

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

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

1. REPORT DATE (DD-MM-YYYY) 03/31/2017	2. REPORT TYPE Master's Thesis	3. DATES COVERED (From - To) 07/21/2016 to 03/31/2017
--	--	---

4. TITLE AND SUBTITLE GAINING THE LONG VIEW: REFORMING ORGANIZATION AND EMPOWERING KNOWLEDGE WORKERS TO IMPROVE STRATEGY AND INTELLIGENCE	5a. CONTRACT NUMBER
	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER

6. AUTHOR(S) Mr. Charles H. Benson III, DOD Civilian	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)	8. PERFORMING ORGANIZATION REPORT NUMBER
---	---

9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Joint Forces Staff College Joint Advanced Warfighting School 7800 Hampton Blvd Norfolk, VA 23511-1702	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release, distribution is unlimited.

13. SUPPLEMENTARY NOTES
Not for Commercial Use without the express written permission of the author.

14. ABSTRACT
A dearth of strategy exists in the U.S. government. The Global War on Terror and the emergence of diverse, insidious, and disparate threats to national security now dominate the focus of the Defense Intelligence Enterprise and the Department of Defense and Inter-agency customers it supports. The rapidly-changing character of the strategic environment demands greater effort to anticipate surprises and create strategies to address them. Doing this requires a strategy-minded workforce, organizations to encourage creative thinking and innovation, and a greater demand signal from leaders for strategically-oriented staff products.

15. SUBJECT TERMS
Innovation, Strategy, Intelligence, Planning, Organizational Structure, Foresight, Workforce Competencies, Strategic Estimate, Annual Joint Assessment, Campaign Assessment

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Unclassified Unlimited	18. NUMBER OF PAGES 80	19a. NAME OF RESPONSIBLE PERSON Charles Hodges Benson III
a. REPORT Unclassified	b. ABSTRACT Unclassified	c. THIS PAGE Unclassified			19b. TELEPHONE NUMBER (Include area code) 757-443-6301

NATIONAL DEFENSE UNIVERSITY
JOINT FORCES STAFF COLLEGE
JOINT ADVANCED WARFIGHTING SCHOOL



**GAINING THE LONG VIEW: REFORMING ORGANIZATION AND
EMPOWERING KNOWLEDGE WORKERS TO IMPROVE STRATEGY AND
INTELLIGENCE**

By

Charles Hodges Benson III

DOD Civilian

Not for commercial use without the express written permission of the author.

Intentionally left blank

**GAINING THE LONG VIEW: REFORMING ORGANIZATION AND
EMPOWERING KNOWLEDGE WORKERS TO IMPROVE STRATEGY AND
INTELLIGENCE**

by

Charles Hodges Benson III

DOD Civilian

A paper submitted to the Faculty of the Joint Advanced Warfighting School in partial satisfaction of the requirements of a Master of Science Degree in Joint Campaign Planning and Strategy. The contents of this paper reflect my own personal views and are not necessarily endorsed by the Joint Forces Staff College or the Department of Defense.

This paper is entirely my own work except as documented in footnotes. (or appropriate statement per the Academic Integrity Policy).

Signature: _____



21 April, 2017

Thesis Advisor:

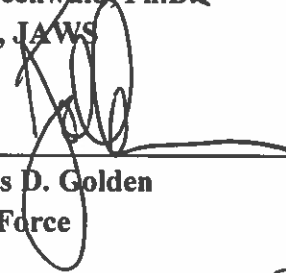
Signature: _____



**Bryon Greenwald, Ph.D.
Professor, JAWS**

Approved by:

Signature: _____



**Col James D. Golden
U.S. Air Force**

Signature: _____



**Stephen C. Rogers, Colonel, USA
Director, Joint Advanced Warfighting
School**

Intentionally left blank

ABSTRACT

A dearth of strategy exists in the U.S. government. The volatile post-Cold War security environment drove the Department of Defense bureaucracies to adapt business processes and structures to cope with crises. The Global War on Terror and the emergence of diverse, insidious, and disparate threats to national security now dominate the focus of the Defense Intelligence Enterprise. Senior leaders and policy-makers laboring to keep abreast of the events of the day put current intelligence in high demand. Planners are likewise consumed with current operations and rarely engaged in planning beyond a five-year time horizon. Thus, there is little demand for long-term assessments or analysis, and few resources are dedicated to strategic estimates. The rapidly-changing character of the strategic environment demands greater effort to anticipate surprises and create strategies to address them. Achieving a strategy-minded workforce requires reorganization and better management to encourage creative thinking and innovation from knowledge workers, and a greater demand signal from leaders for strategically-oriented staff products. Without strategic vision and strategic foresight informed by well-developed strategic intelligence estimates, the United States and its military establishment will continue to lurch from daily crisis to daily crisis and continue to mistake near-term activity for long-term progress toward greater national security.

Intentionally left blank

Dedication

To my wife, my best friend. To the day we can put the yellow ribbons away and say goodbye to goodbyes.

Acknowledgements

Countless thanks to Col. James Golden and Dr. Bryon Greenwald for their patience, constant encouragement, and clear-eyed guidance throughout this process. To the Seminar 1 faculty, Dr. Keith Dickson and Dr. Gregory Miller, for their enlightening, scholarly leadership. Thanks to Mr. Rick DeLauter, DIA, for his servant-leadership, and for recommending me for this amazing experience. I am also indebted to Mr. Jeffrey Turner and the professional and objective editorial advice he provided, which greatly improved the quality of this paper and the quality of my thought. And finally, to my contemplative heroes, the family members and friends who have taught me so much and given me examples to follow.

Table of Contents

Chapter 1: Reconstituting Strategic Intelligence	1
Introduction	1
Methodology	5
Chapter 2: Organizing for Change	7
Holacracy: The Unorganized Organization.....	8
Flat or Flattened Bureaucracy	10
Ambidextrous Organizations.....	13
The Traditional “Tall” Hierarchical Bureaucracy.....	15
Knowledge Work, Autonomy, and Creativity	20
Chapter 3: Workforce Competencies.....	24
Strategic Thinking, Critical Thinking, and Creativity.....	25
Nurturing Foresight.....	30
Joint Preparation of the Strategic Environment (JPSE)	38
Chapter 4: Application to the Strategic Estimate.....	43
The Theater Campaign Plan (TCP).....	44
The Campaign Assessment Process (CAP).....	45
The Comprehensive Joint Assessment (CJA).....	48
Chapter 5: Conclusion.....	51
Bibliography	59
Vitae.....	70

Intentionally left blank

Chapter 1: Reconstituting Strategic Intelligence

Introduction

When a city can live in peace and quiet, no doubt the old-established ways are best: but when one is constantly being faced by new problems, one has also to be capable of approaching them in an original way. – Thucydides¹

Over the past 25 years, observers of the intelligence community have commented on the steady erosion of the strategic intelligence analysis capability developed during World War II and refined through the Cold War. The demise of the Soviet Union and the emergence of newer, more diverse and decentralized threats to national security have driven the Defense Intelligence Enterprise (DIE) to a greater focus on tactical intelligence related production and crisis response. In 1992 Ernest May wrote that “strategic intelligence has become tactical intelligence and vice versa.”² More recently, one analyst noted that “in the real world four modes of intelligence now predominate. None of them is about strategic intelligence.”³ Another author identified ten “pathologies of intelligence analysis,” three of which relate directly to the demise of strategic intelligence capability: “the tyranny of current intelligence, the neglect of research, and the neglect of anticipatory intelligence.”⁴ Far from a one-off observation, the 2008 and 2012 RAND Corporation studies led by former National Intelligence Council Chairman Gregory Treverton also highlight this as a persistent issue.⁵

¹ Thucydides, *History of the Peloponnesian War*, trans. Rex Warner (New York: Penguin Books, 1972), 77.

² Ernest R. May, “Intelligence: Backing Into the Future,” *Foreign Affairs* 71, no. 3 (Summer 1992): 64.

³ Richard J. Aldrich and John Kasuku, “Escaping from American intelligence: culture, ethnocentrism, and the Anglosphere,” *International Affairs* 88, no.5 (2012): 1010.

⁴ Jeffrey R. Cooper, *Curing Analytic Pathologies; Pathways to Improved Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, December 2005), 29-39.

⁵ Gregory F. Treverton and C. Bryan Gabbard, *Assessing the Tradecraft of Intelligence Analysis* (Santa Monica, CA: RAND Corporation, 2008). Specifically, this report notes that “The overarching generality about the U.S. intelligence analytic community today is that most of it is engaged in work that is tactical, operational, or current” and “If the emphasis on immediate reporting is sharper now, that is so because it is

These observations suggest that an entire generation of military intelligence professionals and the majority of their civilian counterparts have focused almost exclusively throughout their careers on the production of current, or explanatory, intelligence rather than strategic, or exploratory, intelligence. Furthermore, the defense intelligence enterprise itself has also evolved and adapted the business processes and structures of its constituents to better manage crises and support current intelligence production. This adds to the difficulty of any effort to reconstitute a strategic analytic capability and indicates that change is required to the organizations comprising the DIE if the effort is to succeed.⁶

The same can be said for the planning community, and for the same reasons. An entire generation of planners has been tactically and operationally focused, and few have been engaged in strategy development or planning beyond a five-year horizon. Recent assessments of the Senior Professional Military Education curricula reveal the extent to which thinking about the future and anticipating challenges and opportunities that might emerge in the strategic environment take a back seat to studying the past and trying to make sense of the present. This reflects an institutional bias that values short-term planning and problem-solving over long-range, strategic design.⁷ A co-dependent

what many national intelligence consumers want (or, at least, it is what they get because they do not ask for longer-term analyses). . ." (p.1). Also see Gregory F. Treverton and Jeremy J. Ghez, *Making Strategic Analysis Matter* (Santa Monica, CA: RAND Corporation, 2012), and Rob Johnston, *Analytic Culture in the U.S. Intelligence Community* (Washington, DC: Center for the Study of Intelligence, 2005).

⁶ Regarding the use of the term strategy throughout this essay, the term is temporal in scope and not bounded by a level of war. More precisely, it is concerned with the future (5-20 years). Furthermore, it considers the changing character of human conflict and war, including the actors, their sources of power, and the means with which adversaries engage one another. Finally, strategy, as it is used herein, considers the application of all of the instruments of power toward the attainment of national goals in cooperation, in competition, and at times in conflict with, other state and non-state actors.

⁷ Theodore C. Hailes, "Building Creative Military Leaders: Challenges to Overcome," in *Changing Mindsets to Transform Security: Leader Development for an Unpredictable and Complex World*, ed. Linton Wells II, Theodore C. Hailes, and Michael C. Davies, (Washington, DC: Center for Technology and National Security Policy, Institute for National Strategic Studies, National Defense University, 2013):215-

relationship now exists wherein counter-terrorism and crisis response preoccupy the DOD, and the operational intelligence requirements of the department reinforce the short-term focus of intelligence analysis. A growing body of literature has taken notice and expounds on the paucity of strategic planning capability in the Department of Defense due to the operational and tactical focus, and elaborates on its causal factors.⁸

The structure and management processes prevalent throughout DOD organizations reflect the industrial age approach to warfare that enabled large field armies to engage in battles of attrition with similarly armed and organized adversaries. But the functionally stove-piped staff, rigid rank-based hierarchical structures, and masses of fungible workers that are the legacy of 19th and 20th Century warfare are poorly suited to the type of conflict that has dominated the early 21st Century.⁹ Like modern business, the military is learning that, if it is to survive and adapt to a highly competitive environment of rapid change and diverse sources of competition, it needs to become more agile, adaptable, and innovative. Engaged, creative, and resourceful networks of knowledge workers are required to cope with adversaries who are similarly motivated, networked, and innovative. Moreover, DOD organizations must continue to foster learning and change with an eye to the future that is informed by, but not anchored to, history.

232. Hailes cites two studies that show only 7 percent of Senior PME is devoted to thinking about the future and that the future considered is less than 5 years distant.

⁸ See, Margaret M. Polski, "Strategy 2.0: The Next Generation," *Joint Forces Quarterly* 81 (2nd Quarter 2016): 19-25. Also see, Catherine Dale, *The 2014 Quadrennial Defense Review (QDR) and Defense Strategy: Issues for Congress*, (Washington, DC: Congressional Research Service, 24 February 2014). Dale speaks to the disjointed character of strategy development and strategic thinking across the Department of Defense noting, "Some observers point to an enduring requirement for DOD to have an appropriate internal "strategic engine" to generate ideas, and to help ensure the strategic rigor of formal review processes such as the QDR as well as other internal strategy debates (18-19)." Also see Andrew F. Krepinevich and Barry D. Watts, *Strategy for the Long Haul: Regaining Strategic Competence*, (Washington, DC: Center for Strategic and Budgetary Assessments, 2009). Krepinevich and Watts examine the decline of strategic competence within the U.S. Government and challenges to overcome in restoring it.

⁹ John F. Price, Jr., "Napoleon's Shadow: Facing Organizational Design Challenges in the U.S. Military," *Joint Forces Quarterly* 68 (1st Quarter 2013): 48-52.

Strategic intelligence capability requires the development of strategic thinking skills within both the analytic and planning workforces because, while it is often claimed that intelligence drives operations, the relationship differs when it comes to strategy. In this case, planning has at least an equal role and arguably a leading one. Most combatant command (CCMD) staff offices lack the time and resources required to gain an understanding of the complex character and interrelated nature of the threats and opportunities present in the strategic environment. The capacity for thinking about the future or gaining foresight into possible future scenarios is even more limited. Staffs prioritize the allocation of their scarce resources toward satisfaction of the requirements that are most in demand from their customers. If the demand signal from planners for future-oriented intelligence estimates is weak, the response will be weak as well. There is also a growing recognition of the shortcomings of the department's campaign plan phasing model with regards to its relevance to the development of strategies for managing the threats and opportunities present in today's global security environment.¹⁰ The same can be said of the efficacy and relevance of intelligence analytic methodologies and Joint Doctrine currently in use regarding intelligence preparation of the operational environment.¹¹ Therefore, to reconstitute strategic intelligence, DOD must revamp its organizational structures and workplace environments, change how it assesses, educates,

¹⁰ See Antulio J. Echevarria II, *Operating in the Gray Zone: An Alternative Paradigm for U.S. Military Strategy* (Carlisle Barracks, PA: U.S. Army War College Press, April 2016), and Nathan P. Freier, et al., *Outplayed: Regaining Strategic Initiative in the Gray Zone* (Carlisle Barracks, PA: U.S. Army War College Press, June 2016).

¹¹ Brian M. Ducote, *Challenging the Application of PMESII-PT in a Complex Environment*, (FT Leavenworth, KS: School of Advanced Military Studies, United States Army Command and General Staff College, May 2010), and also Welton Chang, "Fixing Intelligence: Reforming the Defense Intelligence Enterprise for Better Analysis," *American Intelligence Journal*, Vol 31, No. 1 (January 1, 2013): 86-90.

and leads its knowledge workers, and adopt new methods and doctrine to guide their work.

Methodology

Structural and cultural characteristics of US intelligence organizations shape the cognitive processes of their members, contribute to intelligence failures, and pose significant obstacles to change.¹² In order to determine possible solutions to the shortfall in strategic analytical intelligence, one must first examine intelligence organizations and the structural characteristics influencing their adaptability. There are two reasons for this consideration: first, lessons learned in war and commerce clearly demonstrate the advantage adaptable, learning organizations possess over rigid ones.¹³ Second, lessons learned in public and private enterprise regarding the influence of the structural and social environment of organizations on the productivity of knowledge workers indicate that the current hierarchical bureaucratic model employed by the DOD does not promote creative thinking or knowledge work, and consideration should be given to alternative organizational and management schemas to encourage innovation. Planners and intelligence analysts are knowledge workers who, in this context, endeavor to understand the complex threats and opportunities that are shaping our world, and assist leaders in

¹² Matthew M. Aid, "Sins of Omission and Commission: Strategic Cultural Factors and U.S. Intelligence Failures During the Cold War," *Intelligence and National Security* 26, no. 4 (August 2011): 478-494. The author lists oversimplification of threats, intelligence by consensus, risk aversion, unyielding adherence to the rational actor theory, a predilection towards guesstimating in the absence of evidence, and politicization of the intelligence process as the strategic cultural factors that have contributed to failures. Also see Daniel Javorsek II and John G. Schwitz, "Probing Complexity, Uncertainty, and Human Agency in Intelligence," *Intelligence and National Security* 29, no. 5 (2014): 693-653. The "pull of determinism in intelligence" discussed in this paper is another example of how strategic cultural factors shape the cognitive processes of analysts.

