition.¹³³ Within that framework, inter-state war on a large scale is the planning factor for force development and structure.¹³⁴ To meet that, the US Army re-introduced concepts of a division and corps as a tactical headquarters or application of capabilities.¹³⁵

Whereas the US Army initiated the Big 5 modernization effort in the post-Viet Nam era, it is now pursuing a Big 6 effort that similarly focuses on modernizing capabilities.¹³⁶ Its focus

¹³¹ Ian Sherr, "Facebook, Cambridge Analytica, Data Mining and Trump: What You Need to Know," CNET, accessed February 10, 2020, <https://www.cnet.com/news/facebook-cambridge-analytica-data-mining-and-trump-what-you-need-to-know/>.

¹³² Senge, 57.

¹³³ United States, *The National Security Strategy of the United States of America* (Washington: President of the US, 2017), 27.

¹³⁴ United States, *Summary of the 2018 National Defense Strategy of the United States of America: Sharpening the American Military's Competitive Edge* (Washington: Secretary of Defense of the US, 2018), 7.

¹³⁵ US Army, FM 3-0, 2-11, 2-13.

¹³⁶ Phillip B. Fountain, "Army Futures Command to Highlight Modernization Efforts at 2019 AUSA," US Army, accessed March 1, 2020. https://www.army.mil/article/228297/army_futures_command_to_highlight_modernization_efforts_at_2019_aua.

remains on the execution of operational art to achieve the destruction of the enemy's forces.¹³⁷ As a result, the current version of FM 3-0 reads in many ways like FM 100-5 from 1986. The context of the operational environment has changed, but the institution's thinking has not. When asked if this re-prioritization of efforts to fill perceived gaps had any effect on adversary actions, a senior army leader was unable to respond definitively.¹³⁸ This lack of contextual awareness overshadows a foundational reliance on overwhelming technological capabilities.

One reason that this phenomenon occurs is the wall of separation between politics and war in the US Army's theory of war. In the last chapter of *Soldier and the State*, Huntington asserts that a military officer cannot participate in the politics of policymaking for the use and direction of force without also becoming part and parcel to partisan politics.¹³⁹ This assertion is complimented by an institutional experience of believing that politicians should leave the warfighting to the military professionals.¹⁴⁰ In an era of transformational change that allows adversaries to wield informational means to appeal to domestic audiences directly, the lines that delineate responsibility between political and military leaders are not so clear cut.¹⁴¹

When read without a Huntingtonian lens, Clausewitz blurs the lines between the conduct of war and the political process with the help of his wife, Marie. Recent scholarship into the role of Marie von Clausewitz indicates that her influence on *On War* went beyond ensuring its publication after Carl's death.¹⁴² Marie von Clausewitz was from a politically important family, a frequent member of the Prussian royal court, and charged with the education of the crown

¹³⁷ US Army, FM 3-0, 2-41.

¹³⁸ Not-for-attribution US Army senior leader remarks to a professional military education audience, 2020.

¹³⁹ Huntington, 460.

¹⁴⁰ Freedman, 207.

¹⁴¹ Singer and Brooking, 184.

¹⁴² Bellinger, 245.

prince.¹⁴³ She was uniquely positioned to understand the workings of the political process, and her correspondence with Carl reflected a discourse of ideas about the relationship between politics and war.¹⁴⁴ Her influence may illuminate the linkages that Carl made between the primacy of the political object and the conduct of war.

If politics truly is as much of war as Carl and Marie von Clausewitz signify, then US Army officers' understanding of their role as military advisors to civilian political leaders is incomplete and inadequate because of their Huntingtonian blinders. They resign themselves to being tacticians advising policymakers when policymakers need advice from officers capable of acting tactically while thinking operationally and strategically.¹⁴⁵ At the operational level, an operational approach must be pragmatically applied within the context of an aspirational strategic narrative, properly understood as the level of purely political activity.¹⁴⁶ There is a danger that the operational approach substitutes for strategy in the absence of a coherent strategic narrative, and that likelihood is increased because of US Army officers' practical experience.¹⁴⁷

The overwhelming majority of US Army officers' practical experience is at the tactical level where problems are solved by determining the correct actions and there is a definite end with a clear victory.¹⁴⁸ Above the tactical echelon problems do not have a correct solution, and there is only the continuation of competition with no relevant concept of victory.¹⁴⁹ Friction and paradigmatic crisis occurs because there is a disconnect between expectations and observed

¹⁴³ Vanya E. Bellinger, "Marie von Clausewitz: The Woman Behind the Making of *On War*" (lecture, School of Advanced Military Studies, Fort Leavenworth, July 22, 2019).

¹⁴⁴ Ibid.

¹⁴⁵ Janine Davidson, Emerson T. Brooking, and Benjamin J. Fernandes, *Mending the Broken Dialogue: Military Advice and Presidential Decision-Making* (Council on Foreign Relations, 2016).

¹⁴⁶ Emile Simpson, "Combat as Politics: The Fusion of the Military and the Political in 21st Century Warfare" (lecture, Chatham House, London, June 26, 2013). <https://www.chathamhouse.org/events/view/191445>.

¹⁴⁷ Ibid.

¹⁴⁸ Smith, 16.

¹⁴⁹ Ibid., 19, 28.

reality in the development of the commander's understanding of the operational environment.¹⁵⁰ Dietrich Dörner asserted in *The Logic of Failure* that when faced with uncertainty, people default to their intuition as a guide for future action.¹⁵¹ US Army officers' practical experience fosters an intuitive cognitive process in terms of capabilities to change the context rather than in terms of the context to change themselves to fit within it.

The memorandum of instruction for the fiscal year 2018 brigadier general promotion board explicitly stated a desire to select officers that are skilled at thinking strategically.¹⁵² The US Army's officer professional development model indicates the current system may not adequately prepare them to do so because skill at strategic thinking is a product of practice, knowledge-in-action, and developing reflection-in-action. Knowledge-in-action is the described form of knowing-in-action, which is the intuitive mastery of a skill developed through practical experience.¹⁵³ Reflection-in-action is a phenomenon by which a person is able to think about what they are doing while doing it, and make necessary changes to achieve the desired output.¹⁵⁴ The only way to get better at thinking strategically within proper contextual understanding is to actively do so, which allows the practitioner to try techniques, fail, learn, and try again.¹⁵⁵ We handicap our ability to develop the commander's understanding by assigning officers to operational or strategic assignments later in their careers and for shorter durations, thereby inhibiting their ability to practice reflection/knowledge-in-action.¹⁵⁶

¹⁵⁰ Lanir, 14.

¹⁵¹ Dörner, 104.

¹⁵² US Department of the Army, "Memorandum of Instruction - FY18 Brigadier General, Army Competitive Category, Promotion Selection Board," accessed February 2, 2020. <https://www.gomo.army.mil/ext/portal/Files/WDDownload.ashx?WDID=2679&ArchiveId=12>.

¹⁵³ Schön, 22.

¹⁵⁴ *Ibid.*, 25-26.

¹⁵⁵ *Ibid.*, 93.

¹⁵⁶ US Department of the Army, "General Officer Management Office," accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

The education of US Army officers exacerbates this handicap. Forty-four of the sixty-two general officers studied by the author possessed a graduate degree from a civilian institution, but only three of those officers received a graduate degree from a top-tier institution.¹⁵⁷ This indicates that there is little investment made by the US Army’s officer professional development model to widen the cognitive aperture of officers. That is problematic in an environment where well-educated civilians drive policy.¹⁵⁸

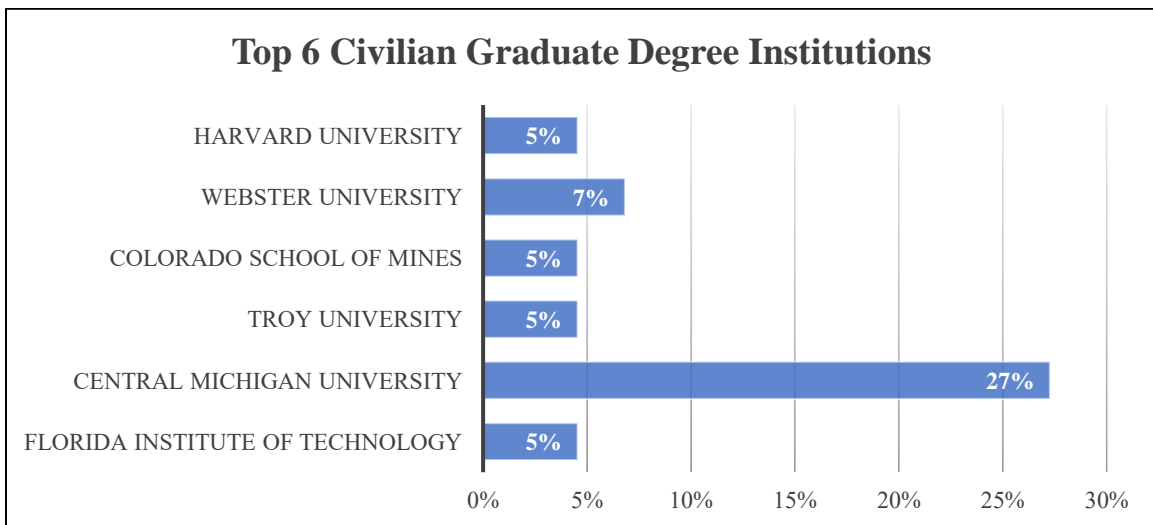


Figure 6. Civilian Graduate Degree Institutions. This chart depicts the six most popular institutions for the forty-four general officers in the data that have civilian graduate degrees. Data adapted from US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>

This monograph does not suggest that US Army officers should seek to participate in the political process. They should become more attuned to it and the nuance required to generate suitable options for civilian political leaders.¹⁵⁹ Most importantly, OSD expects senior military leaders to be able to enter into a back-and-forth dialogue between civilian and military officials to

¹⁵⁷ US Department of the Army, “General Officer Management Office,” accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

¹⁵⁸ Richard N. Haass, “Think Tanks and U.S. Foreign Policy: A Policy-Maker’s Perspective,” US Department of State, accessed March 1, 2020, <https://2001-2009.state.gov/s/p/rem/15506.htm>.

¹⁵⁹ James Golby and Mara Karlin, “Why ‘Best Military Advice’ Is Bad for the Military— and Worse for Civilians,” *Orbis* 62, no. 1 (2018).

ensure the best possible outcome for planning.¹⁶⁰ The US Army's officer professional development model fails to adequately prepare officers to meet that expectation because of its focus on tactical cognitive habits and failure to prioritize relevant education.