¹³ For a business perspective on adaptability see, Martin Reeves and Mike Deimler, "Adaptability: The New Competitive Advantage," *Harvard Business Review* (July/August 2011): 135-141; for the military perspective see, Howard, Michael. "Military Science in the Age of Peace." *RUSI* (March 1974): 3-10.

making decisions that have far-reaching consequences. “In this type of operational environment three essential elements interact constantly: knowledge workers, technology, and organizations.”¹⁴ To this end, a survey of the literature on organizational structures to determine how they promote innovation shows that while adaptation and innovation are widely claimed as priorities and desirable attributes by senior leaders across the DOD, procurement processes, service cultures, and a host of additional factors make operationalizing them difficult within military organizations. This institutional resistance to change is such that “innovation is not a scientific or technical problem; it is an organizational challenge.”¹⁵ Such an insight drives an interrogation of the literature available on intelligence analysis and military planning to identify the knowledge, skills, and abilities required to conduct strategic planning and intelligence. These writings confirm that strategic thinking skills and the capacity for foresight are in short supply across the workforce due to the tactical focus of institutions and a diminishing demand signal for long-range planning and strategy development. Finally, the application of foresight methodologies to the development and assessment of combatant command strategies, theater campaign plans and the strategic estimates that frame them is recommended as a step toward restoring strategic intelligence and strategic planning capacity.

¹⁴ Wayne M. Hall, *Stray Voltage: War in the Information Age* (Annapolis, MD: Naval Institute Press, 2003), 15.

¹⁵ Andrew Hill, “Military Innovation and Military Culture,” *Parameters* 45, no. 1 (Spring 2015): 85.

Chapter 2: Organizing for Change

Changing a culture is like moving a cemetery: it is always difficult and some believe it is sacrilegious – James Q. Wilson¹

What is the right organization? As Peter Drucker wrote, “there is no such thing as the one right organization. There are only organizations, each of which has distinct strengths, distinct limitations, and specific applications. . . . As such, a given organization structure fits certain tasks in certain conditions and at certain times.”² Drucker advised his readers to conduct an unbiased consideration of all organizational models, identify their best attributes, and find the appropriate combination for the task at hand. Drucker also suggested that one should be open to continued change in response to emerging challenges and opportunities in the environment.³

Planners and intelligence analysts are knowledge workers, and a considerable body of literature accumulated over the past fifty years indicates that for knowledge workers, the management styles utilized to guide them and the organizational structure in which they work significantly affects their productivity, creativity, and ability to innovate. This section examines the strengths and weaknesses of four structural models for organizations in managing knowledge workers who are engaged in the development of strategic estimates and other future-focused products. These structures represent four points on a bureaucratic continuum, from self-organized to rigid hierarchy. Andrew Hill

¹ James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (New York: Basic Books, 1989), 368.

² Peter Drucker, *The Essential Drucker: Selections from the Management Works of Peter F. Drucker* (New York: HarperCollins, 2001), 73.

³ J. Stuart Bunderson, et al. “Different Views of Hierarchy and Why They Matter: Hierarchy as Inequality or Cascading Influence,” *Academy of Management Journal* 59, no. 4 (2016): 1265–1289. This study illuminates how the assumptions of researchers regarding the functional or dysfunctional nature of relationships within hierarchies influence the findings of their studies.

and Stephen Gerras observe that successful organizations often invest so much energy maintaining the status quo that they undermine continuous learning and improvement. These organizations develop “systems of denial,” which consist of processes and procedures that make responses to “inconvenient information” difficult and ultimately serve to undermine their ability to adapt to the rapid changes inherent in a highly competitive environment.⁴ The degree to which institutional structures are susceptible to systems of denial increases not only as they become more successful, but also as they grow and become more complex and hierarchical.

Holacracy: The Unorganized Organization

A holacracy is a self-managed, highly autonomous team or organization.⁵ These types of organizations are becoming more practical with the steady advance of information and communication technologies, which enable ready access to vast amounts of information from a wide array of sources by all members of an enterprise. Holacracy is a relatively new label for an organizational construct that has been around for at least 65 years in both the private and public sectors. These organizations began to gain broader acceptance in the 1970s with the participative management and industrial democracy movements in Europe, quality circles made popular in Japan as a means of continuous process improvement, and innovation task forces within the U.S. government.⁶ The

⁴ Andrew Hill and Stephen Gerras, “Systems of Denial: Strategic Resistance to Military Innovation,” *Naval War College Review* 69, no. 1 (Winter 2016): 109-132. Examples of these systems of denial are: killing the messenger, or questioning the source of the anomaly; questioning the data, and; shape shifting, or resisting refutation through constant theoretical change.

⁵ John Kamensky, “Can Self-Managed Teams Work in Government?” *Government Executive*, (09 August 2016): <http://eds.b.ebscohost.com/eds/detail/detail?sid=1aaf8e80-4ce5-4c40-89fc-a5efdd5de8ed%40sessionmgr105&vid=2&hid=108&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=117366732&db=mth> (accessed 23 September, 2016).

⁶ Ethan Bernstein, et al. “Beyond the Holacracy Hype: The overwrought claims—and actual promise of—the next generation of self-managed teams,” *Harvard Business Review* (July-August 2016): 38-49.

advantage of a holacracy is that the organization is highly malleable and employees can rearrange themselves quickly into new work units in response to an emerging opportunity or to respond to a crisis without interference from management. Holacracy advocates assert that “traditional management goes wrong when the boss gets to prescribe what must be done— or how—because of a job description, not because he or she has particular insight into what will produce the desired outcome.”⁷ In a holacracy, leadership is passed from one worker to another based upon the requirements of the task at hand and the special skill or unique knowledge each worker brings to the team. This provides a means of enabling innovation within the enterprise by removing management-exclusive authority to direct the structure of the organization and control the flow of information and collaboration between teams. A low degree of job formalization or specialization is a common trait of holacracies because workers can assume new roles as units self-organize in response to new tasks.⁸ While these characteristics promote a high degree of adaptability across the organization, they also present a host of challenges to senior leaders and human resource departments.⁹ As a result, holacracy has proven difficult to establish widely within large enterprises and the literature indicates many early adopters of this type of organization have either limited its implementation or abandoned it

⁷ Ethan Bernstein, et al. “Beyond the Holacracy Hype,” 44.

⁸ While there are many barriers to holacracy in the military (rank structure is prominent among them), the benefit gained from shared leadership among team members and the ability to reorganize and refocus quickly in response to new challenges is gaining recognition. See Douglas R. Lindsay, David V. Day, and Stanley M. Halpin, “Shared Leadership in the Military: Reality, Possibility, or Pipedream?” *Military Psychology* 23 (2011): 528-549.

⁹ Jerry Useem, “Are Bosses Necessary?” *The Atlantic* (October 2015): 28-32.

completely.¹⁰ This does not mean that holacracy is a failed construct, but it is one with a mixed record of success.

Flat or Flattened Bureaucracy

It might be a law of nature that whenever two people engage in work toward a common goal, one of them will be in charge. Thus, flat organizations are also hierarchies, but less so than traditional bureaucracies.¹¹ The flat organization shortens the lines of communication between the top and bottom levels of the organization. Flat organizations are decentralized in terms of management control functions, and their workers have a low degree of job formalization or specialization, and a greater degree of autonomy to collaborate with others within and outside their work unit. Workers also make decisions regarding the prioritization and focus of their work. These organizations are described as organic rather than mechanistic, networked rather than stove-piped, have a high degree of flexibility in terms of processes, have a low degree of job formalization (or specialization), and are more likely to foster creativity and innovation.¹²

These traits are among the characteristics commonly attributed to learning organizations. Organizational learning is an enabler, and even an accelerant of

¹⁰ Ibid. Also see Jennifer Reingold, “The Zappos Experiment,” *Fortune* (March 15, 2016): 206-214. Zappos may be the best known company organized completely as a holacracy. This article illuminates many of the challenges associated with this organizational construct. For example, when Zappos offered a buyout to employees unhappy with the organization’s lack of structure and stable job roles, 29% accepted.

¹¹ In fact, one recent study reveals that “hierarchy is a ubiquitous organizing principle in biology,” see Henok Mengistu, et al. “The Evolutionary Origins of Hierarchy,” *PLOS Computational Biology* (June 9, 2016): 1-23. <http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=e6616f59-0527-43fe-b3c9-f34f032a30b6%40sessionmgr107&hid=113> (accessed 11 October, 2016).

¹² Larry L. Cummings, Bernard L. Hinton, and Bruce C. Gobdel, “Creative Behavior as a Function of Task Environment: Impact of Objectives, Procedures, and Controls,” *Academy of Management Journal* 18, no. 3, (September 1975): 489-499. Research into the applicability of flat or networked organization in military organizations reveals similar positive outcomes as are reported for the business community, see Anne Lise Bjornstad, “Exploring Network Organization in Military Context: Effects of Flatter Structure and More Decentralized Processes,” *Military Psychology* 23 (2011): 315-331.

innovation.¹³ Lessons learned programs, after action reports, customer satisfaction surveys, and operational assessments are examples of practices learning organizations employ to maintain their competitive advantage in the marketplace. The same holds true in the military as well, and throughout history the victors in war have tended to be on the side that recognized early on the value of critical analysis of its failures on the battlefield and learned from them.¹⁴

The flat organizational construct is not without its challenges, however. In his book *Team of Teams*, General Stanley McChrystal recounts how highly efficient special operations teams were routinely frustrated by “blinks,” or “interface failures” in the flow of information resulting from the balkanized character of their organizational environment. Intelligence analysts, ISR platform managers, special operators, law enforcement agency representatives, and State Department staffers all operated in silos of expertise that generated excellent outcomes in their own right, but often failed in achieving collective success because they lacked the foundation of mutual trust required to support an adaptive and rapidly shared situational understanding.¹⁵ McChrystal’s

¹³ Swee C. Goh, “Toward a Learning Organization: The Strategic Building Blocks,” *SAM Advanced Management Journal*, (Spring 1998): 15-22. Goh conducted a survey of business management literature and identified five commonly-cited attributes of effective learning organizations: 1. Clarity and support for mission and vision; 2. Shared leadership and involvement; 3. A culture that encourages experimentation; 4. Ability to transfer knowledge across organizational boundaries; and 5. Teamwork and cooperation. The building blocks require two supporting foundations; Organizational Design and Employee Skills and Competencies. Also see Somaieh Alavi, et al. “Organic Structure and Organisational Learning as the Main Antecedents of Workforce Agility,” *International Journal of Production Research* 52, no. 21 (2014): 6273–6295.

¹⁴ See Williamson Murray, “The Historical Framework of Adaptation,” in *Military Adaptation in War*, (Alexandria, VA: Institute for Defense Analysis, June 2009): 2-1–2-42. There are flat organizations in DOD, and one example is the U.S. Navy Strategic Systems Program, which is responsible for nuclear systems. In this organization, safety drives decentralized decision-making. This is meant to encourage critical thinking and learning by all members and avoid the kind of groupthink that leads to cascading mistakes and disaster. See Christopher Phillips and Bobbie DeLeon, “Redefining the “Can Do” Attitude: The Language of a Critical Thinking Culture,” *Defense AT&L* (January-February 2017): 45-47.

¹⁵ Stanley McChrystal, *Team of Teams: New Rules of Engagement for a Complex World*, (New York: Portfolio/Penguin, 2015).

organization learned over time that in order to overcome a highly adaptive, thinking, and networked enemy enterprise, it too needed to become more adaptive, thinking, and networked.

McChrystal's team reinvented their organization by flattening its command and control processes and pushing responsibility for operational coordination and decision-making to the edge of the enterprise. They eliminated blinks by establishing networks of personal relationships between members of his teams as well as those of their supporting and supported organizations. In a similar vein, General Anthony Zinni spoke to the need for military organizations to break away from the Napoleonic staff model when he declared, "the antiquated organization is at odds with what everyone else in the world is doing: flattening organization structure, decentralizing operations, and creating more direct communications."¹⁶ McChrystal and Zinni recognize how the interrelated networks of individual members of their teams with members of other teams has a synergistic effect on knowledge and adaptability. This synergy is difficult to achieve through stove-piped, hierarchical bureaucratic processes. To improve synergy, human resource professionals in the private sector have begun to examine the utility of complexity theory and complexity science for improving the ability of organizations to innovate and adapt. This approach views the networks of relationships of workforce members as a complex adaptive system that generates social capital, or "the competitive advantage that is created based on the way an individual is connected to others within an organization."

¹⁶ Anthony C. Zinni, "A Commander Reflects," *U.S. Naval Institute Proceedings*, Jul 2000, Vol. 126, Issue 7, <http://eds.b.ebscohost.com/eds/detail/detail?vid=2&sid=56027665-953f-4d39-8c4a-bbdcd65017e%40sessionmgr104&hid=126&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=3356479&db=aph> (accessed 22 September, 2016).

Therefore, to increase social capital, workers are encouraged to collaborate with others more freely than is permitted in closely managed hierarchical bureaucracies.¹⁷

Ambidextrous Organizations

The strength of the ambidextrous organization is its capacity for simultaneous “incremental” innovation and “radical or disruptive innovations.” These organizations accomplish this by concentrating the bulk of traditional products and services in one business unit or department and the development of new products and services in another.¹⁸ An advantage of this type of structure is that an experimental or innovation-focused unit can exist alongside a more traditional change-resistant unit and satisfy the needs of reliability and adaptability simultaneously. Ambidextrous organizations are resilient to changes in the environment because they possess the ability to exploit their core strengths to maintain a competitive advantage in their established field while exploring new opportunities and adopting strategies to overcome emerging challenges.¹⁹ Characteristics of ambidextrous organizations include a strong senior leadership team that integrates the direction and culture of the overall enterprise, and an “acceptance of two

¹⁷ Michael J. Arena and Mary Uhl-Bien, “Complexity Leadership Theory: Shifting from Human Capital to Social Capital,” *People + Strategy*, Vol. 39, Issue 2 (Spring 2016): 22. Literature regarding the application of complexity theory to military leadership and personnel management is not as prolific as that in the private sector, but for excellent example, see Christopher R. Papparone, Ruth A. Anderson, and Reuben R. McDaniel, Jr., “Where Military Professionalism Meets Complexity Science,” *Armed Forces & Society* Vol. 34, No. 3 (April 2008): 433-449.

¹⁸ Charles A. O’Reilly III and Michael L. Tushman, “The Ambidextrous Organization,” *Harvard Business Review* (April 2004): 76. The study reported in this article claims that ambidextrous organizations outperform all other organizational types.

¹⁹ Antonio Nieto-Rodriguez, “Ambidexterity, Inc.,” *Business Strategy Review* Issue 3 (2014): 36, <http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=103389226&S=R&D=buh&EbscoContent=dGJyMNHr7ESeprc4zdnyOLCmr06eprdSs6%2B4Ta%2BWxWXS&ContentCustomer=dGJyMPGpt02xr65LuePfgex43zx> (accessed 09 October, 2016). Also see Arena and Uhl-Bien, “Complexity Leadership Theory: Shifting from Human Capital to Social Capital,”:24.

different processes, structures, and cultures; at the same time,”²⁰ and “strategy development that flows from the bottom up.”²¹

Ambidextrous organizations are not perfect and, ironically, their ability to operate in the present while exploring future possibilities is also cited as a source of institutional friction, namely, that it is challenging for senior leaders to balance the focus of their attention on multiple dimensions of the enterprise simultaneously.²² For example, in one study, the majority of leadership teams observed predominantly focused on running the business and rewarded employees engaged in those activities more than employees engaged in exploratory or entrepreneurial business activities. Without careful attention, this lopsided managerial perspective can result in an imbalanced distribution of rewards that favors workers engaged in exploitative activities over those engaged in innovation.²³ An unintended consequence of this behavior is the loss of innovators through promotion, which occurs in organizations that reward managers and other exploitation-focused workers more frequently than those engaged in exploration and innovation. Senior leadership can enable exploration activities by exhibiting behaviors for others in the enterprise to emulate, such as personally leading or participating in innovation-related activities. Leaders can serve as “conduits” for new knowledge to enter the organization through their networks of potential collaborators from other organizations.²⁴ Leaders of

²⁰ O’Reilly and Tushman, “The Ambidextrous Organization,” 75.

²¹ Michael L. Tushman and Charles A. O’Reilly III, “Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change,” *California Management Review* 38, no. 4 (Summer 1996): 27.

²² Nieto-Rodriguez, “Ambidexterity, Inc.,” 36.

²³ Ibid. 39. These findings are echoed in a comprehensive review of ambidextrous organizations that revealed 80% of firms studied overemphasize exploitation and underutilize exploration; see, Charles A. O’Reilly III and Michael L. Tushman, “Ambidexterity: Past, Present, and Future,” *The Academy of Management Perspectives* (November 1, 2013): 326.

²⁴ Hsing-Er Lin and Edward F. McDonough III, “Investigating the Role of Leadership and Organizational Culture in Fostering Innovation Ambidexterity,” *IEEE Transactions on Engineering Management* 58, no. 3 (August 2011): 506.

these organizations can also employ techniques to bridge gaps between exploitive and exploratory units by fostering personal working relationships between members of their teams in much the same way McChrystal did in Iraq. The persistent engagement between team members builds mutual trust and confidence, which is essential to the adoption of new ideas and practices by the operational unit.

The Traditional “Tall” Hierarchical Bureaucracy

Military organizations are hierarchical bureaucracies designed to enable centralized command and control processes wherein orders flow from top to bottom and status reports flow from bottom to top in an orderly and efficient fashion. This hierarchical form of organization is applied with very few exceptions throughout the U.S. Department of Defense, and is as familiar to a rifleman or tank crewman in a brigade combat team as it is for a civilian budget analyst in a combat support agency. While much maligned, bureaucracy is among the most significant innovations in the history of mankind and is one of the earliest achievements of modern civilization.²⁵

When it comes to innovation, bureaucracies are highly resistant because they exist as a means of standardizing behavior to support repeatable processes with consistent outputs. In fact, the strength of the bureaucracy lies in the consistency and uniformity of its constituent processes. Hierarchical bureaucracies also provide the workforce with a predictable, structured work environment, a sense of status, and other psychological

²⁵ Roger Smith, “Bureaucracy as Innovation,” *Research–Technology Management* (January-February 2016): 61-63. For an insightful treatment of bureaucratic behavior, good and bad, see James Q. Wilson, *Bureaucracy: What Government Agencies Do and Why They Do It* (Basic Books, 1989).

benefits, which are associated with productivity.²⁶ As bureaucracies grow in size and become taller in terms of their command and control architectures, they become less agile and find it difficult to reorganize structurally and reform their processes in response to changes in the environment. As they age and acquire a corporate culture, members become more entrenched in their work habits and perhaps even more significantly, their belief that the way they have always done things is the best way to always do things.²⁷

Innovation is disruptive to established bureaucratic processes and therefore subject to intense scrutiny to ensure it does not degrade the quality of the service or product provided by the organization. Thus, change comes about slowly in these organizations and the larger the organization, the longer it takes for changes to gain acceptance and become institutionalized. Furthermore, the more successful the organization is the less likely it will be to recognize a need for change.²⁸ The old adage, “if it ain’t broke, don’t fix it” comes to mind as an example of this phenomenon. It is indicative of a corporate culture with a view of innovation confined to activities focused on the improvement of existing practice and products, but suspicious of new ones. These organizations suffer from their success because success often leads to institutional beliefs and practices aimed at preserving the status quo.²⁹ These represent are maladaptive behaviors for organizations in a complex, competitive, and rapidly changing marketplace, or security environment.

²⁶ Justin P. Friesen, et al. “Seeking Structure in Social Organization: Compensatory Control and the Psychological Advantages of Hierarchy,” *Journal of Personality and Social Psychology* 106, no. 4 (2014): 590-609.

²⁷ Andrew Hill and Stephen Gerras, “Systems of Denial: Strategic Resistance to Military Innovation,” *Naval War College Review* 69, no. 1 (Winter 2016): 109-132.

²⁸ This phenomenon is sometimes referred to as “over adaptation,” or “change blindness,” see Jerry R. Cooper, *Curing Analytic Pathologies: Pathways to Improved Intelligence Analysis* (Washington, DC: Center for the Study of Intelligence, 2005), 25.

²⁹ Hill and Gerras, “Systems of Denial.”

Traditional bureaucracies favor “a climate breeding conformity and conservatism rather than novelty, change and innovation,”³⁰ which is particularly true of military organizations because “disciplined organizations rarely place a high value on new and untried ideas” even when faced with irrefutable proof of the inefficacy of one’s tactics, techniques, and procedures.³¹ All organizational constructs have their advantages and disadvantages, and the mixed blessing inherent to all bureaucracy is that “even as it spreads known best practices, encouraging systemic productivity, bureaucracy stymies the creation of the next generation of better practices by limiting the dissemination of new, untested methods. Lacking a means to assess and evaluate the large number of competing new ideas, it tends to suppress them all.”³²

Even when bureaucratic organizations do endorse innovation it often fails due to individuals who resist changes to their work routines, or reject the practices that may be necessary for it to succeed.³³ This is especially true in the military for, as B.H. Liddell-Hart said, “the only thing harder than getting a new idea into a military mind is getting an old one out.”³⁴ Military organizations are bound together by traditions that encourage a sense of unity, conformity, and esprit de corps, and while their command and control structures are designed to maximize efficient communications of orders and reports, they

³⁰ Larry Cummings, “Organizational Climates for Creativity,” *Academy of Management*, (September 1965): 224.

³¹ Williamson Murray, “Innovation: Past and Future,” in *Military Innovation in the Interwar Period*, ed, Williamson Murray and Allan R. Millett (New York: Cambridge University Press, 1996), 301.

³² Roger Smith, “Bureaucracy as Innovation,” *Research-Technology Management* (January-February 2016): 61.

³³ Charlan Nemeth observes, “In fact, the “spark” that many companies are likely to ignite is not innovation or risk taking, but rather loyalty and commitment to the company. Through this path, they may achieve productivity and high morale, but at the same time can thwart creativity, innovation, and an ability to respond readily to change.” See Charlan Jeanne Nemeth, “Managing Innovation: When Less is More,” *California Management Review* 40, no. 1 (Fall 1997): 59.

³⁴ B.H. Liddell-Hart, in *The Military Quotation Book*, James Charlton, ed. (New York: St. Martin’s Press, 1990), 65.

are also highly intolerant of non-conformity. Furthermore, “at the individual level, the military’s hierarchical bureaucratic structure undermines creativity, hinders empowerment and sense of ownership, and fosters cynicism.”³⁵ The deeper an employee is in the bureaucracy the narrower the field of view one has in terms of access to information, access to senior leaders, customers, and the greater enterprise within which one works. This situation often results in a mismatch between leadership vision and organizational structure, which workers perceive as cynicism or dishonesty and not a true endorsement of the kinds of behaviors required for them to take risks and innovate.³⁶ Lex Sisney observes that in a competitive and rapidly changing environment “as much autonomy as possible should be given to those closest to the customer” if one expects an enterprise to remain relevant.³⁷ This relationship helps to ensure timely and responsive feedback that is more closely tailored to the needs of the customer. The hierarchical bureaucracy tends to undermine this by placing layers of management between the knowledge producer and the customer, which inevitably adds noise and unnecessary complexity to the system rather than clarity and simplicity.

This feature of the hierarchical bureaucracy is its greatest weakness, and it explains the friction that senior leaders encounter in fostering broad-based innovation and change among their subordinates. Specifically, while a vast majority of their workforce is inundated with vision statements and other corporate communications, they remain physically and emotionally disconnected from contributing directly to change simply

³⁵ John F. Price, Jr., “Napoleon’s Shadow,” (p. 49).

³⁶ MaryAnn M. Gobble, “Designing for Change,” *Research–Technology Management* (May-June 2015): 66.

³⁷ Lex Sisney, “The 5 Classic Mistakes in Organizational Structure: Or, How to Design Your Organization the Right Way,” <http://organizationalphysics.com/2012/01/09/the-5-classic-mistakes-in-organizational-structure-or-how-to-design-your-organization-the-right-way/> (accessed 10 October, 2016).

because they lack the requisite status in the hierarchy to act without violating entrenched chain of command protocols.

Thus far, the survey of organizational structures reveals that there is a relationship between structure and degree of adaptability, and that the highly bureaucratic structure of DOD organizations makes them ill-suited to fostering creativity or innovation. Leaders throughout the DOD enterprise publicly encourage the workforce to be innovative, so it is obvious that, at least in some organizations, there is a disconnect between leadership vision and practice.³⁸ The source of this disconnect can be traced to the inability of managers and leaders of knowledge workers to foster a work environment that effectively exploits the knowledge worker's drive to apply his or her self fully to their profession.³⁹ However, there are examples of innovation initiatives, centers, and other isolated activities where this type of knowledge work is encouraged and these represent examples of organizational ambidexterity. These organizations differ from the mainstream in that they often require their knowledge workers to act independently and exercise initiative in their daily work.

³⁸ The National Geospatial Intelligence Agency focus on innovation is reflected in Robert Cardillo, "Team GEOINT: This Is Our Moment," *Vital Speeches of the Day* (September 2015): 280-284; The Defense Intelligence Agency published a brochure for its workforce to encourage innovation, see Defense Intelligence Agency, *2014 Defense Intelligence Agency Innovation Strategic Plan* (Washington, DC: Defense Intelligence Agency), http://www.defenseinnovationmarketplace.mil/resources/DIA_InnovationStrategy.pdf (accessed 17 December, 2016); U.S. Army TRADOC G2 sponsors the Mad Scientist All Partners Access Network (APAN) community as a means of soliciting innovative thinking, see https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&uact=8&ved=0ahUKEwjFnu7k1eXRAhUFOyYKHfDVAwkQFggsMAM&url=https%3A%2F%2Fcommunity.apan.org%2Fwg%2Ftradoc-g2%2Fmad-scientist%2F&usg=AFQjCNFMXRu71bt7ZgZkjTQTMj5uyPwO_A&bvm=bv.145822982,d.eWE (accessed 28 January, 2017).

³⁹ The reasons for this include an increasingly management-heavy bureaucracy, an organizational culture that stresses consensus in its judgements, and an influx of inexperienced and often unskilled analysts to the workforce. See John A. Gentry, "Managers of Analysts: The Other Half of Intelligence Analysis," *Intelligence and National Security* Vol. 31, No.2 (2016): 154-177.

Knowledge Work, Autonomy, and Creativity

Regarding innovation and the structure of the work environment, when it comes to creativity, job autonomy is commonly cited as an essential factor, because it supports an environment that enables workers to explore different ways of performing tasks and solving problems.⁴⁰ Job autonomy implies a certain degree of latitude in one's ability to pursue development of ideas that are not yet sanctioned by the organization, a behavior that would be characterized as "deviant" in a traditional hierarchy and likely discouraged by management and organizational culture.⁴¹ Lex Sisney observes that in a competitive and rapidly changing environment "as much autonomy as possible should be given to those closest to the customer" if one expects an enterprise to remain relevant.⁴²

Job autonomy is important to today's knowledge workers, who comprise the overwhelming majority of the DIE and planning community. Peter Drucker, a legendary management expert, observed that "knowledge workers cannot be supervised closely or in detail. They can only be helped. But they must direct themselves, and they must do so toward performance and contribution, that is, toward effectiveness."⁴³ Here Drucker highlights an aspect of knowledge work that is too often either overlooked, or simply not grasped by the managers of these individuals with regards to effectiveness, namely, "the motivation of the knowledge worker depends on his being effective, on being able to achieve. If effectiveness is lacking in his work, his commitment to work and to contribution will soon wither and he will become a time-server going through the

⁴⁰ B. Sripirabaa and Sudha Maheswari T., "Individual Creativity: Influence of Job Autonomy and Willingness to take Risk," *SCMS Journal of Indian Management* (October - December 2015): 110-118.

⁴¹ Charalampos Mainemelas, "Stealing Fire: Creative Deviance in the Evolution of New Ideas," *Academy of Management Review* 35, no. 4 (October 2010): 560.

⁴² Lex Sisney, "The 5 Classic Mistakes in Organizational Structure."

⁴³ Peter Drucker, *The Essential Drucker: Selections from the Management Works of Peter F. Drucker* (New York: HarperCollins, 2001), 193.

motions from nine to five.”⁴⁴ Therefore, job autonomy is a key consideration in determining how to increase the effectiveness of knowledge workers, and this is as true for planners and intelligence analysts as any other professionals.⁴⁵

While autonomy is a key consideration, direction and vision are also important to the enterprise, and leaders play a key role by communicating a common vision and ensuring all of the efforts of the enterprise are employed toward its goals. Again, congruence between leadership proclamations of support for innovation and management tolerance for autonomy is essential.⁴⁶ In order to accomplish this, leaders must dialogue with their workforce to maintain a sense of their understanding of that vision and ideas and respond effectively to feedback on how the knowledge workers might best support achieving them.

Leaders raised in traditional hierarchies often have difficulty adapting in today’s workplaces where teams accomplish much of the work. General McChrystal recalled that he found his direct involvement in decision-making often detracted from the ability of his teams to act rapidly upon tactical opportunities and outwit an agile and adaptable enemy.⁴⁷ His behavior was typical of that which is ingrained in military officers and based upon a belief that when one is in a management position, one must be cognizant of

⁴⁴ Drucker, *The Essential Drucker*, 193-194.

⁴⁵ David L. Hoover, “A Failure of Imagination in the U.S. Intelligence Community,” *American Intelligence Journal* Vol. 31, No. 1 (2013): 68. Hoover discusses the importance of job autonomy for analysts and the challenges to job autonomy presented by bureaucracies. Lessons learned regarding autonomy and innovation in the commercial workplace are highlighted in Patty McCord, “How NETFLIX Reinvented HR,” *Harvard Business Review* (January-February 2014), <https://hbr.org/2014/01/how-netflix-reinvented-hr> (accessed 17 December, 2016). McCord explains that NETFLIX culture is one of “freedom and responsibility,” wherein salaried employees are self-directed by the simple guidance to act in the best interests of the company.

⁴⁶ MaryAnn M. Gobble, “Designing for Change,” *Research–Technology Management*, (May-June 2015): 64.

⁴⁷ Stanley McChrystal, *Team of Teams*.

every detail and activity within his or her span of control. Managers in bureaucracies frequently act as gatekeepers of access and information, a common practice with unintended corrosive effects upon the self-motivation of employees and the collaborative nature of knowledge work. They restrict access into the work unit to enforce process, balance workload and prevent “line of sight” tasks from outsiders, but this type of management behavior does not lend itself to teamwork, especially the kind of multidisciplinary cross-organizational teamwork strategic analysis and planning require. Gatekeeping and process enforcement are control mechanisms, which create impediments to innovation, and a “process-dependent organization . . . can quickly lose the product forest in the process trees.”⁴⁸

One study of intelligence analyst teams underscores the importance of worker autonomy to the collaborative effort of team members and the friction managers introduce through their personal involvement. The study observed that “managers in organizations where this is done may harbor the hope that they can harvest the widely-touted benefits of teamwork while continuing to directly manage the behaviors of individual members,” but the findings of this study indicated “this hope is misplaced.”⁴⁹ Therefore, regardless of the construct one adopts, a concerted effort must be made to enable the autonomy knowledge workers. Some forms of organization are better suited for this than others. A potential hidden benefit of greater worker autonomy for the organization is that there is a much lower need for managerial supervisory employees,

⁴⁸ David A. Fastabend and Robert H. Simpson, “The Imperative for a Culture of Innovation in the U.S. Army: Adapt or Die,” *Army* (February 2004): 17.

⁴⁹ J. Richard Hackman and Michael O’Connor, *Intelligence Science Board Task Force Report on What Makes for a Great Analytic Team? Individual versus Team Approaches to Intelligence Analysis* (Washington, DC: Office of the Director of the Central Intelligence Agency, February 2004).

which means organizations can scale back the ranks of supervisors and either downsize, or re-assign these personnel to fill vacancies in knowledge production positions. In a resource-constrained environment, this can help mitigate critical personnel shortages so long as the re-aligned personnel possess the requisite knowledge, skills, and abilities for their new duties.

This brief survey of organizational design constructs reveals that holacratic and flat organizations provide the greatest degree of autonomy, and the exploratory arm of an ambidextrous organization, structured along the lines of a flat organization, offers similar benefits in terms of creativity and innovation. It should come as a surprise to no one who has worked in one that the traditional hierarchical bureaucracy is the least agile of all of the organizational constructs reviewed. These organizations tend to favor exploitation of existing products and activities over exploration and innovation of new ones. Hierarchical bureaucracies are also the most restrictive in terms of worker autonomy and, unfortunately, foster initiative and creative thought on a scale inversely proportionate to their size. Given the resistance of these organizations to change, one could argue that a way to foster it without undue disruption to successful activities would be to adopt an ambidextrous approach to establish innovation cells or teams. These teams should be provided with an environment that enables, or drives, their workers to be creative. Finally, no matter how they are structured, organizations are only as good as their people and this is especially true for enterprises specializing in knowledge work.

Chapter 3: Workforce Competencies

When I was on the faculty of the Army War College, a program was proposed to develop strategists. I said to the Commandant, "I'm not sure you can do that." – Harry G. Summers, Jr.¹

Efforts to professionalize intelligence as a discipline tend to consider analysts and planners as fungible assets. This conception is an artifact of an industrial age concept of work in which the organization's production process resembles an assembly line wherein workers, staff officers, or soldiers who are similarly trained can be exchanged without interrupting the manufacturing process or the quality of the product. At best this may hold true at the more junior levels of experience and tradecraft, or be an appropriate view in managing personnel within teams engaged in the exploitation activities of the organization. When it comes to innovation activities, such as problem-solving at the operational and strategic levels, the knowledge, skills, and abilities needed to be effective are far less fungible and likely scarce. The ability of workers at this level to be effective contributors is highly contingent upon the accrual of a broad and deep knowledge of both how the greater enterprise in which they are a part operates and the nature of the strategic environment the enterprise faces. Developing these qualities requires time and exposure to problems that require exploratory research, critical thinking, and creativity.²

¹ Harry G. Summers, Jr., *The Making of Military Strategy for the Twenty-First Century* (Berkeley: University of California Press, 1997), 17.