Defense against irrelevance in the Information Age requires commanders and staffs to adapt their strategies to the context and activities of adversaries, and this interactive process reflects the interdependent relationships of a complex adaptive system.¹⁶¹ That the world is complex is not a new concept. Humans are inherently complex even as individual beings, and consciousness itself exists as a type of emergent property of a complex biological system.¹⁶² An ordinary human failure is to believe it is possible to identify all of the variables, map all of the connections between variables, and attempt to predict the outputs definitively. Such a belief causes individuals to put off decisions for action until more information is known or risks are identified and reduced.¹⁶³ It is important to recognize the impossibility of that position and instead develop comfort in ambiguity, a preference for deliberate action in the absence of assurance, and the default for reflection/knowledge-in-action.¹⁶⁴ To accomplish this, US Army officers must think differently.

Narrative Resonance and Equilibrium in Context: Creating a New Paradigm

This monograph has explored the origin of the current paradigm, discussed its shortcomings concerning the contemporary context, and considered that US Army officers do not receive adequate practice for developing cognitive models to operate in uncertainty. It is now

¹⁶⁰ US Department of Defense, "OSD Planning Review Process White Paper," Washington, DC: Office of the Under Secretary of Defense for Defense Policy, 2015).

¹⁶¹ Robert Axelrod and Michael D. Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (New York: Basic Books, 2000), 7.

¹⁶² Wilson, 120.

¹⁶³ Dörner, 164.

¹⁶⁴ Schön, 26.

possible to examine the concepts of internal coherence, external relevance, and equilibrium in greater depth to understand their significance in creating a context-based paradigm and practicing reflection/knowledge-in-action. The art and science of architecture provide an apt metaphor to evaluate the primacy of contextual understanding.

The Acropolis in Athens is one of the most ancient structures in the world, a place where foundational concepts of government and philosophy trace their spiritual and intellectual origins.¹⁶⁵ In its contemporary shadow sits a museum dedicated to its history and significance that few people can view and not appreciate its arrangement. The structure is modern in its design and construction. It also blends seamlessly with an ancient city.¹⁶⁶ It provides visitors with an immersive experience inside. Yet, it simultaneously allows them to view the Acropolis outside and appreciate the juxtaposition of the museum's internal program with the surrounding context.¹⁶⁷ Architecture can provide military planners with a natural metaphor for operational art because of its need to link elements in time and space for a specific purpose – and when executed well provides an example of a structure or concept that is both internally coherent and externally relevant within context.

A work of architecture cannot exist without context because structures must exist within their surroundings, and this broader environment shapes perceptions of the structure's program. The architect aims to integrate the program of a structure within context according to a concept, which is the structure's purpose.¹⁶⁸ Concerning operational art, the first step for commanders and their staffs is to evaluate the context and develop a framework.¹⁶⁹ All actions occur within a

¹⁶⁵ Tschumi, 498.

¹⁶⁶ *Ibid.*, 510.

¹⁶⁷ *Ibid.*, 502.

¹⁶⁸ *Ibid.*, 557, 493.

¹⁶⁹ US Army, ATP 5-0.1, 1-4.

broader context of complex interrelationships between actors.¹⁷⁰ They must think in terms of the interconnected and interdependent nature of the system that links state and non-state actors.¹⁷¹

To understand the context is to understand the world in the wholeness of its emergence rather than a narrow, linear summation of individual parts.¹⁷² Quantum physics indicates that the universe is a unified whole or a singular emergence.¹⁷³ This phenomenon indicates that the individuality of the parts is less relevant, and the system exhibits a different characteristic because of relationships between the interdependent variables. This characteristic leads to a tension between order and randomness.¹⁷⁴

Emergence and systemic behavior is mirrored in the cognitive domain to understand a constructed social reality as an emergence from language and socialization.¹⁷⁵ When considering that the boundaries of perceived cognitive reality can be manipulated through misinformation and deception, then war itself transcends the industrial-age concept of destruction and annihilation of fielded forces, alliances, or capitals and becomes cognitive as well as physical.¹⁷⁶ If the nature of war is to compel the enemy's compliance through force or the threat of force, then, in the cognitive space, one must create the conditions for the denial of the enemy's options, negating their freedom of action at the operational and strategic level.¹⁷⁷

Commanders and staffs should first look at the social and cultural paradigm that forms the worldview of the adversary. Then they can consider the strategic aims and political and military objects of the adversary from the adversary's perspective. Once commanders and staffs

¹⁷⁰ Bertalanffy, 5.

¹⁷¹ Dörner, 5.

¹⁷² Johnson, 19-20.

¹⁷³ Capra, 131.

¹⁷⁴ Gleick, 251.

¹⁷⁵ Berger and Luckmann, 22.

¹⁷⁶ Freedman, 199.

¹⁷⁷ Clausewitz, 75; Dolman, 33.

identify the adversary's strategic aim and political and military objects, they can create an appropriate frame to determine the overall problem. Then they can guide the development of options to address the problem by mapping the relationships between them.¹⁷⁸

The observed system allows commanders and staffs to determine forms, functions, and processes which give them a basis for framing the problem and mapping relationships.¹⁷⁹ However, any model is limited in its ability to map all the relationships or know all the aims and objects of actors within a system.¹⁸⁰ Also, what commanders and staffs do understand of the context is not constant because the system is always changing as a result of the adaptations of actors within it.¹⁸¹ However, commanders and staffs must start with an internal model of the surrounding environment, which they can revise and adapt as they learn more about the context.¹⁸² Developing an appropriate frame requires determining the scope and scale of time and space to understand the change in time and space.¹⁸³ Commanders and staffs perform this function by creating representations of a complex system to frame the system.

There are several models available to help frame the system. One is a stock and flow diagram process, described by Dr. Donella Meadows in *Thinking in Systems*. A stock is an observed property of the system and flows are the change agents, whereby the stock becomes the present memory of a history of flows.¹⁸⁴ Diagramming them together frames the system by mapping the current state of a system, and this process can be iterative over time to track changes in the system.¹⁸⁵ Another is Jamshid Gharajedaghi's holistic process of inquiry, which is useful

¹⁷⁸ Dr. Bruce Stanley, "Determining the Political Object," (lecture, School of Advanced Military Studies Seminar 3, Fort Leavenworth, February 5, 2020).

¹⁷⁹ US Army, ATP 5-0.1, 1-8.

¹⁸⁰ Meadows, 86.

¹⁸¹ Senge, 67.

¹⁸² Holland, 5.

¹⁸³ Lanir, 31.

¹⁸⁴ Meadows, 18.

¹⁸⁵ *Ibid.*, 20.

because it illustrates an iterative method to map the form, function, and process of the adversary system and its means.¹⁸⁶ Each iteration from the specific observation to the general works to expand the scope of the commander's understanding of the operational environment.¹⁸⁷

Through this process, commanders and staffs can look up and out to evaluate relationships between the adversary's strategic aim and political and military objects to determine the options available to the adversary. Weak relationships represent opportunities for exploitation to disrupt the cohesion of the adversary's strategic and operational logic.¹⁸⁸ This exploitation is the objective of a friendly operational approach that has external relevance when nested within a military strategy and part of a broader political context.

Internal coherence reflects the logic that links the individual elements of a structure, their relationships, and their functionality. In *Red is Not a Color*, Bernard Tschumi provides readers with an example of these elements: space, event, and movement.¹⁸⁹ These elements are arranged according to a program that organizes their relationships to give them coherence. The space of a structure refers to the physical dimensions of the structure and its orientation. Events are the activities that occur within a given space according to the program for the space being designed.¹⁹⁰ Movement is an element that describes the unfolding of events in time and the flow of them through space according to the program.¹⁹¹

However, it is only through their interdependent relationships that they create meaning.¹⁹² The internal logic changes if one imposes a different program over top of the space and changes

¹⁸⁶ Gharajedaghi, 112.

¹⁸⁷ *Ibid.*, 93.

¹⁸⁸ Dr. Bruce Stanley, "Determining the Political Object," (lecture, School of Advanced Military Studies Seminar 3, Fort Leavenworth, February 5, 2020).

¹⁸⁹ Tschumi, 28.

¹⁹⁰ *Ibid.*, 22, 46.

¹⁹¹ *Ibid.*, 54, 60.

¹⁹² *Ibid.*, 63.

the relationship between the elements. If an architect designs a cathedral whose program of space, event, and movement has been adapted for use as a movie theater, then the structure is not the same because its internal logic is different despite the constancy of one or more of the individual elements. The interdependency of the elements and how the program changes over time affects their relationships.¹⁹³ Architecture is a discourse of events as much as an arrangement of spaces. This discourse is possible through the manipulation of relationships and the management of tensions between the elements.¹⁹⁴ The program creates the coherency that gives meaning to the relationships between the elements.

Coherency in operational art begins with the political object, as Clausewitz established that war and politics cannot be separated and that the political object drives all activity in war.¹⁹⁵ The options for friendly action can be understood as the emergent property created by the relationship between the friendly strategic aim, political objectives, available resources, and acceptable risk. Once implemented, options will change the context and require a reframing of the problem.¹⁹⁶ Coherency is a result of the arrangement of form and function, to counter an adversary's options in pursuit of their political objectives.

Commanders and staffs frame and reframe the problem and integrate the elements of operational art in similarly coherent arrangements to create a cognitive effect or physical condition that adheres to an internal logic. Dialectical logic, the relationship between a thesis, its antithesis, and the resultant synthesis provide a logic for the process of creating an operational approach.¹⁹⁷ Plato used dialectical logic in his discourses with Socrates, as did Georg Wilhelm Frederich Hegel writing in the era of Napoleon and Clausewitz.¹⁹⁸ In Hegelian philosophy, the

¹⁹³ Tschumi, 77, 191.

¹⁹⁴ Ibid., 63-64.

¹⁹⁵ Clausewitz, 81.

¹⁹⁶ Gharajedaghi, 137.

¹⁹⁷ Russell, 732.