² See John A. Gentry, "The "Professionalization" of Intelligence Analysis: A Skeptical Perspective," *International Journal of Intelligence and CounterIntelligence* 29, no. 4 (2016): 643–676. Gentry reiterates the concern of many veteran intelligence analysts that expertise is being lost by the community through efforts to implement civilian career development programs that replicate military career development models, which are focused on developing leaders and management generalists.

Strategic Thinking, Critical Thinking, and Creativity

Lieutenant General David Barno observed that “success in modern conflict requires adaptive thinkers who share a strategic view of warfare, a holistic approach, and a strong valuation of all the contributing players.”³ Colin Gray, however, notes that this strategic view is absent or lacking and that “the U.S. has shown a persisting strategy deficit, which reflects and feeds a political deficit in its way of war.”⁴ Jason Warren writes that “the creation of a mega-bureaucracy and a fixation with tactics” has lent to a steady erosion of the Army’s strategic performance since the Korean War.⁵ To correct this, one must first identify the knowledge, skills, and abilities one wishes to instill in the workforce in order to build strategic thinking competencies and expand the institutional capacity for strategy development.

Obsessive curiosity, initiative, contrarian thinking, ability to change one’s mind in the face of evidence, tolerance of ambiguity, and desire to be recognized as an expert are among the qualities that make a good intelligence analyst.⁶ Research into the Myers-Briggs Type Indicator (MBTI) personality traits most suitable for intelligence analysis indicates that introverts also tend to make better analysts.⁷ Creativity, critical thinking, and imagination are also cited as positive attributes.⁸ One can safely assert that these

³ David W. Barno, “Military Adaptation in Complex Operations,” *Prism* 1, no. 1 (2009): 35.

⁴ Colin S. Gray, *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt?* (Carlisle PA: Strategic Studies Institute, March 2006), 5.

⁵ Jason W. Warren, “The Centurion Mindset and the Army’s Strategic Leader Paradigm,” *Parameters* 45 (3) (Autumn 2015): 27.

⁶ James M. Simon, Jr., “Intelligence Analysis as Practiced by the CIA,” *International Journal of Intelligence and CounterIntelligence* 26 (2013): 641-651.

⁷ David L. Hoover, “A Failure of Imagination in the U.S. Intelligence Community,” *American Intelligence Journal*, Vol. 31, No. 1 (2013): 59-71.

⁸ David L. Hoover, “A Failure of Imagination in the U.S. Intelligence Community.” Also, see Josh Kerbel, “For the Intelligence Community, Creativity is the New Secret,” *World Politics Review* (25 March, 2010), <http://eds.a.ebscohost.com.nduezproxy.idm.oclc.org/eds/detail/detail?vid=10&sid=8f9ac5d6-b120-4b4b-8944-7580b186bae2%40sessionmgr4007&hid=4213&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=50654633&db=wpr> (accessed 26 August, 2016). Also see David T. Moore, *Critical*

qualities are highly desirable among planners as well. For example, the advocates of design's application to military planning cite the value of creative and critical thinking in their discussion of the construction of narratives to explain complex problems, as well as the power of "problematization," in improving organizational performance.⁹ In fact, Joint Publication 5-0 describes operational art as "the creative thinking used to design strategies, campaigns, and major operations and to organize and employ military force," and emphasizes the role of conceptual thinking as integral to planning.¹⁰ Additionally, planners at the operational level and above must have a mature grasp of the roles of planning, strategy, and policy, and understand the dynamic and "iterative" nature of the relationship between each of these processes.¹¹ Planners, like intelligence analysts, must possess problem-solving skills that embrace the discomforts of ambiguity, uncertainty, and complexity, and a perspective grounded in a deep understanding of the historical context of the problems they aim to address, not only in the near future, but also the distant future.¹²

Thinking and Intelligence Analysis, Occasional Paper Number Fourteen (Washington, DC: National Defense Intelligence College, 2009).

⁹ Ben Zweibelson, "Three Design Concepts Introduced for Strategic and Operational Applications," *Prism* 4, no. 2 (2013): 87-104. Also see Andrew F. Krepinevich and Barry D. Watts, *Strategy for the Long Haul: Regaining Strategic Competence*, (Washington, DC: Center for Strategic and Budgetary Assessments, 2009), 15-19 for a discussion of strategy and the intellectual skills required for it.

¹⁰ U.S. Joint Chiefs of Staff, *Joint Operation Planning*, Joint Publication 5-0 (Washington, DC: Joint Chiefs of Staff, 11 August, 2011), I-5. Douglas Waters writes that "creativity and the ability to use systems thinking to holistically assess all aspects of an organization's internal and external key factors are what truly empower effective strategic thinking," see Douglas E. Waters, "Understanding Strategic Thinking and Developing Strategic Thinkers," *Joint Forces Quarterly* issue 63 (4th quarter 2011): 115.

¹¹ Margaret M. Polski, "Strategy 2.0: The Next Generation," *Joint Forces Quarterly* 81 (2nd Quarter 2016): 19-25.

¹² Daniel H. McCauley, "Rediscovering the Art of Strategic Thinking: Developing 21st-Century Strategic Leaders," *Joint Forces Quarterly* 81 (2nd Quarter 2016): 27. This author identifies seven competencies that are "vital for strategic leaders:" critical thinking, creative thinking, contextual thinking, conceptual thinking, cultural thinking, collaborative thinking, and communicative thinking (p. 29). He also adds that there are two tools that enable critical thinking: systems thinking and visual thinking (p. 30). These competencies are relevant to planners and analysts, and indeed all staff engaged in strategy formulation.

Planning and strategy development in combatant commands (CCMDs) are also subject to the same tyranny of the present as intelligence analysis. Leaders are often overcome by the events of the day and under prioritize planning activities in general and strategy development to an even greater extent.¹³ CCMD senior leaders are often consumed by an unrelenting schedule of engagement activities and meetings that rivets their attention to the present and keeps them tactically focused. The opportunity to think deeply and long, beyond the bounds of the FYDP (future years defense program), is extremely rare, and the frequent rotation of leaders and military planners every three to four years exacerbates this condition. Thus, strategy development and the requisite assessment of its effects is such a discontinuous process at the CCMD that it may actually undermine its coherence and diminish the utility of a theater strategy altogether.¹⁴ If leaders do not demonstrate an interest in planning or strategy development, their staff will prioritize effort accordingly and devote their time to other tasks. This is not a satisfactory state of affairs, especially for institutions that are responsible for campaign planning, program and budget input, and other activities intended to ensure the nation's security and influence or shape the strategic environment, not just today and tomorrow, but in the decades ahead.¹⁵

A recent study by the Center for Naval Analyses on strategy reported DOD-wide concern regarding the quality of strategic thinking. The study's interviewees opined that service personnel policies and limited training opportunities for strategists hinder the

¹³ John F. Price Jr., "The Downfall of Adaptive Planning: Finding a New Approach after a Failed Revolution," *Air & Space Power Journal* (March–April 2012): 118-131. In addition to the temporal challenges to strategic thinking across the joint community, Price elaborates on process and structural challenges as well.

¹⁴ Richard K. Betts, "Is Strategy and Illusion?" *International Security* 25, no. 2 (Fall 2000): 8.

¹⁵ Polski, "Strategy 2.0," 24. Also see Jeffrey Record, "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model," *Parameters* Vol. XVI, No.3 (1986): 2-8.

development and sustainment of strategic thinking across the force.¹⁶ The capacity for strategic thinking, and the value placed on it by senior leaders may be as much a product of personality as the pressure of current events, training, or education. In a discussion of recent research into the personality traits associated with an ability to think about the future using the Myers-Briggs Type Indicator (MBTI), Evan M. H. Faber found that:

- . . . of the MBTI types, iNtuitive-Perceiving (N-P) preferences are often paired, as are Sensing-Judging (S-J) preferences.
- N-P types are generally more comfortable with uncertainty and surprise as permanent features of the world. They are generally less comfortable handling measured data and more interested in the big picture that emerges from it. N-P types think more naturally, think in terms of systems, and probably prefer better question-asking to finding concrete answers.
 - S-J types, rather, are generally most comfortable with what can be measured and prefer to focus on “the thing itself.” Concerned with solving the problem at hand, S-J types are likely to see the future more or less as a linear extrapolation of the present, with less interest in questioning assumptions and more interest in what is knowable and doable.¹⁷

Since S-J types tend to possess the personality traits associated successful performance at the tactical and operational levels, they are more likely to rise to senior positions than their N-P peers.¹⁸ Their unfamiliarity with systems thinking and unease with ambiguity could be a contributing factor in their reluctance to devote their attention to strategy development, as could their predilection for problem-solving and task completion, activities that tend to take precedence over thinking about the future for busy executives.

¹⁶ Polski, “Strategy 2.0,” 22.

¹⁷ Evan M. H. Faber, “Grand Strategy and Human Thinking,” in *Forging an American Grand Strategy: Securing a Path Through a Complex Future*, Sheila R. Ronis, ed. (Carlisle, PA: Strategic Studies Institute, October, 2013), 71-2.

¹⁸ This is echoed in Army War College student personality studies, which indicate an inverse correlation between likelihood of promotion and indicators of creativity, such as intellectual/conceptual ability and open-mindedness. See Charles D. Allen, *Creative Thinking for Individuals and Teams: An Essay on Creative Thinking for Military Professionals*, (Carlisle, PA: U.S. Army War College, 2009), and Stephen J. Gerras and Leonard Wong, *Changing Minds in the Army: Why It’s So Difficult and What To Do About It* (Carlisle, PA : Strategic Studies Institute and U.S. Army War College Press, 2013); also see Everett S.P. Spain, J.D. Mohundro, and Bernard B. Banks, “Intellectual Capital: A Case for Cultural Change,” *Parameters* 45(2) (Summer 2015): 77-91.

Finally, with regard to specific areas of expertise, Polski argues that a breadth of experience in how the enterprise works is a highly desirable trait for strategists who require competency in “analysis; in professional program management and planning; and in its knowledge of budgeting, programming, force planning, capital investment, economics, business, finance, governance, and developments in science and technology.”¹⁹ One can see that gaining competency in these areas, each of which is demanding in its own right, is not something that can be trained or gained quickly, but rather a skill set that is acquired over years of work experience. Gaining this breadth and depth of knowledge is not easily achieved through the current military and civilian personnel career management systems. Polski’s findings also reinforce the importance of “empowering capable people, reducing unnecessary activities, developing resilient networks, and implementing sustaining processes.”²⁰

Of relevance to this discussion are efforts ongoing to improve the effectiveness of Officer Professional Education (OPE) in the Department of Defense. Scholarship in the field is illustrative of the stopping power of ingrained bureaucratic processes and traditional mindsets with regard to innovation. The DOD senior service colleges are tasked to develop senior leaders who possess the critical thinking skills and mental agility to navigate the challenges of a volatile, chaotic, and rapidly-changing future security environment successfully. The curriculum of these institutions, however, is predominantly past and present-focused, and only superficially touches on the study of the future, and even then with a time horizon that could be characterized as the near

¹⁹ Polski, “Strategy 2.0,” 23.

²⁰ Ibid. 24.

future.²¹ Thus, even the schoolhouses that exist to prepare the next generation of senior leaders are reinforcing a current or near current perspective on the future and possibly adding to the decline of strategic thinking capacity in the defense enterprise.

The 2014 Quadrennial Defense Review describes the challenge facing planners and analysts as they seek to understand the strategic environment and threats that are “characterized by a rapid rate of change and a complexity born of the multiple ways in which they intersect and influence one another.” The QDR observes that predicting how threats will evolve will become increasingly difficult despite advances in data analytics and other tools.²² Predicting how threats will evolve requires foresight, and as Leon Fuerth, a former national security advisor to former Vice President Gore asserted, “. . . there can be no capacity for strategic behavior without foresight.”²³ An aptitude for foresight does not come as naturally to human beings as one might assume, but it is an aptitude that can be taught and nurtured with support, interest, and participation from leaders.

Nurturing Foresight

The introduction to the 2010 report by the Project on National Security Reform states that “the country must establish a mechanism to infuse greater foresight into the

²¹ For a summary of the academic research into OPE see Theodore C. Hailes, “Building Creative Military Leaders: Challenges to Overcome,” in *Changing Mindsets to Transform Security*, Linton Wells II, Theodore C. Hailes, and Michael C. Davies, eds. (Washington, DC: Center for Technology and National Security Policy, Institute for National Security Studies, National Defense University, 2013), 215-232.

²² Charles Hagel, *Quadrennial Defense Review* (Washington, DC: U.S. Department of Defense, March 4 2014), 6.

²³ Leon S. Fuerth, “Grand Strategy,” in Sheila R. Ronis, ed., *Forging an American Grand Strategy: Securing a Path Through a Complex Future* (Carlisle, PA: Strategic Studies Institute, October 2013), 11.

Executive Branch, and in particular the national security system.”²⁴ Given the daily demands of a persistent climate of crisis and personnel turbulence, the same can be said for CCMDs and other defense institutions that function at the operational level of war and above. Strategic foresight and visioning are methodologies developed by futurists that could be of great value to a staff as a means of improving CCMD strategy development. Incorporating foresight into strategic planning at the CCMD level is a means of establishing a “competitive marketplace of ideas” regarding the future operating environment more broadly across the DOD enterprise, and harnessing more of the intellectual capital available within the Department.²⁵ Foresight involves the development of scenarios for potential futures that are not intended to be predictive, but rather serve to “challenge existing assumptions about the future, to consider ‘what if’ possibilities, and to plan and act differently.”²⁶ Arguably, foresight is essential to estimative intelligence, which is exploratory in nature and seeks to determine “what might be or might happen” as opposed to the explanatory nature of current intelligence, which is more “reportorial and interpretive.”²⁷

Strategic foresight, scenario planning, and visioning have been widely applied to planning in government and private enterprise since at least the late 1960s. Multiple methodologies have emerged for how to develop scenarios and the Shell Scenarios

²⁴ James R. Locher, III, “Foreword,” in *Project on National Security Reform: Vision Working Group Report and Scenarios*, Sheila R. Ronis, ed. (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, July 2010), ix.

²⁵ Paul R. Norwood, Benjamin M. Jensen, and Justin Barnes, “Capturing the Character of Future War,” *Parameters* Vol. 26, No. 2 (Summer 2016): 81-91. The authors see a need to incorporate foresight more broadly throughout the U.S. Army. They encourage the establishment of a network of small foresight incubators as a means of overcoming bureaucratic resistance to non-standard organizational constructs, and incentivizing assignments to these teams as a means of attracting talented career officers.

²⁶ Andy Hines, “Strategic Foresight: The State of the Art,” *The Futurist* (September-October, 2006): 20.

²⁷ Joseph S. Nye, Jr., “Peering into the Future,” *Foreign Affairs* 73, no. 4 (July/August 1994): 82.

developed by Pierre Wack are probably the most recognized examples of this way of thinking about the future. The Shell Scenarios are the result of Royal Dutch Shell's early experience with its Unified Planning Machinery (UPM), a computer program used to project market conditions over a six year period. The UPM proved inadequate because its projections did not go far enough into the future to support many of the long-term investment decisions the corporation needed to make to remain competitive. Shell stopped using the UPM and began experimenting with scenario planning. Pierre Wack served as the lead for this effort and his team developed scenarios, or plausible stories about the future, that ranged more widely than the outcomes generated by the UPM. One of Wack's scenarios forecasted a market environment that closely resembled the early 1970's oil crisis, which prepared Shell to better weather the crisis than its competitors.²⁸ Other examples of foresight include Peter Schwartz' eight-step methodology discussed at length in his book, *The Art of the Long View*.²⁹ In her book *Timelines into the Future*, Sheila R. Ronis describes two "visioning" methodologies, one is a complete and detailed ten-step process and the other is an abbreviated eight-step version.³⁰ The University of

²⁸ Angela Wilkenson and Roland Kupers, "Living in the Futures: How Scenario Planning Changed Corporate Strategy," *Harvard Business Review* (May 01, 2013): 119-127. The authors explain that the value of scenario planning lies not in its ability to predict the future, but rather "in how it has helped break the habit, ingrained in most corporate planning, of assuming that the future will look much like the present." (p. 120).

²⁹ Peter Schwartz, *The Art of the Long View: Planning for the Future in an Uncertain World* (New York: Currency, 1996), 241-248. The eight steps Schwartz uses are: Identify focal issue or decision, key forces in the local environment, driving forces, rank by importance and uncertainty, selecting scenario logistics, fleshing out scenarios, implications, and selection of leading indicators and signposts.

³⁰ Sheila R. Ronis, *Timelines into the Future: Strategic Visioning Methods for Government, Business, and Other Organizations* (Lanham MD: Hamilton Books, 2007), 17 & 63. The ten steps are: Definition of your system within its environment or the world situation to be studied; Identifying assumptions about the present, especially those considered most dear; Creation of a family in the future timeline that you will be looking at; Determine what is Plausible; Selection of a full spectrum of scholars to develop timelines into the future of their discipline; Development of a "situation wall" to keep track of everything; Plumb lines – describing the cumulative effect of assumptions; Creation of a future scenario; Testing of assumptions about the future and; Thinking about what needs to change today to increase the probability of shaping the future you want to create. The short version is as follows: Define the System . . . ; "Experience" a vision . . . ; Assumptions, then "Headline" Exercise in 10-20 years & share; Timeline Future History; Development

Houston Strategic Foresight program methodology consists of six steps.³¹ Most recently, Cecily Sommers' book *How to Think Like a Futurist*, discusses a three step process.³² Regardless of the specific methodology one applies, the process behind strategic foresight and its impact on the thought processes of the staff is its most valuable contribution to the enterprise and as beneficial to the organization as any finished product. Therefore, as Futurist Andy Hines suggests, foresight should be an ongoing process in an organization.³³ Staffs rarely have time set aside to focus on a collective thinking exercise, but taking time do so provides opportunities for the staff to take stock of the current state of the environment, assess progress, and identify new and emerging issues. Incorporating foresight exercises as an ongoing staff activity fosters the staff's growth as a learning organization and expands opportunities to bring fresh perspectives to bear on long-term issues to which the staff may have become desensitized.³⁴ Bringing experts from outside the organization into the process is a way to mitigate the risk of confirmation bias by introducing fresh perspectives, expanding the realm of available facts bearing on a problem, and iteratively re-testing hypotheses. Recent research also indicates that foresight methodologies, such as scenario planning, contribute to an organizational climate of creativity and innovation.³⁵

of a Vision and Beliefs & Values; A description of the system in 20 years . . . ; A description of the world in 20 years . . . ; What have I learned through his process that will encourage me to change something tomorrow?

³¹ Andy Hines, "Strategic Foresight," 20. The six steps are: six steps: Framing, Scanning, Forecasting, Visioning, Planning, and Acting.

³² Cecily Sommers, *How to Think Like a Futurist: What Changes, What Doesn't, and What's Next* (Jossey-Bass, 2102). Sommers' three steps are: Know, New, and Do.

³³ Andy Hines, "Strategic Foresight," 21. Also see David Sarpong, Mairi Maclean, and Elizabeth Alexander, "Organizing strategic foresight: A contextual practice of 'way finding'," *Futures* 53 (2013): 33–41.

³⁴ David Sarpong, Mairi Maclean, and Elizabeth Alexander, "Organizing strategic foresight."

³⁵ Thomas J. Chermack, et al., "The Effects of Scenario Planning on Participant Perceptions of Creative Organizational Climate," *Journal of Leadership and Organizational Studies* Vol. 22, No. 3 (2015): 355–371.

Military and civilian staff officers employ various methods to deconstruct the issues they are studying and organize their re-construction of data into assessments that form the basis of course of action development. For example, intelligence analysts are taught to use structured analytic techniques and planners are taught to use the military decision-making process, joint operational planning process, and operational design. An obstacle to the production of all-source intelligence analysis of complex problems lies in the focus and solitary nature of the analytic production process itself rather than methodology and tools. It is common for analysts and other staff subject matter experts to work in isolation as they generate narrowly-scoped explanatory intelligence reports to meet the demands of quick-turn production requirements.³⁶ The downside of this workflow is that this inculcates work habits poorly-suited to the collaborative team efforts required to develop broadly informed, well-researched and forward-looking futures scenarios that are useful to strategy development.³⁷

A recent Joint Advanced Warfighting School thesis addressed the problems associated with structured analytic techniques, noting that most are reductionist in

³⁶ Intelligence analysts' performance evaluations are routinely based upon the number of "products" they generate, and/or the seniority of the recipient consumer of their product, which incentivizes them to concentrate their efforts toward current intelligence issues that can be written on quickly and frequently. Production-focused performance evaluations of this kind are a disincentive to analysts who view long-term, low output projects (in terms of finished intelligence products) as a risk to their production numbers. This schema also reinforces a perception of fellow staff officers and peers as low priority targets of their knowledge since those individuals are unlikely to influence their performance appraisals or those of their supervisors. For an in-depth discussion of this issue, see "Probing the Implications of Changing the Outputs of Intelligence: A Report of the 2011 Analyst-IC Associate Teams Program," *Studies in Intelligence* 56, no. 1 (Extracts, March 2012): 1-11.

³⁷ Daniel Javorsek II and John G. Schwitz, "Probing Complexity, Uncertainty, and Human Agency in Intelligence," *Intelligence and National Security* 29, no. 5 (2014): 693-653. The authors assert that current analytic practices are increasing the risk of intelligence failures because they aim to explain the security environment as a composite of complicated issues within closed systems, and thus fail to recognize issues that are emerging due to the impact of human agency on complex, interrelated and interdependent systems. Chang and Tetlock observe that too little effort has been devoted to testing the efficacy of the structured analytic techniques analysts are being taught to use despite the considerable resources being applied to this training, see Welton Chang and Philip E. Tetlock, "Rethinking the Training of Intelligence Analysts," *Intelligence and National Security*, 31:6 (2016): 903-920.

method and consider problems as closed systems.³⁸ This is acceptable if one is studying a tactical target, but such methods may not be as useful to long-term looks and consideration of second and third order effects of one's actions across a complex environment of interrelated open systems. For example, the current methodologies employed in counterdrug analysis drive the analytic focus toward descriptions of networks that are largely closed systems. They occasionally expand to include financial institutions and corrupt government officials, but seldom, if ever, enable understanding of other, more distant but powerful enablers of drug trafficking, such as the motivations of consumers, or efficacy of addiction treatment programs. The author makes the case for introducing complexity theory as a component of the training portfolio for intelligence analysis.³⁹ Application of complexity theory would drive the analyst to consider a broader range of influencers, and likewise drive operators to consider a broader spectrum of targeting actions or partner engagement activities. Together, the analyst and operator would be better prepared for the unintended good and bad consequences of their actions on the system as a whole.⁴⁰ This writer concurs, and adds that combining the application of complexity theory to strategic foresight activities would force the exploration of a larger universe of factors influencing the problem under investigation and further the ability to anticipate strategic surprise.⁴¹

³⁸ Scott M. Bowman, *Shifting Perspectives: Using Complexity Theory to Anticipate Strategic Surprise*, Master's Thesis (Norfolk VA: Joint Forces Staff College Joint Advanced Warfighting School, 09 February, 2015).

³⁹ Similarly, Patrick M. Hughes also makes the case for training and educating "key individuals" as well as for tools and facilities to enable to a better understand complexity. See LTG Patrick M. Hughes, "On Emergence, Convergence, and Complexity," *Military Review* (March-April 2016): 45.

⁴⁰ The challenges associated with strategy development in a complex security environment are not unique to U.S. defense and interagency institutions, for a perspective on the issue from the UK see Jamie Gaskarth's article, "Strategy in a Complex World," *RUSI Journal* Vol. 160, No. 6 (December 2015): 4-11.

⁴¹ Note that Bowman writes of "anticipating strategic surprise," not "preventing strategic surprise." This is congruent with the objective of strategic foresight, which is to better prepare for possible futures, not to

Application of complexity theory to the scenario development process might begin by visualizing the strategic environment as the three-level chessboard described by Joseph S. Nye, Jr.⁴² Nye describes a tiered strategic environment wherein military power operates at the top level (unipolar, U.S.-dominated), economic power on the middle level (multi-polar U.S., China, and other peer and near-peer competitors), and sub-state and non-state actors operate on the bottom level (fluid and chaotic, transnational relations between a multitude of actors). The bottom layer of the chessboard is where much of today's conflict is taking place and it is becoming more volatile due to its connectedness and openness, which enables rapid self-organization of groups for good and bad purposes. A recent *Foreign Affairs* essay describes the web-like nature of this environment as:

. . . a world not of states but of networks. It is the world of terrorism; of drug, arms, and human trafficking; of climate change and declining biodiversity; of water wars and food insecurity; of corruption, money laundering, and tax evasion; of pandemic disease carried by air, sea, and land. In short, it is the world of many of the most pressing twenty-first-century global threats.⁴³

This view reflects the closely-connected nature of the steady state strategic environment within the CCMD's area of responsibility. This environment presents numerous challenges to U.S. national interests as well as opportunities that, while not strictly

predict them. For a brief overview of some of the benefits of strategic foresight and scenario planning in a military context see Keith Ferguson and Nicole Woodyard, "Picturing the Art of Strategic Thinking," *Army Magazine* (September 2016): 38-39.

⁴² Joseph S. Nye, Jr. "The Future of American Power: Dominance and Decline in Perspective," *Foreign Affairs* Vol. 89, no. 6 (November/December 2010): 3. There are multiple approaches to visualizing the strategic environment, among which is that described by T. Irene Sanders who incorporates chaos theory and complexity science into a foresight methodology described in her book, *Strategic Thinking and the New Science: Planning in the Midst of Chaos, Complexity, and Change*, (New York: The Free Press, 1998).

⁴³ Anne-Marie Slaughter, "How to Succeed in the Networked World: A Grand Strategy for the Digital Age," *Foreign Affairs* Vol. 95, no.6 (November/December 2016): 76.

military in nature, bear directly upon the security-related objectives of CCMD theater campaign plans.⁴⁴

Perhaps the most important factor in nurturing strategic foresight is to get the organization to champion its purpose and value. In the late 1960s, Pierre Wack, wrote that one of the greatest challenges his team had to overcome was in developing scenarios that challenged the Shell corporate leadership's mental models of the strategic environmental factors to the extent that they were compelled to ask questions, participate in the exploration of alternative futures, and see the future in a new light.⁴⁵ He also came to understand that many managers needed to see some degree of "definiteness" in the futures he presented, and also were uncomfortable with scenarios they could not control.⁴⁶ Wack's experience is consistent with that of strategists in the DOD who stress that "we need to find new creative ways of communicating the need and the utility of foresight and strategy to those who are concerned with the day-to-day events."⁴⁷ In short, one needs to work hard to "sell" the future to leaders who are immersed in managing current events.

⁴⁴ Antulio Echevarria challenges the "phasing" model's utility as it is applied to the current security environment and argues that "military strategists and campaign planners must think in terms of an integrated expression of power" that includes all instruments of power, and that the "pre-war phase of conflict is crucial, perhaps even "decisive . . . in the prosecution of armed conflict." See Antulio J. Echevarria II, *Operating in the Gray Zone: An Alternative Paradigm for US Military Strategy* (Carlisle, PA: US Army War College Press, April 2016), 23-25.

⁴⁵ Pierre Wack, "Scenarios: Uncharted Waters Ahead," *Harvard Business Review* (September 1985), <https://hbr.org/1985/09/scenarios-uncharted-waters-ahead> (accessed 05 November, 2016).

⁴⁶ Pierre Wack, "Scenarios: Shooting the Rapids," *Harvard Business Review* (November-December, 1985) <https://hbr.org/1985/11/scenarios-shooting-the-rapids> (accessed 05 November, 2016).

⁴⁷ Faber, "Grand Strategy and Human Thinking," 73.

Joint Preparation of the Strategic Environment (JPSE)

Today's security environment is often characterized as volatile, uncertain, complex, and ambiguous (VUCA).⁴⁸ Human interactions at every level, from the interpersonal to the international, are chaotic and the outcomes of these interactions are highly susceptible to chance. The rate of change is accelerating in many aspects of our life, and complexity, volatility, and uncertainty are becoming the new normal. Therefore, organizations must adopt a new way of understanding and adapting to the environment and evaluate the relevance of established models and doctrine to current needs.⁴⁹

The joint community characterizes, or describes, the operational environment using the Joint Intelligence Preparation of the Operational Environment (JIPOE). JIPOE is the “continuous process through which J-2 manages the analysis and development of products that help the commander and staff understand the complex and interconnected operational environment—the composite of the conditions, circumstances, and influences that affect the employment of capabilities that bear on the decisions of the commander.”⁵⁰ While the J2 manages the JIPOE process, it is not strictly an intelligence task; rather it is a whole of staff activity dependent upon input from every primary and special staff element and increasingly from interagency partners as well.

The acronym JPSE is used deliberately herein to break with the intelligence discipline-centric approach of current JIPOE doctrine that stresses the central role of intelligence staff in the process. Developing an understanding, or vision, of the strategic

⁴⁸ U.S. Joint Chiefs of Staff, *Planners Handbook for Operational Design, Ver. 1.0* (Suffolk, VA: Joint Staff, J-7 Joint and Coalition Warfighting, 07 October, 2011), C-13.

⁴⁹ Antulio J. Echevarria II, “Rediscovering U.S. Military Strategy: A Role for Doctrine,” *The Journal of Strategic Studies* 39, no. 2 (2016): 231-245.

⁵⁰ U.S. Joint Chiefs of Staff, *Joint Intelligence*, Joint Publication 2-0 (Washington, DC: Joint Chiefs of Staff, 22 October 2013), x. This definition is repeated in *Joint Operation Planning*, Joint Publication 5-0, (11 August, 2011), III-9.

environment requires the application of knowledge and skills that reside across and outside the CCMD staff, and results from processes more amenable to the application of creative thinking than a specific staff function. Furthermore, because the output of this process is intended to inform the CCMD's planning and programming processes, leadership of the effort should be in the staff directorate with the greatest equity, such as the J5. That said, JIPOE does provide a model that one can use as a starting point for a more future-oriented characterization of the strategic environment.

The Joint Publication 2-0 discussion of the JIPOE framework explains that it requires consideration of “all relevant aspects of the operational environment (e.g., political, military, economic, social, information, and infrastructure [PMESII] systems).”⁵¹ The PMESII framework is a systems-oriented methodology developed as a means for the staff to conduct a holistic appraisal of the operational environment. Like any other framework or theory PMESII is flawed, but it has utility in that it stresses the interconnected nature of the systems it studies.

Perhaps the most powerful criticism of PMESII is that the methodology has to do with its association with effects-based operations, which tend to treat threats as closed systems whereas:

. . . interaction with an enemy always occurs at three levels of war: strategic, operational and tactical. In modern war, events at the tactical level can have immediate impact at the strategic level, while even the most straightforward form of conflict—between two similar, state-based adversaries employing regular armed forces—can become immensely complex. Each side's rational, irrational and non-rational elements interact at all three levels of war simultaneously. The task of comprehending the whole complex, abstract reality of war is, therefore, enormously difficult.⁵²

⁵¹ U.S. Joint Chiefs of Staff, *Joint Intelligence*, Joint Publication 2-0 (Washington, DC: Joint Chiefs of Staff, 22 October 2013), I-16.

⁵² Justin Kelly and David Kilcullen, “Chaos Versus Predictability: A Critique of Effects-Based Operations,” *Security Challenges* Vol. 2, no.1 (2006): 66.

Difficult indeed, but one must begin somewhere, and PMESII provides an acceptable framework to organize JPSE information, since it has been broadly socialized across the Department through joint and service doctrine publications and the training base. Some critics argue JIPOE is a linear process that does not take full account of the multiple meanings of the attributes of the environment it seeks to understand, and may fail to enable an understanding of these attributes in their proper context. One observer asserts that while the model may present a comprehensive view of the environment, it is not complete and thus casts suspicion on “the utility of applying a linear concept like PMESII-PT to an operational environment that is holistically asymmetric.”⁵³

These criticisms are not damning enough to discount the use of PMESII altogether, especially if it is applied with thoughtful caveats based upon an appreciation of its limitations. A system of systems approach should be viewed as a good place to start to learn about the environment, to continue to build understanding, and to begin to discern trends, hopefully early enough in their development, to shape, warn, anticipate, or gain from them. Again, one must bear in mind that it is only a beginning, or better yet, that it is an unending process wherein the output of JPSE is continuously updated and questioned to ensure it remains accurate, complete, relevant, and ultimately useful.