¹⁹⁸ Ibid., 730.

fundamental characteristic of the universe is its wholeness, which makes a dialectic an appropriate logic structure for systems thinking.¹⁹⁹ In a dialectic, the thesis is negated by its antithesis, which results in synthesis through a process of destruction.²⁰⁰ The resultant synthesis then becomes a new thesis which is again negated by its antithesis, resulting in a new synthesis through a process of creation.²⁰¹ This alternating cycle of destruction and creation interact to create a system in equilibrium.²⁰²

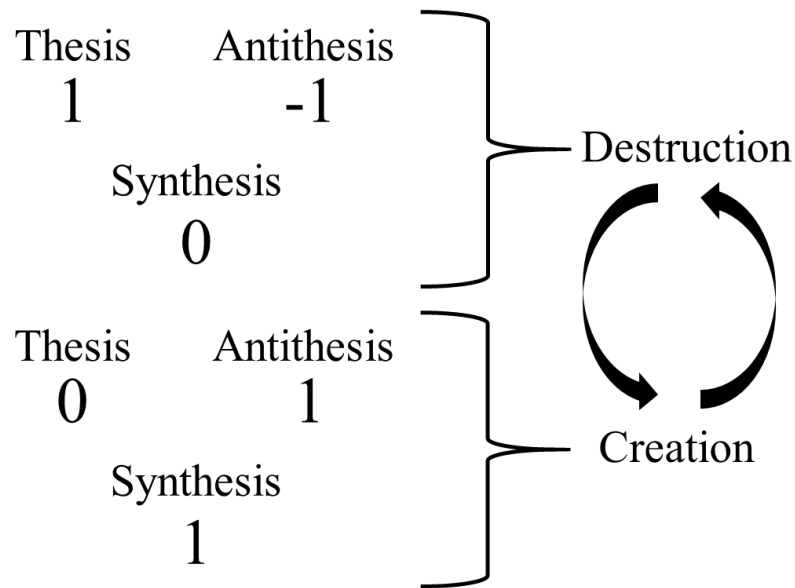


Figure 7. Dialectic of Destruction and Creation. Visual depiction of a dialectic using arithmetic figures to demonstrate Boyd’s model of destruction and creation. Figure by author.

Since an operational approach is the result of the cognitive arrangement of the elements of operational art, a dialectic of destruction and creation can be overlaid on the concepts of operational design. Commanders and staffs apply operational art through their practice of reflection/knowledge-in-action. Dialectical logic destroys the thesis of the current state through

¹⁹⁹ Russell, 731.

²⁰⁰ Russell, 732; Boyd, 322.

²⁰¹ Russell, 732; Boyd, 323.

²⁰² Boyd, 323.

an antithesis of operational design to frame the synthesis of the desired state in the process of reflection-in-action. The new thesis of the desired state is then negated through the antithesis of an operational approach to create a synthesis of the current state in the process of knowledge-in-action.²⁰³ This is a way systems thinking allows commanders and staffs to generate options for political leaders through framing the problem, manipulating the boundaries, applying resources, and articulating risk, which they further develop as an operational approach for action.²⁰⁴

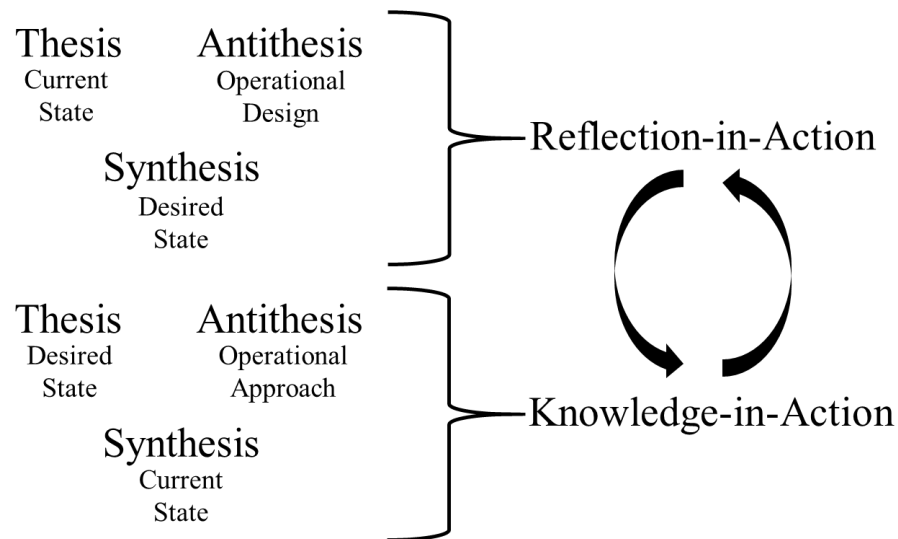


Figure 8. Dialectic of Reflection/Knowledge-in-action. Boyd’s model of destruction and creation applied to an arithmetic dialectic has been replaced with a model of Schön’s concepts of reflection/knowledge-in-action applied to a dialectic to demonstrate the development of an operational approach. Figure by author.

Strategy anticipates a desired future position of advantage that allows political and military leaders freedom of action, and it gives operational artists a form to guide their operational approach. In doctrine, the US Army defines a position of advantage as “...the establishment of a favorable condition within the area of operations that provides the commander with temporary freedom of action to enhance combat power over an enemy or influence the

²⁰³ Schön, 25-26; Boyd, 322-323.