Considering the breadth of information required to inform a staff in each of the PMESII system of systems subsets, it is obvious that it requires a significant investment of time and effort from a combatant command staff. The challenge is compounded by the fact that few, if any, combatant command staffs include billets for economists or social

⁵³ Brian M. Ducote, *Challenging the Application of PMESII-PT in a Complex Environment* (FT Leavenworth, KS: School of Advanced Military Studies, United States Army Command and General Staff College, May 2010), 5. The addition of PT (Physical Environment and Time) is unique to Army doctrine.

scientists on their staff, though support for such expertise can be requested from other government agencies or sought through partnerships with academia.⁵⁴ Furthermore, CCMD intelligence staffs are largely consumed with the production of current intelligence and with few exceptions the focus is on threat-related information that largely ignores much of the context-related information essential to sound estimates of the environment. While CCMD intelligence staffs publish analysis of a broad range of topics, they are generally discouraged from analytic production on the P and ESII of PMESII, a pattern that may be repeated throughout the DIE and greater intelligence community. As one senior leader recently opined, “the intelligence community’s standard mode of operation is surprisingly passive about aggregating information that is not enemy-related and relaying it to decision-makers or fellow analysts further up the chain.”⁵⁵ Thus, since the full range of expertise required for all of the information categories are rarely available in-house or from other DIE elements, CCMDs must coordinate and collaborate with external partners to obtain it.⁵⁶ While this is not an insurmountable issue, it is one fraught with a host of complications, security clearances and funding among them, and thus tends to make collaboration with external partners a slow and laborious affair. Developing a range of possible future scenarios is not an intelligence task, but a whole of staff task, since the objective is to increase understanding of uncertainty rather than to reduce it, which is traditionally the focus of intelligence.⁵⁷

⁵⁴ In fact, an ODNI and Department of State Bureau of Intelligence and Research report observed that “as our world becomes more complex, useful expertise will increasingly be located outside of the IC.” See Gregory Treverton, et al, “Products or Outputs?: Probing the Implications of Changing the Outputs of Intelligence,” *Studies in Intelligence* 56, no. 1 (Extracts, March 2012): 7.

⁵⁵ Michael T. Flynn, Matt Pottinger, and Paul D. Batchelor, *Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan* (Washington, DC: Center for a New American Security, 2010), 9.

⁵⁶ For example, one will be hard pressed to find an economist billet on a CCMD staff.

⁵⁷ Leon Fuerth, “Precis,” in Sheila R. Ronis, ed., *Project on National Security Reform: Vision Working Group Report and Scenarios* (Carlisle, PA: U.S. Army Strategic Studies Institute, 2010), xii.

Thus, leadership of this line of effort is perhaps better suited to the strategy, future plans, and policy arm of the CCMD, the J5.

Finally, JIPOE as it has been discussed thus far is normally only conducted in earnest during crisis action planning at the combatant commands as a prelude to operations, but the theater campaign plan is not an operation, and additionally during shaping, or steady state operations, the environment “. . . is neither ‘steady’ nor easily ‘shapeable’ as defined in the military planning context.” It is a state in which multiple actors frequently operate below the threshold of armed conflict and thus “it consists of more numerous aspects for consideration than that of traditional military planning.”⁵⁸

Therefore, methodologies such as complexity theory, design, foresight and visioning should be applied more broadly throughout the Department of Defense to processes aimed at understanding the future strategic environment. Promulgating these methodologies beyond think tanks, the National Intelligence Estimate, and the various innovation centers scattered throughout the services and joint staff is essential. New doctrine is needed regarding estimates of the strategic environment to reflect a more inclusive whole of staff, and preferably whole of government and society, approach to characterizing the strategic environment and formulating future scenarios that planners can use to provide context and focus theater strategies and campaign plans. The strategic estimate could provide an opportunity to apply new tools and doctrine and gain a greater return on the investment of staff officer time and effort.

⁵⁸ Thomas R. Matelski, “Un-“Steady” State Operations: Redefining the Approach to Phase Zero in a Complex World,” *Strategic Insights* (20 June, 2016), <http://www.strategicstudiesinstitute.army.mil/index.cfm/articles/Un-Steady-State-Operations/2016/06/20> (accessed 20 August, 2016).

Chapter 4: Application to the Strategic Estimate

Successful strategy cannot take place in the present. – Sheila R. Ronis¹

The CCMD's strategic estimate can provide the vehicle for reconstituting a strategic analytic capability within the defense intelligence enterprise, and do so in a way that would better support campaign planning at the combatant commands. The strategic estimate, prepared by the CCMD staff and supporting agencies, examines a broad range of diplomatic, informational, military, economic, and other pertinent factors of the environment that present challenges and opportunities for the CCMD.² Joint Publication 5-0 states it contains:

. . . an analysis of strategic direction received from the President, SecDef, or the authoritative body of a multinational force (MNF); an analysis of all states, groups, or organizations in the operational environment that may threaten or challenge the CCMD's ability to advance and defend U.S. interests in the region; visualization of the relevant geopolitical, geoeconomic, and cultural factors in the region; an assessment of major strategic and operational challenges facing the CCMD; an analysis of known or anticipated opportunities the CCMD can leverage; and an assessment of risks inherent in the operational environment.³

The strategic estimate has a future-oriented component, which provides the foundation for multiple CCMD planning and reporting requirements, including the Theater Strategy, Theater Campaign Plan, and associated Campaign Assessment Process, and Comprehensive Joint Assessment.

¹ Sheila R. Ronis, *Timelines into the Future: Strategic Visioning Methods for Government, Business, and Other Organizations* (New York: Hamilton Books, 2007), 149.

² Chairman of the Joint Chiefs of Staff, *Campaign Planning Procedures and Responsibilities*, CJCSM 3130.01A (Washington, DC: Joint Chiefs of Staff, 25 November, 2014), B-1.

³ U.S. Joint Chiefs of Staff, *Joint Operation Planning*, Joint Publication 5-0 (Washington, DC: Joint Chiefs of Staff, 11 August, 2011), II-7.

The Theater Campaign Plan (TCP)

The CCMD's Theater Campaign Plan is the focal point of this effort because it provides the bridge between strategy and operations for service component headquarters, joint task forces, and other DOD elements assigned or attached to the CCMD. The TCP is "intended to organize and align operations, activities, events and investments in time, space and purpose to achieve strategic effect rather than operational effect," and contains programmatic and national strategic elements that set it apart from other planning activities.⁴

There is currently no other U.S. Government body in which the interagency is integrated to the degree that it is in the CCMDs, which makes them an ideal environment for strategy development.⁵ TCPs are interagency in nature and recent guidance suggests they are informed by and complement the plans of other U.S. Government agencies operating in the region.⁶ Fortunately, lessons learned over the past 20 years led to a greater integration of interagency elements into the headquarters of the CCMDs. Thus, interagency contributions to theater strategy development and campaign planning are essential, especially during shaping operations wherein the DOD is in a supporting role to other government agencies, such as Homeland Defense and Department of State.⁷ The current level of participation by the interagency in the CCMD's theater campaign planning process varies in degree and quality across the CCMD enterprise. The

⁴ Office of the Deputy Assistant Secretary of Defense for Plans, *Theater Campaign Planning Planners' Handbook* (Washington, DC: Office of the Undersecretary of Defense for Policy, February 2012), 1.

⁵ One could argue that Joint Interagency Task Forces are as interagency in nature as CCMDs, at least in name, but JIATFs are primarily tactical in their focus.

⁶ *Theater Campaign Planning Planners' Handbook*, 2.

⁷ Thomas R. Matelski, "Un-"Steady" State Operations: Redefining the Approach to Phase Zero in a Complex World," *Strategic Insights* (20 June, 2016), <http://www.strategicstudiesinstitute.army.mil/index.cfm/articles/Un-Steady-State-Operations/2016/06/20> (accessed 20 August, 2016).

interagency is present nonetheless, and the relationships between agencies are continuing to mature, which provides a unique opportunity to enable the development of a much-needed, integrated regional whole of government approach to strategy and planning within the U.S. Government.⁸

Applying foresight methodologies early in theater strategy development and the campaign planning process, particularly during assessment of the strategic environment, can expand the strategic horizon with scenarios and nuanced indicators of trends to monitor as the plan unfolds. Input from a representatives across the CCMD and interagency staff as well as contributions from outside experts in scenario development will strengthen these processes as well.

The Campaign Assessment Process (CAP)

Joint Publication 5-0 states that assessment “involves deliberately comparing forecasted outcomes to actual events to determine the overall effectiveness of force employment.”⁹ Assessments are purposeful and result in decisions or actions, or both based upon the insights and lessons they generate, and are fundamentally important to the CCMD in this regard because they provide feedback that is critical to determining the relevance and viability of its strategy. While the CCMDs theoretically conduct the CAP on a continuous basis, it is normally done in earnest during the two or three months

⁸ The 2005 Project on National Security Reform report cautions against the tendency to conflate national security with national defense and identified the need for a “whole-of-government approach” to national security issues to better enable the nation to be prepared for the future. To this author’s knowledge, that recommendation has not been acted upon and the various agencies of the U.S. Government continue to behave as they always have, namely, as bureaucracies more often in competition or cross-purpose with one another than in cooperation. See Leon Fuerth, “Precis,” in Sheila R. Ronis, ed., *Project on National Security Reform: Vision Working Group Report and Scenarios* (Carlisle, PA: U.S. Army Strategic Studies Institute, 2010), xii.

⁹ U.S. Joint Chiefs of Staff, Joint Publication 5-0, D-1.

preceding the issuance of the Comprehensive Joint Assessment (CJA) tasking from the JCS, in April through June. While the Joint Staff does specify how the CCMDs are to report their findings, the Joint Force has no established, universally applied methodology for gathering the data required for conducting these assessments, so CCMD staffs have developed unique approaches to the task.¹⁰

If maintained on a continuous basis as described in CJCSM 3130.01A, the strategic estimate could be a ready source of much of the environmental information required by the staff for their assessments of progress in achieving the intermediate military objectives of the campaign plan and theater strategy.¹¹ The problem for the CCMD staff, however, is that there are frequently not enough intelligence analysts or planners on hand to dedicate to maintaining the strategic estimate. Therefore, in order to enable continuous updates to the strategic estimate, the way intelligence ‘production’ and intelligence support to planning is provided to the CCMD staff must change. Intelligence contributions to the strategic estimate must factor into the J2’s analytic production schemes well in advance so analytic resources are aligned to them and production managers can coordinate with external partners for input to fill information gaps. One should note, however, that planners play a leading role in elevating the priority of intelligence support to their efforts by levying requirements on the intelligence

¹⁰ See Ben Connable, *Embracing the Fog of War: Assessment and Metrics in Counterinsurgency*, (Santa Monica, CA: RAND Corporation, 2012), 2. This author discusses the difficulties staff officers are presented with because “there are no clear standards for what a U.S. military campaign assessment should deliver or the form in which it should be presented.”

¹¹ At the time of this writing, the approved and draft versions of Joint Publication 5-0 state that “the theater strategy should begin with the strategic estimate,” and also that the strategic estimate is the “starting point for conducting the commander’s estimate for a specific operation,” further underscoring the utility of the estimate to the CCMD planning effort (see page II-7). Also see Chairman of the Joint Chiefs of Staff, *Campaign Planning Procedures and Responsibilities*, CJCSM 3130.01A (Washington, DC: Joint Chiefs of Staff, 25 November, 2014).

directorates through formal and informal means, especially with regard to the strategic estimate. In this effort, strategy most certainly drives intelligence.

Because the environment the staff seeks to understand is complex and changing, the estimate should be as well lest it become dated, or worse, irrelevant. The same can be said of the Theater Strategy and Theater Campaign Plan the estimate supports because, “. . . strategy needs to be used every day rather than published in a book that gets put on a shelf and occasionally referenced or largely ignored. You cannot produce dynamic strategy using a static strategic document”¹² Thus, maintaining the running strategic estimate becomes a means of keeping the theater strategy relevant through more frequent environmental assessments of campaign plan activity effects as well as the effects of emerging issues.¹³ The strategic estimate product could resemble the *Global Trends* document published by ODNI in terms of its narrative form and scope, but updated more frequently and focused on the CCMD AOR, and focused within the temporal limits of the theater strategy. It could use the *Global Trends* as a springboard for the further development of a regionally-focused output, taking advantage of input gained through collaboration with subject-matter experts from the interagency, the private sector, and academia. Like the *Global Trends* document, an unclassified version should be a priority; a classified version may be produced, but the main body of the document should be releasable to as many partners and allies as possible to widen the potential sources for collaborators possessing needed expertise and points of view.

¹² Evan M. H. Faber, “Grand Strategy and Human Thinking,” in Sheila R. Ronis, ed., *Forging an American Grand Strategy: Securing a Path Through a Complex Future* (Carlisle, PA: Strategic Studies Institute, October 2013), 75.

¹³ This approach also capitalizes on the strengths of operational design, which some have argued is of particular relevance to campaign planning as a whole of government approach, see Adam Elkus and Crispin Burke, “Operational Design: Promise and Problems,” *Small Wars Journal* (February 9, 2010), <http://smallwarsjournal.com/blog/journal/docs-temp/362-elkus.pdf> (accessed 22 November, 2016).

Employing foresight methodology to the process of developing the strategic estimate would improve its usefulness to the staff, but it will also likely require more time and effort from them, at least during the development of the initial edition of the product. A foresight-oriented process encourages the development of multiple scenarios for future outcomes, which translates into more work for the staff not only in terms of conceptualization, development, and refinement, but also in terms of maintenance since all of these scenarios reside in environments of complexity and continuous change. Given the potential gain for the CCMD of improving the quality of the strategic estimate, however, the investment seems worthwhile. Employing these methodologies more broadly through the strategic estimates of all CCMDs would provide an added benefit to the department in the form of a richer and more nuanced set of futures to plan for and improve the ability to assess risks in the context of global or transregional trends.

The Comprehensive Joint Assessment (CJA)

Led by the JCS J5, the CJA is an annual requirement due on 30 September to the Joint Chiefs of Staff. Responses to the CJA questionnaires enable the Chairman to describe “the nature of the strategic environment, the United States’ and its allies’ ability to operate within and influence that environment, potential adversary abilities to do the same, and the risk to national strategies examined temporally over the near- (0-2 yrs), mid- (3-7 yrs), and far-terms (8-20 yrs).”¹⁴ Completing the assessment survey requires close collaboration between intelligence analysts and planners to prepare responses to its

¹⁴ Chairman of the Joint Chiefs of Staff, *The Joint Strategic Planning System*, CJCSI 3100.01C (Washington, DC: Joint Chiefs of Staff, 20 November, 2015), B-1. The CJA will be renamed AJA (Annual Joint Assessment) in the next update of this instruction.

questions. This is especially true for questions related to the characterization of the strategic environment, which is precisely the type of information contained in the running strategic estimate. This information provides context and focus for the staff as they frame their responses to questions in the CJA that help identify future capability requirements. This information is important because it informs the Planning, Programming, Budgeting, and Execution System (PPBES) and influences the Chairman's resource allocation decisions in the future years. Thus, the strategic estimate is among the most important, but undervalued and perhaps under-resourced, outputs of the CCMD staff. It is, therefore, worthy of consideration as the focal point of any effort to restore a strategically-focused capability in the plans and intelligence staffs.

Furthermore, the CJA questionnaire asks the CCMDs and their service component headquarters to identify emerging challenges and opportunities the CCMD anticipates will influence its ability to fulfill its Title 10 and Unified Command Plan responsibilities and accomplish national strategic objectives assigned to it through the National Military Strategy, Joint Strategic Capabilities Plan and other directives.¹⁵ Much of the information on these topics is derived from a running strategic estimate and the outputs of the Campaign Assessment Process. Incorporating foresight methodologies into the development of the strategic estimate would therefore enhance the quality of both the CAP and CJA and all of the associated estimates and assessments that flow from them as they are consolidated by the Joint Staff. Furthermore, participation of interagency representatives and other mission partners on the CCMD staff in the preparation of the questionnaire responses provides an opportunity to introduce a broader range of

¹⁵ Chairman of the Joint Chiefs of Staff, CJCSI 3100.01C.

perspectives to the product. These perspectives can help to moderate what might otherwise be an overly military view of the anticipated challenges and opportunities in the strategic environment, and provide a more comprehensive appreciation of the global security environment by the Joint Staff.

Chapter 5: Conclusion

I imagine that most CEOs have heard the first law of information theory: Every relay doubles the noise and cuts the information in half. The same holds true for most management levels, which neither manage people nor make decisions. They serve only as relays. When we build in information as a structural element, we don't need such levels.
– Peter F. Drucker ¹

“We live in a world where surprises are the norm.”² The ability to anticipate and prepare for surprise is a trait that provides a competitive advantage to organizations.

Strategy, as an outcome of strategic thinking, provides organizations with the foresight needed to anticipate surprise. Problematically, the hierarchical bureaucratic structures of the U.S. planning and intelligence enterprise organizations do not provide an environment that is conducive to knowledge work or foresight. The management structures currently in place are fast becoming anachronistic and maladaptive paradigms in an increasingly networked and interconnected world. The organizations serve to regulate rather than stimulate. If surprises are the norm, then strategic advantage will be gained by organizations powered by creative, collaborative, and innovative workforces.

It is inevitable that the character of the Department of Defense workforce will change, if for no other reason than the fact that a new generation is entering the workforce and its work habits, learning preferences, and technical sensibilities will eventually predominate. This generation of U.S. workers epitomizes the knowledge worker Peter Drucker described more than any previous generation. Promoting the growth of a strategy-capable workforce will require changes to how these knowledge workers are led in their daily work and a re-examination of the structure of the

¹ Peter F. Drucker, *Managing in the Next Society* (New York: St. Martin's Press, 2002), 47.

² Peter Schwartz, *Inevitable Surprises: Thinking Ahead in a Time of Turbulence* (New York: Gotham Books, 2003), 2.

organizations employing them. Drucker observed that attracting and keeping these knowledge workers “will have to be done by satisfying their values, and by giving them social recognition and social power. It will have to be done by turning them from subordinates into fellow executives, and from employees, however well paid, into partners.”³

The review of organizational types provided in Chapter 2 reveals that steps can be taken to better accommodate knowledge workers in the near term without implementing widespread changes to DIE organizations and CCMDs. In fact, this may even be undesirable because they are quite effective at responding to the ad hoc tasks and crises that comprise the bulk of their current portfolios. Since the output of the strategic estimate satisfies the needs of a relatively small customer base of planners and decision-makers, the level of effort devoted to it at the outset can be small. It is, however, an important customer base with considerable responsibilities, so resources will need to be dedicated in the form workers with the requisite knowledge, skills, and abilities to function productively as strategic planners and analysts. These individuals must gain the trust of their leaders and peers, and act autonomously in the performance of their duties. Autonomy will provide these workers with the license to think deeply and creatively, collaborate broadly, dialogue directly with their customers, and maintain a forward-looking perspective.

Adopting the positive traits of the ambidextrous organizational structure is one way to avoid disruption of the current operations-focused and explanatory product lines

³ Drucker, *Managing in the Next Society*, 24. Also see Courtney Weinbaum, Richard Girven, Jenny Oberholtzer, *The Millennial Generation: Implications for the Intelligence and Policy Communities*, (Santa Monica CA: RAND Corporation, 2016).

that are the mainstay of the organization while simultaneously generating the innovative, anticipatory outputs currently in short supply. Becoming more ambidextrous is likely both more achievable and desirable than wholesale reorganization because it would retain core competencies in the exploitative, business-as-usual main body of the organization while allowing for innovative, exploratory work to occur in the other, smaller unit. Therefore, an incremental approach to change, through the formation of small but highly experienced teams of strategic planners and analysts whose efforts are dedicated to building and maintaining the strategic estimate, and managing updates to the theater strategy and campaign plan seems an unquestionably necessary means of achieving at least a foundational capability.

Strategic foresight is a team sport. Strategic thinking, planning, and intelligence are most effectively achieved through the iterative learning by multi-talented teams rather than individual specialists. The ability to establish trusted networks and build “teams of teams” is a highly desired skill in successful organizations, not only in terms of knowledge production, but in terms of maximizing limited human capital resources through the production of social capital.⁴ Organizing teams around problems rather than regions or functions is one approach to enabling greater agility and promoting innovation in the workplace. This study reiterates the findings of many others that innovation is difficult in hierarchical bureaucracies. Yet, one finds that there are numerous isolated innovation centers spread across the DOD in the services, the Joint Staff, Combat

⁴ Michael J. Arena and Mary Uhl-Bien, “Complexity Leadership Theory: Shifting from Human Capital to Social Capital,” *People + Strategy*, Vol. 39, Issue 2 (Spring 2016): 22. Also see, Chih-Hsing Liu, “The Process of Social Capital and Employee Creativity: Empirical Evidence from Intraorganizational Networks,” *The International Journal of Human Resource Management*, Vol. 24, No. 20 (2013): 3886-3902.

Support Agencies, Defense Agencies, CCMDs, and government think tanks. These efforts are not federated, however, so it is likely that an effort to expose or advertise them to the broader DOD community would open opportunities to collaborate for the benefit all.

Many of the authors cited in this paper provide insights into the qualities that make good strategists, planners, and intelligence analysts. Some, like Faber, Hailes, Krepinevich, and Polski assert that strategy requires the development of intellectual traits that are uncommon among even senior members of the DOD workforce. Cooper, Hoover, Kerbel, Lowenthal, and others make a similar case for the intellectual traits that make for good analysts. We need, as a former DIA Director observed, “a future orientation that will provide us with the right focus to develop foresight to meet the next challenges. In order to achieve this prerequisite to success, we need the best minds and the greatest human spirits to develop national and allied capabilities,” which includes strategic thinking.⁵

Reconstituting a strategic intelligence capability will require more active participation from the consumers of future-oriented intelligence estimates, and contributions from across the interagency and a host of public and private sources to incorporate into the process of developing scenarios. As Leon Fuerth has argued, it may even require their leadership since the goal will be to increase understanding of the range of uncertainties, which is one of the goals of operational design—an activity typically led

⁵ LTG Patrick M. Hughes, “On Emergence, Convergence, and Complexity,” *Military Review* (March-April 2016): 45.

by planners.⁶ This contrasts with the intelligence officer's goal of reducing uncertainty "through the discovery and analysis of patterns that might otherwise be concealed."⁷

Regaining a strategic perspective will require the application of new methodologies to better anticipate the future security environment and understand the ever-changing landscape of challenges and opportunities presented. Training the workforce in the use of strategic foresight, visioning, complexity theory, and like methodologies and making them standard-issue tools for all analysts and planners builds upon existing efforts to improve critical thinking, but also enables creative thinking and strategic foresight. Strategic foresight involves the development of scenarios for potential futures that are not intended to be predictive, but rather serve to "challenge existing assumptions about the future, to consider 'what if' possibilities, and to plan and act differently."⁸ Foresight is also compatible with and enables estimative intelligence, which is exploratory in nature and seeks to determine "what might be or might happen" as opposed to the explanatory nature of current intelligence, which is more "reportorial and interpretive."⁹

New doctrine is needed to guide a more unified approach to theater campaign planning and strategy development, including a "Joint Preparation of the Strategic Environment" that exploits the unique whole of government capabilities within the CCMDs to broaden the staff's appreciation of the strategic environment. Design thinking

⁶ Michael A. Santacrose, *Joint/Interagency Smartbook: Joint Strategic & Operational Planning* (Lakeland, FL: The Lightning Press, 2014), 6-7.

⁷ Leon Fuerth, "Precis," in Sheila R. Ronis, ed., *Project on National Security Reform: Vision Working Group Report and Scenarios* (Carlisle, PA: U.S. Army Strategic Studies Institute, 2010), xii. Intelligence can be viewed as an enabler of strategy and planning, see Roger Z. George, "The Art of Strategy and Intelligence," in *Analyzing Intelligence: Origins, Obstacles, and Innovations*, ed. James B. Bruce and Roger Z. George (Washington, DC: Georgetown University, 2008), 107-121.

⁸ Andy Hines, "Strategic Foresight: The State of the Art," *The Futurist* (September-October 2006): 20.

⁹ Joseph S. Nye, Jr., "Peering into the Future," *Foreign Affairs* 73, no. 4 (July/August 1994): 82.

is having a positive impact on operational planning, but existing doctrine does not adequately explain how a staff does operational design or how it integrates with and informs the Joint Planning Process, so it too is in need of an update in light of lessons learned in the field as well as academia and private enterprise.¹⁰

An aptitude for foresight does not come as naturally to human beings as one might assume, but it is an aptitude that can be nurtured with support and participation from leaders who are themselves critical thinkers. Therefore, the DOD needs to do a better job of determining what those traits are, identifying individuals who possess them, and employing them more effectively throughout their careers. This will require changes to personnel management practices to facilitate the assignment of personnel with greater emphasis on their discreet knowledge, skills, and abilities. At what point in one's career should human capital managers begin to identify workers with the requisite basic aptitudes? What career assignments, professional education, and experience would enable the development of the requisite competencies? The U.S. Army's Advanced Strategic Planning and Policy Program, established to remedy a perceived shortfall in that service's strategic planning capability, provides a model that could be emulated across DOD.¹¹

Maintaining a "running strategic estimate" of the strategic environment considers multiple future scenarios developed through a collaborative whole of staff process, which includes interagency representation. The running estimate would provide the focus of effort for this exploratory element of the organization. Over time, this estimate will

¹⁰ Keith D. Dickson, "Operational Design: A Methodology for Planners," (Norfolk, VA: Joint Forces Staff College, (no date). In this paper, Dr. Dickson details the shortcomings of JP 5-0's descriptions of operational design and JOPP, and offers an 8-step process in an attempt to lend clarity for practitioners.

¹¹ Gordon B. Davis Jr., Thomas C. Graves, and Christopher N. Prigge, "The Strategic Planning "Problem,"" *Military Review* (November-December 2013): 10-17.

provide a more robust source of information for staff engaged in PPBES activities associated with the campaign assessment process. It would also prompt more frequent reviews of scenarios, and suggest adjustments to the theater strategy in light of those assessments.

The CCMD's strategic estimate can provide the vehicle for reconstituting a strategic analytic capability within the defense intelligence enterprise, and do so in a way that would better support campaign planning at the combatant commands and across the joint community. A stronger demand signal from CCMD J5s and others will be necessary to prompt change within their supporting J2s. This presents a considerable challenge, however, since these customers and the DIE that supports them are overwhelmingly focused on the production of current intelligence. The strategic estimate is a future-oriented document and it serves as the starting point for multiple CCMD planning and reporting requirements including the Theater Strategy, Theater Campaign Plan, and associated Campaign Assessment Process, and Comprehensive Joint Assessment. Thus, it presents an immediate opportunity to engage J2 and J5 staff in the creation of a practical, strategically-focused product with great utility for the CCMD enterprise.

The CCMD's Theater Campaign Plan is the focal point of this effort because it links strategy and operations for the service component headquarters, joint task forces, and other DOD elements comprising the CCMD enterprise. The TCP intends "to organize and align operations, activities, events and investments in time, space and purpose to achieve strategic effect rather than operational effect," and contains programmatic and national strategic elements that set it apart from other planning

activities.¹² Applying foresight methodologies to the process of developing scenarios is a means of preparing the CCMD for the future end states and widening the aperture of possibilities of what may be, so action can be taken sooner to influence adjustments to the Theater Strategy and Theater Campaign Plan. In doing so, the CCMDs would also provide the joint staff with a more nuanced composite picture of the future global security environment as the scenarios are incorporated into their campaign assessments and Comprehensive Joint Assessment responses.

History is replete with examples of militaries that employed new tactics or weapons to gain advantage over less adaptable adversaries. Michael Howard wrote that, in war “usually everybody starts even and everybody starts wrong. . . . In these circumstances . . . the advantage goes to the side which can most quickly adjust itself to the new and unfamiliar environment and then learn from its mistakes.”¹³ Adaptability and innovation are traits inherent in successful enterprises throughout society. Hierarchical, pyramidal, and stove-piped organizations served the military well for centuries, but these command structures are obstacles to the formation of interdisciplinary, inter-organizational teams, and collaborative efforts required to understand the complex issues confronting strategists and policy-makers. The enterprise must voluntarily and aggressively take action to change the way it organizes, not only in response to the current volatile, chaotic, and rapidly changing security environment, but in anticipation of the future as well. If it does not do so, the day will come when change will not be an option, and regaining the initiative, if possible, will come at a much greater cost.

¹² Office of the Deputy Assistant Secretary of Defense for Plans, *Theater Campaign Planning Planners' Handbook* (Washington, DC: Office of the Undersecretary of Defense for Policy, February 2012), 1.

¹³ Michael Howard. “Military Science in the Age of Peace,” *RUSI* (March 1974): 6.

Bibliography

- Aid, Matthew M. "Sins of Omission and Commission: Strategic Cultural Factors and U.S. Intelligence Failures During the Cold War." *Intelligence and National Security* Vol. 26 (August 2011): 478-494.
- Alavi, Somaieh, Dzuraidah Abd. Wahab, Norhamidi Muhamad, and Behrooz Arbab Shirani. "Organic Structure and Organisational Learning as the Main Antecedents of Workforce Agility." *International Journal of Production Research* Vol. 52, no. 21 (2014): 6273–6295.
- Aldrich, Richard and John Kasuku. "Escaping from American Intelligence: culture, ethnocentrism, and the Anglosphere." *International Affairs* Vol. 8, no. 5 (2012): 1009-1028.
- Allen, Charles D. *Creative Thinking for Individuals and Teams: An Essay on Creative Thinking for Military Professionals*. Carlisle, PA: U.S. Army War College, 2009.
- Arena, Michael J. and Mary Uhl-Bien. "Complexity Leadership Theory: Shifting from Human Capital to Social Capital." *People + Strategy* Vol. 39, Issue 2 (Spring 2016): 22-27.
- Barno, David W. "Military Adaptation in Complex Operations." *Prism* 1, no. 1 (2009): 27-36.
- Bernstein, Ethan, John Bunch, Niko Canner, and Michael Lee. "Beyond the Holacracy Hype: The overwrought claims—and actual promise of—the next generation of self-managed teams." *Harvard Business Review* (July-August 2016): 38-49.
- Betts, Richard K. "Is Strategy and Illusion?" *International Security* 25, no. 1 (Fall 2000): 5-50.
- Bjornstad, Anne Lise. "Exploring Network Organization in Military Context: Effects of Flatter Structure and More Decentralized Processes." *Military Psychology* 23 (2011): 315-331.
- Bowman, Scott M. *Shifting Perspectives: Using Complexity Theory to Anticipate Strategic Surprise*. Master's Thesis. Norfolk VA: Joint Forces Staff College, Joint Advanced Warfighting School, 09 February, 2015.
- Bunderson, J. Stuart, Gerben S. Van Der Veght, Yeliz Cantimur, and Floor Rink. "Different Views of Hierarchy and Why They Matter: Hierarchy as Inequality or Cascading Influence." *Academy of Management Journal* 59, no. 4 (2016): 1265–1289.

- Cardillo, Robert. "Team GEOINT: This Is Our Moment." *Vital Speeches of the Day* (September 2015): 280-284.
- Chairman of the Joint Chiefs of Staff. *Joint Strategic Planning System*. CJCSI 3100.01C. Washington, DC: U.S. Joint Chiefs of Staff, 20 November, 2015.
- _____. *Campaign Planning Procedures and Responsibilities*. CJCSM 3130.01A. Washington, DC: U.S. Joint Chiefs of Staff, 25 November, 2014.
- Chang, Welton. "Fixing Intelligence: Reforming the Defense Intelligence Enterprise for Better Analysis." *American Intelligence Journal*, Vol 31, No. 1 (January 1, 2013): 86-90.
- _____ and Philip E. Tetlock. "Rethinking the Training of Intelligence Analysts." *Intelligence and National Security* 31:6 (2016): 903-920.
- Chermack, Thomas J., Laura M. Coons, Kim Nimon, Peggy Bradley, and Margaret B. Glick. "The Effects of Scenario Planning on Participant Perceptions of Creative Organizational Climate." *Journal of Leadership and Organizational Studies* Vol. 22, No. 3 (2015): 355-371.
- Connable, Ben. *Embracing the Fog of War: Assessment and Metrics in Counterinsurgency*. Santa Monica, CA: RAND Corporation, 2012.
- Cooper, Jeffrey R. "Curing Analytic Pathologies; Pathways to Improved Intelligence Analysis." Washington, DC: Center for the Study of Intelligence, December 2005: 32-34.
- Cummings, Larry. "Organizational Climates for Creativity." *Academy of Management Journal*, (September 1965): 220-227.
- _____, Bernard L. Hinton, and Bruce C. Gobdel. "Creative Behavior as a Function of Task Environment: Impact of Objectives, Procedures, and Controls." *Academy of Management Journal* 18, no. 3 (September 1975): 489-499.
- Dale, Catherine. *The 2014 Quadrennial Defense Review (QDR) and Defense Strategy: Issues for Congress*. Washington, DC: Congressional Research Service, 24 February, 2014.
- Defense Intelligence Agency. *2014 Defense Intelligence Agency Innovation Strategic Plan*. Washington, DC: Defense Intelligence Agency. http://www.defenseinnovationmarketplace.mil/resources/DIA_InnovationStrategy.pdf (accessed 17 December, 2016).
- Davis, Gordon B. Jr., Thomas C. Graves, and Christopher N. Prigge. "The Strategic Planning "Problem."” *Military Review* (November-December 2013): 10-17.