²⁰⁴ Gharajedaghi, 137; United States Army War College, *Campaign Planning Handbook*, ed. Colonel Mark Haseman, (Carlisle: United States Army War College, 2020), 47.

enemy to accept risk and move to a position of disadvantage.”²⁰⁵ Tactical actions provide commanders with the physical means to arrange with the elements of operational art.²⁰⁶ To arrange them coherently requires a holistic appreciation of the operational approach’s function, which is to exploit the tensions between strategy and tactics, translate the cognitive aspirations of strategy into the physical action of tactics, and induce operational shock by disrupting the logic of the adversary’s system in depth.²⁰⁷ Attaining a position of advantage preserves friendly options for future action through psychologically dislocating an adversary, which is the result of their perceived loss of options or ability to exert influence.²⁰⁸

However, these effects are temporary because once force is exerted to produce change within a complex adaptive system, actors within the system adapt to the changes and attempt to push back against it.²⁰⁹ This phenomenon, called compensating feedback, occurs because the system seeks to re-establish equilibrium and demonstrates a sensitivity to initial conditions within the system.²¹⁰ The effects of compensating feedback are analogous to a damped sine wave, which depicts the residual effects of a signal through a medium that was previously at rest.²¹¹ The initial effect is a function of the strength of the input, or amplitude.²¹² Higher amplitude signals have more substantial effects, which cause more robust feedback and require more time for the medium to return to stasis.²¹³ Complex adaptive systems react to inputs similarly.²¹⁴

²⁰⁵ US Army, FM 3-0, 4-5.

²⁰⁶ Naveh, 214.

²⁰⁷ *Ibid.*, 7.

²⁰⁸ Liddell Hart, 325-326; Dolman, 9.

²⁰⁹ Senge, 58.

²¹⁰ *Ibid.*, 58, 84.

²¹¹ Morin, 15.

²¹² *Ibid.*, 5.

²¹³ *Ibid.*, 16.

²¹⁴ Bertalanffy, 150.

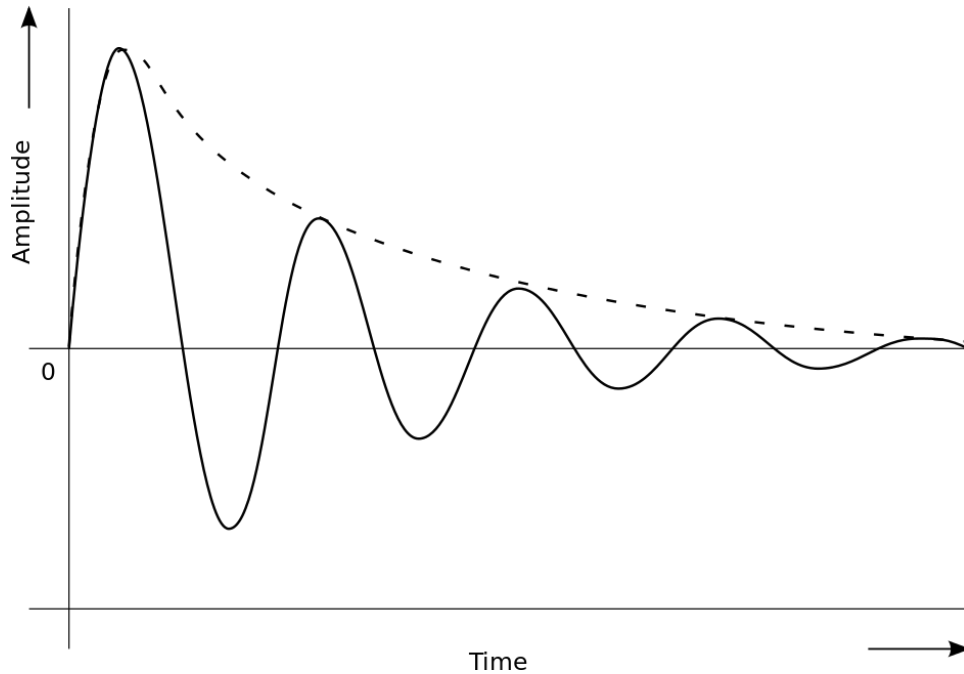


Figure 9. Damped Sine Wave. Visual depiction of a damped sine wave demonstrating the residual effects a signal has on a medium and the system’s compensating feedback to return to equilibrium. “Damped Sinewave,” Pngkey.com, accessed February 12, 2020. https://www.pngkey.com/download/u2w7a9q8y3q8r5w7_file-damped-sinewave-svg-plot/.

This systemic behavior highlights the importance of incorporating time in problem-framing to account for the temporal nature of a position of advantage created by an operational approach. A position of advantage is not static in time and reflects the dynamic relationships inherent in complex systems.²¹⁵ This temporal nature implies that strategy must be enduring, look into the future, and be inherently aspirational.²¹⁶ The primary goal becomes shortening the reflection/knowledge-in-action cycle to maintain friendly freedom of action. The second goal is to create new conditions for continuing advantage as the previous conditions are destroyed through the arrangement of tactical actions in time, space, and purpose.²¹⁷

²¹⁵ Alex Ryan, “What is a Systems Approach,” (September 10, 2008), 24.
²¹⁶ Aleksandr A. Svechin, *Strategy*, ed. Kent D. Lee (Minneapolis, MN: East View Publications, 1992), 73; Simpson, 210.
²¹⁷ Osinga, 236.

Shortening the cycle increases the likelihood commanders and staffs will anticipate an adversary's reaction to friendly actions and avoid decision-making paralysis.²¹⁸ Additionally, shortening the cycle allows us to cognitively maintain operational tempo to sequence our actions, disrupt the adversarial system's logic in depth, and induce operational shock through synchronized effects.²¹⁹ The desired state made current is then the result of manipulating the boundaries of the possible to create a cognitive effect in the world becoming, not merely the arrangement of capabilities in the physical domain of the world as it is.²²⁰

The internal logic must be brought into balance with its external application because systems interact with a surrounding environment.²²¹ Just as the architectural elements of space, event, and movement form interdependent relationships through a program, so does the program of a structure form an interdependent relationship with the external concept and context.²²² Narrative allows storytellers to link time, space, and purpose into a cohesive story that follows a central arc.²²³ In operational art, systems thinking enables commanders and staffs to create a narrative that demonstrates the relevance of friendly options in relation to the adversary's strategy within the broader context. The author suggests that narrative resonance is achieved when the elements of an operational approach are composed in a harmonic arrangement of time, space, and purpose within proper contextual understanding; and that this is a prerequisite for successfully creating a position of advantage.

Narrative contextualizes a system in a time/space logic frame that bridges the gap between internal coherence and external relevance, and it creates the linkages of strategic thought. If the aim of strategy is to seek a position of continuing advantage and is cognitive in

²¹⁸ Freedman, 201.

²¹⁹ Leonhard, 130-132.

²²⁰ Gharajedaghi, 47.

²²¹ Holland, 3.

²²² Tschumi, 488, 491.

²²³ Abbot, 3.

nature, and the aim of tactics is to seek a decisive conclusion and is physical in nature, then the role of operational art is to unify the physical actions of tactics with the cognitive aim of strategy. Operational art becomes a dialectic of reflection/knowledge-in-action to articulate options within time, space, and purpose. A key consideration in the development of an operational approach is the acceptability of the approach's risk.²²⁴ The operational approach must also be communicated in a way that is relevant to the adversary's operational logic to induce operational shock and compel their submission.²²⁵

A context-based paradigm is better suited to the human-centric Information Age by systematically operating through an iterative cycle of reflection/knowledge-in-action. Such a paradigm evaluates the relationship between itself and the context to develop understanding; and manages the tensions between time, space, and purpose to achieve the political object. It maximizes options and freedom of action through developing operational approaches that are internally coherent and externally relevant, creates equilibrium within context, and can adapt when the context changes to avoid paradigmatic crisis.

²²⁴ US Army, ATP 5-0, 1., 5-8.

²²⁵ Naveh, 16; Wylie, 124.

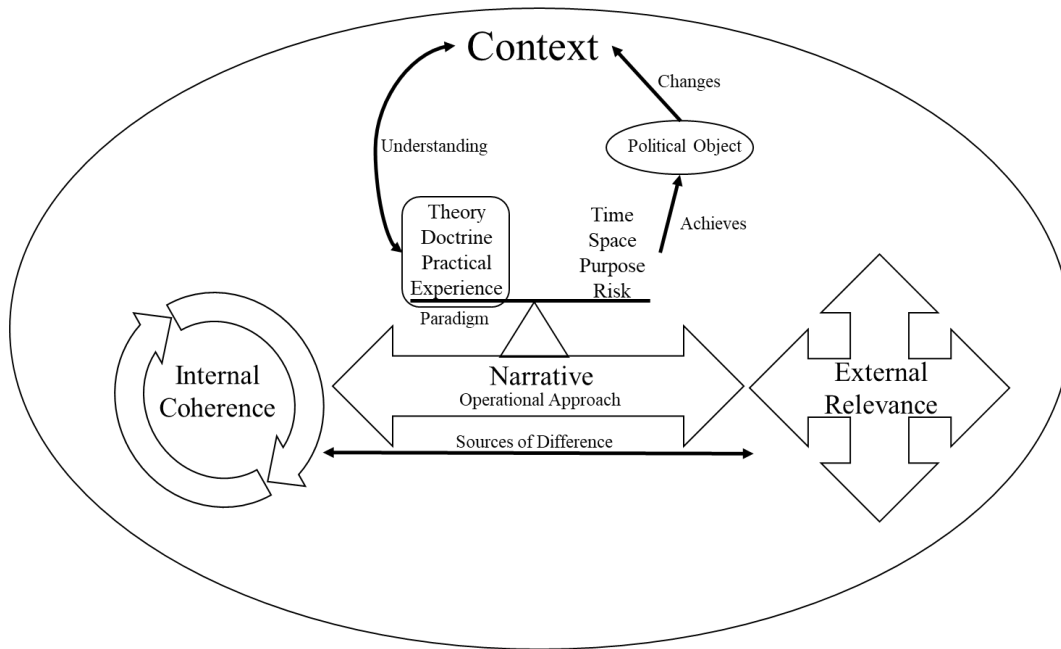


Figure 10. Narrative Resonance. Model depicting the use of narrative to link internal coherence and external relevance of an operational approach within context and identify the gaps between their sources of difference. Figure by author.

Conclusion: Change is Difficult, Irrelevance is Worse

US Army officers currently inherit a paradigm for conflict that is a synthesis of its theoretical foundation, doctrinal framework, and practical experience. The choice of Clausewitz to underpin the theory of phenomena reflects a cultural predisposition to seek a direct approach that prioritizes decisive engagement and destruction of an adversary's forces. However, how we read Clausewitz changes the meaning found in *On War*. The primacy of the relationship between war and politics is undermined through Huntington's artificial divide that overemphasizes the separateness of civilian and military roles, thereby negatively impacting civil-military dialogue.²²⁶

Clausewitz's *On War* provides a rich understanding of the complexities of politics and war when read through an appropriate lens. Reappraising *On War*, and war itself, as the synthesis of a military and political dialectic made manifest in the persons of Carl and Marie von

²²⁶ Davidson et al., 11.

Clausewitz changes the context of the dialogue.²²⁷ Through this lens, conflict and competition are better understood as a dynamic whole with emergent properties that cannot be properly evaluated by divorcing the consideration of the physical military means from the cognitive nature of the strategic aim and political objective. Achieving narrative resonance through an internally coherent and externally relevant operational approach depends on a commander's ability to cognitively act in equilibrium within an appropriate social and political context.

Current US Army doctrine highlights the importance of the commander's role in the operations process, and it places the commander's understanding of the operational environment as the primary driver of planning activity.²²⁸ However, the practical experiences of US Army officers are predominantly tactical.²²⁹ They are led by their experience to glean tactical utility from Clausewitz. They are naturally drawn to discussions about annihilating an enemy force, determining the center of gravity, and the superiority of the offensive. This practical experience facilitates a mental model that all problems have definitive solutions and leaves officers unprepared to cope with the cognitive shock of uncertainty at the operational and strategic level where there are no correct solutions, only a range of possible futures.

The natural human desire to eliminate uncertainty directly conflicts with the complex and chaotic reality of the Information Age. Commanders and staffs experience the consequent confusion and inability to make sense of the available information as decision-making paralysis and paradigmatic crisis.²³⁰ Dogmatic focus on the minute, tactical aspects of warfare prevent abstraction and the ability to create cogent narratives because narratives require a sensemaking process to smooth over the individual data points and develop a working model to inform future

²²⁷ Vanya E. Bellinger, "Marie von Clausewitz: The Woman Behind the Making of *On War*" (lecture, School of Advanced Military Studies, Fort Leavenworth, July 22, 2019).

²²⁸ US Army, ADP 5-0, 1-2.

²²⁹ US Department of the Army, "General Officer Management Office," accessed February 2, 2020, <https://www.gomo.army.mil/ext/portal/Positions/Positions.aspx>.

²³⁰ Boyd, 316; Kuhn, 74-75.

action.²³¹

Paradoxically, obsession with the details prevents the coherent development of a cognitive framework and the effective application of the lessons that details help commanders and staffs discover.²³² This paradox represents an inversion of logic. Different logic structures govern the realms of tacticians versus operational commanders and strategic leaders. A tactician operates in a world of cause and effect with direct links between action and reaction filtered through the application of capabilities. There is a definitive solution to a problem, and they seek a conclusion.²³³ An operational commander or strategic leader operates in a world of relationships with indirect links between inputs and outputs filtered through a context.²³⁴ There may not be any solutions to a problem, and they seek continuation of competition at a position of advantage.²³⁵

Commanders and staffs must accept that they exist in a world where complicated and complex problems exist simultaneously and have the cognitive flexibility to recognize when they pass through the logic inversion. Then they can act tactically and think strategically while developing operational approaches that are internally coherent and externally relevant. Some US Army officers may break from the typical path and accumulate a broader experience and education better suited to the cognitive demands of linking strategy to tactical actions in the Information Age. They will be outliers and not the norm unless a structural change occurs within the US Army's officer professional development model. The US Army must change the form, function, and process of the current system to develop officers that can execute reflection/knowledge-in-action and are skilled in systems thinking.

The US Army's officer professional development model, as designed, selects its senior

²³¹ Karl E. Weick, Kathleen M. Sutcliffe, and David Obstfeld, "Organizing and the Process of Sensemaking," in *Organization Science* 16 (July-August 2005): 419.

²³² Dörner, 77.

²³³ Dolman, 7.

²³⁴ Dolman, 108.

²³⁵ *Ibid.*, 6.

leaders for their tactical prowess. Officers conditioned by years of experience to see tactical questions will naturally substitute them for the more complex questions at the operational and strategic levels of war because of their cognitive biases. Commanders and staffs focus on American capability gaps as they relate to an adversarial theory of action through the lens of an American paradigm of conflict, not a theory of action through the lens of an adversary's paradigm of conflict. The resulting incongruence is inevitable because what we see is not the world, but the world subject to our questions.²³⁶ Operational and strategic failure occurs because commanders and staffs ask self-referential questions for tactical action to achieve a battlefield decision rather than interrogative questions for understanding the gaps between what they observe and what has changed to maximize a range of possible options.

Asking better questions is the first step to improving the commander's understanding of the operational environment, which drives the development of an operational approach.²³⁷ Commanders and staffs struggle to understand the operational environment because their fundamental assumption is that they seek to impose change externally in relation to them instead of changing themselves in relation to the context. Consequently, they are unable to adapt when the context changes. US Army officers are predisposed to substitute tactical success for operational or strategic success because their theory, doctrine, and practical experience reinforce a capabilities-based paradigm.

The technological innovations of the Information Age must be paired with innovative thinking about the phenomena of war to ensure the US Army remains relevant. New capabilities revolutionize the time/space logic of conflict, and theory and doctrine must adapt to this changed context without returning to a solution from a previous context. The current paradigm for conflict is outdated and continuing to think in the same patterns invites stagnation that declines into

²³⁶ Capra, 140.

²³⁷ US Army, ATP 5-0, 1-8.

irrelevancy. However, irrelevancy can be avoided through changing the mode of thinking about conflict. While the US Army will always need to win at the point of contact, victory at the point of contact is not synonymous with victory beyond it.

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