- Dickson, Keith D. "Operational Design: A Methodology for Planners." Norfolk, VA: Joint Forces Staff College (No Date).
- Drucker, Peter. *The Essential Drucker: Selections from the Management Works of Peter F. Drucker*. New York: HarperCollins, 2001.
- _____. *Managing in the Next Society*. New York: St. Martin's Press, 2002.
- Ducote, Brian M. *Challenging the Application of PMESII-PT in a Complex Environment*. FT Leavenworth, KS: School of Advanced Military Studies, United States Army Command and General Staff College, May 2010.
- Echevarria, Antulio J. II. *Operating in the Gray Zone: An Alternative Paradigm for U.S. Military Strategy*. Carlisle Barracks, PA: U.S. Army War College Press, April 2016.
- _____. "Rediscovering U.S. Military Strategy: A Role for Doctrine." *The Journal of Strategic Studies* 39, no. 2 (2016): 231-245.
- Elkus, Adam and Crispin Burke. "Operational Design: Promise and Problems." *Small Wars Journal* (February 9, 2010). <http://smallwarsjournal.com/blog/journal/docs-temp/362-elkus.pdf>. (accessed 22 November, 2016).
- Evan, William M. "Superior-Subordinate Conflict in Research Organizations." *Administrative Science Quarterly* 10 (June 1965): 52-64.
- Faber, Evan M. H. "Grand Strategy and Human Thinking." in Sheila R. Ronis, ed., *Forging an American Grand Strategy: Securing a Path Through a Complex Future*, 71-75. Carlisle, PA: Strategic Studies Institute, October 2013.
- Fastabend, David A. and Robert H. Simpson. "The Imperative for a Culture of Innovation in the U.S. Army: Adapt or Die." *Army* (February 2004): 14-22.
- Ferguson, Keith and Nicole Woodyard. "Picturing the Art of Strategic Thinking." *Army Magazine* (September 2016): 38-39.
- Flynn, Michael T., Matt Pottinger, and Paul D. Batchelor. *Fixing Intel: A Blueprint for Making Intelligence Relevant in Afghanistan*. Washington, DC: Center for a New American Security, 2010.
- Freier, Nathan P., et al. *Outplayed: Regaining Strategic Initiative in the Gray Zone*. Carlisle Barracks, PA: U.S. Army War College Press, June 2016.
- Friesen, Justin P., Richard P. Eibach, Aaron C. Kay, and Adam D. Galinsky. "Seeking Structure in Social Organization: Compensatory Control and the Psychological

- Advantages of Hierarchy.” *Journal of Personality and Social Psychology* 106, no. 4 (2014): 590-609.
- Fuerth, Leon S. “Precis,” in *Project on National Security Reform: Vision Working Group Report and Scenarios*, xi-xiv. Sheila R. Ronis, ed. Carlisle, PA: U.S. Army Strategic Studies Institute, 2010.
- _____. “Grand Strategy,” in *Forging an American Grand Strategy: Securing a Path Through a Complex Future*, 9-18. Sheila R. Ronis, ed. Carlisle, PA: U.S. Army Strategic Studies Institute, October 2013.
- Gaskarth, Jamie. “Strategy in a Complex World.” *RUSI Journal* Vol. 160, No. 6 (December 2015): 4-11.
- Gentry, John A. “Managers of Analysts: The Other Half of Intelligence Analysis.” *Intelligence and National Security* Vol. 31, No.2 (2016): 154-177.
- _____. “The “Professionalization” of Intelligence Analysis: A Skeptical Perspective.” *International Journal of Intelligence and CounterIntelligence* 29, no. 4 (2016): 643–676.
- Gerras, Stephen J. and Leonard Wong. *Changing Minds in the Army: Why It’s So Difficult and What To Do About It*. Carlisle, PA : Strategic Studies Institute and U.S. Army War College Press (2013).
- George, Roger Z. “The Art of Strategy and Intelligence,” in *Analyzing Intelligence: Origins, Obstacles, and Innovations*, 107-121. Edited by James B. Bruce and Roger Z. George. Washington, DC: Georgetown University, 2008.
- Gobble, MaryAnn M. “Designing for Change.” *Research–Technology Management* (May-June 2015): 64-66.
- Goh, Swee C. “Toward a Learning Organization: The Strategic Building Blocks.” *SAM Advanced Management Journal* (Spring 1998): 15-22.
- Gray, Colin S. *Irregular Enemies and the Essence of Strategy: Can the American Way of War Adapt?* Carlisle PA: U.S. Army Strategic Studies Institute, March 2006.
- Haass, Richard N. “The Age of Nonpolarity.” *Foreign Affairs* Vol. 87, No.3 (May/June 2008): 44-56.
- Hackman, J. Richard and Michael O’Connor. *Intelligence Science Board Task Force Report on What Makes for a Great Analytic Team? Individual versus Team Approaches to Intelligence Analysis*. Washington, DC: Office of the Director of the Central Intelligence Agency, February 2004.

- Hagel, Charles. *Quadrennial Defense Review*. Washington, DC: U.S. Department of Defense, March 4, 2014.
- Hailes, Theodore C. "Building Creative Military Leaders: Challenges to Overcome," in *Changing Mindsets to Transform Security*, 215-232. Edited by Linton Wells II, Theodore C. Hailes, and Michael C. Davies. Washington, DC: Center for Technology and National Security Policy, Institute for National Security Studies, National Defense University, 2013.
- Hall, Wayne M. *Stray Voltage: War in the Information Age*. Annapolis, MD: Naval Institute Press, 2003.
- Hill, Andrew. "Military Innovation and Military Culture." *Parameters* 45, no. 1 (Spring 2015): 85-98.
- _____ and Stephen Gerras. "Systems of Denial: Strategic Resistance to Military Innovation." *Naval War College Review* 69, no. 1 (Winter 2016): 109-132.
- Hines, Andy. "Strategic Foresight: The State of the Art." *The Futurist* (September-October 2006): 18-21.
- Hoover, David L. "A Failure of Imagination in the U.S. Intelligence Community." *American Intelligence Journal* 31, no. 1 (2013): 59-71.
- Howard, Michael. "Military Science in the Age of Peace." *RUSI* (March 1974): 3-10.
- Hughes, LTG Patrick M. "On Emergence, Convergence, and Complexity." *Military Review* (March-April 2016): 42-46.
- Javorsek, Daniel II and John G. Schwitz. "Probing Complexity, Uncertainty, and Human Agency in Intelligence." *Intelligence and National Security*, Vol. 29, No. 5 (2014): 693-653.
- Johnston, Rob. *Analytic Culture in the U.S. Intelligence Community*. Washington, DC: Center for the Study of Intelligence, 2005.
- Kamensky, John. "Can Self-Managed Teams Work in Government?" *Government Executive*, (09 August 2016). <http://eds.b.ebscohost.com/eds/detail/detail?sid=1aa f8e80-4ce5-4c40-89fc-a5efdd5de8ed%40sessionmgr105&vid=2&hid=108&bdat a=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=117366732&db=mth> (accessed 23 September, 2016).
- Kelly, Justin and David Kilcullen. "Chaos Versus Predictability: A Critique of Effects-Based Operations." *Security Challenges* Vol. 2, no.1 (2006): 63-73.
- Kerbel, Josh. "For the Intelligence Community, Creativity is the New Secret." *World Politics Review*, (2010). <http://eds.a.ebscohost.com.nduezproxy.idm.oclc.org/>

eds/detail/detail?vid=10&sid=8f9ac5d6-b120-4b4b-8944-7580b186bae2%40
sessionmgr4007&hid=4213&bdata =JnNpd GU9ZWRzLWxpdmUmc2NvcGU9
c2l0ZQ%3d% 3d#AN=50654633&db=wpr (accessed 26 August, 2016).

- Krepinevich, Andrew F. and Barry D. Watts. *Strategy for the Long Haul: Regaining Strategic Competence*. Washington, DC: Center for Strategic and Budgetary Assessments, 2009.
- Larkin, Sean P. "The Limits of Tailored Deterrence." *Joint Forces Quarterly* issue 63 (4th quarter 2011): 47-57.
- Liddell-Hart, B.H. *The Military Quotation Book*, 65. Edited by James Charlton. New York: St. Martin's Press, 1990.
- Lin, Hsing-Er and Edward F. McDonough III. "Investigating the Role of Leadership and Organizational Culture in Fostering Innovation Ambidexterity." *IEEE Transactions on Engineering Management* 58, no. 3 (August 2011): 497-509.
- Lindsay, Douglas R., David V. Day, and Stanley M. Halpin. "Shared Leadership in the Military: Reality, Possibility, or Pipedream?" *Military Psychology* 23 (2011): 528-549.
- Liu, Chih-Hsing. "The Process of Social Capital and Employee Creativity: Empirical Evidence from Intraorganizational Networks." *The International Journal of Human Resource Management* Vol. 24, No. 20 (2013): 3886-3902.
- Locher, James R. III, "Foreword," in *Project on National Security Reform: Vision Working Group Report and Scenarios*. Sheila R. Ronis, ed. Carlisle, PA: Strategic Studies Institute, U.S. Army War College, July 2010.
- Lowenthal, Mark M. "Transforming Intelligence: From What to What?" *American Intelligence Journal* 29, no. 1 (2011): 5-11.
- _____. *Intelligence: From Secrets to Policy*. Los Angeles, CA: Sage Publications, 2012.
- _____. "Intelligence Education: Quo Vadimus?" *American Intelligence Journal* 32, no. 2 (2013): 7-11.
- Mainemelas, Charalampos. "Stealing Fire: Creative Deviance in the Evolution of New Ideas." *Academy of Management Review* 35, no. 4 (October 2010): 558-578.
- Matelski, Thomas R. "Un-"Steady" State Operations: Redefining the Approach to Phase Zero in a Complex World." *Strategic Insights* (20 June, 2016). <http://www.strategicstudiesinstitute.army.mil/index.cfm/articles/Un-Steady-State-Operations/2016/06/20> (accessed 20 August, 2016).

- May, Ernest R. "Intelligence: Backing Into the Future." *Foreign Affairs* 71, no. 3 (Summer 1992): 63-72.
- McCauley, Daniel H. "Rediscovering the Art of Strategic Thinking: Developing 21st-Century Strategic Leaders." *Joint Forces Quarterly* 81 (2nd Quarter 2016): 26-33.
- McCord, Patty. "How NETFLIX Reinvented HR," *Harvard Business Review* (January-February 2014). <https://hbr.org/2014/01/how-netflix-reinvented-hr> (accessed 17 December, 2016).
- McChrystal, GEN Stanley. *Team of Teams: New Rules of Engagement for a Complex World*. New York: Portfolio/Penguin, 2015.
- McGregor, Douglas. "The Human Side of Enterprise." *Reflections* 2 (Fall 2000): 6-15.
- Mengistu, Henok, et al. "The Evolutionary Origins of Hierarchy," *PLOS Computational Biology* (June 9, 2016): 1-23. <http://eds.b.ebscohost.com/eds/pdfviewer/pdfviewer?vid=2&sid=e6616f59-0527-43fe-b3c9-f34f032a30b6%40sessionmgr107&hid=113> (accessed 11 October, 2016).
- Moore, David T. *Critical Thinking and Intelligence Analysis*, Occasional Paper Number Fourteen. Washington, DC: National Defense Intelligence College, 2009.
- Murray, Williamson. "The Historical Framework of Adaptation," in *Military Adaptation in War*, 2-1-2-42. Alexandria, VA: Institute for Defense Analysis, June 2009.
- _____ and Allan R. Millett, eds. *Military Innovation in the Interwar Period*. New York: Cambridge University Press, 1996.
- Nemeth, Charlan Jeanne. "Managing Innovation: When Less is More." *California Management Review* 40, no. 1 (Fall 1997): 59-74.
- Nieto-Rodriguez, Antonio. "Ambidexterity, Inc." *Business Strategy Review*, Issue 3 (2014): 36. <http://content.ebscohost.com/ContentServer.asp?T=P&P=AN&K=103389226&S=R&D=buh&EbscoContent=dGJyMNHr7ESeprc4zdnyOLCmr06eprdSs6%2B4Ta%2BWxWXS&ContentCustomer=dGJyMPGpt02xr65LuePfgcyx43zx> (accessed 09 October, 2016).
- Norwood, Paul R., Benjamin M. Jensen, and Justin Barnes. "Capturing the Character of Future War." *Parameters* Vol. 26, No. 2 (Summer 2016): 81-91.
- Nye, Joseph S. Jr. "Peering into the Future." *Foreign Affairs* 73, no. 4(July/August 1994): 82-93.
- _____. "The Future of American Power: Dominance and Decline in Perspective." *Foreign Affairs* Vol. 89, no. 6 (November/December 2010): 2-12.

- Office of the Deputy Assistant Secretary of Defense for Plans. *Theater Campaign Planning Planners' Handbook*. Washington, DC: Office of the Undersecretary of Defense for Policy, February 2012.
- O'Reilly, Charles A. III and Michael L. Tushman. "The Ambidextrous Organization." *Harvard Business Review* (April 2004): 74-81.
- _____. "Organizational Ambidexterity: Past, Present, and Future." *The Academy of Management Perspectives* (November 1, 2013): 324-338.
- Paparone, Christopher R., Ruth A. Anderson, and Reuben R. McDaniel, Jr. "Where Military Professionalism Meets Complexity Science." *Armed Forces & Society* Vol. 34, No. 3 (April 2008): 433-449.
- Phillips, Christopher and Bobbie DeLeon. "Redefining the "Can Do" Attitude: The Language of a Critical Thinking Culture." *Defense AT&L* (January-February 2017): 45-47.
- Polski, Margaret M. "Strategy 2.0: The Next Generation." *Joint Forces Quarterly* 81 (2nd Quarter 2016): 19-25.
- Price, John F. Jr. "The Downfall of Adaptive Planning: Finding a New Approach after a Failed Revolution." *Air & Space Power Journal* (March–April 2012): 118-131.
- _____. "Napoleon's Shadow: Facing Organizational Design Challenges in the U.S. Military." *Joint Forces Quarterly* 68 (1st Quarter 2013): 48-52.
- Record, Jeffrey. "Operational Brilliance, Strategic Incompetence: The Military Reformers and the German Model." *Parameters* Vol. XVI, No.3 (1986): 2-8.
- Reeves, Martin and Mike Deimler. "Adaptability: The New Competitive Advantage." *Harvard Business Review* (July/August 2011): 135-141.
- Reingold, Jennifer. "The Zappos Experiment." *Fortune* (March 15, 2016): 206-214.
- Reveron, Derek S. and James L. Cook. "From National to Theater: Developing Strategy." *Joint Forces Quarterly* 70 (3rd Quarter 2013): 113-120.
- Ronis, Sheila R. *Timelines into the Future: Strategic Visioning Methods for Government, Business, and Other Organizations*. Lanham MD: Hamilton Books, 2007.
- Sanders, T. Irene. *Strategic Thinking and the New Science: Planning in the Midst of Chaos, Complexity, and Change*. New York: The Free Press, 1998.

- Santacroce, Michael A. *Joint/Interagency Smartbook: Joint Strategic & Operational Planning*. Lakeland, FL: The Lightning Press, 2014.
- Sarpong, David, Mairi Maclean, and Elizabeth Alexander, "Organizing strategic foresight: A contextual practice of 'way finding'." *Futures* 53 (2013): 33–41.
- Scales, Major General Robert H. Jr. and Lieutenant General Paul K. Van Riper, USMC. "Preparing for War in the 21st Century," in *Future War Anthology, Revised Edition*, 23-40. Carlisle, PA: U.S. Army Strategic Studies Institute, 2001.
- Schwartz, Peter. *The Art of the Long View: Planning for the Future in an Uncertain World*. New York: Currency, 1996.
- _____. *Inevitable Surprises: Thinking Ahead in a Time of Turbulence*. New York: Gotham Books, 2003.
- Simon, James M. Jr. "Intelligence Analysis as Practiced by the CIA." *International Journal of Intelligence and CounterIntelligence* 26 (2013): 641-651.
- Simons, Anna. "War: Back to the Future." *Annual Review of Anthropology* 28 (1999): 73-108.
- Sisney, Lex. "The 5 Classic Mistakes in Organizational Structure: Or, How to Design Your Organization the Right Way." *Organization Physics*. <http://organizationalphysics.com/2012/01/09/the-5-classic-mistakes-in-organizational-structure-or-how-to-design-your-organization-the-right-way/> (accessed 10 October, 2016).
- Slaughter, Anne-Marie. "How to Succeed in the Networked World: A Grand Strategy for the Digital Age." *Foreign Affairs* Vol. 95, no.6 (November/December 2016): 76-89.
- Smith, Roger. "Bureaucracy as Innovation." *Research-Technology Management* (January-February 2016): 61-63.
- Sommers, Cecily. *How to Think Like a Futurist: What Changes, What Doesn't, and What's Next*. Jossey-Bass, 2102.
- Spain, Everett S.P., J.D. Mohundro, and Bernard B. Banks, "Intellectual Capital: A Case for Cultural Change." *Parameters* 45(2) (Summer 2015): 77-91
- Sripirabaa, B. and Sudha Maheswari T. "Individual Creativity: Influence of Job Autonomy and Willingness to take Risk." *SCMS Journal of Indian Management* (October - December 2015): 110-118.
- Summers, Harry G. Jr. *The Making of Military Strategy for the Twenty-First Century*. Berkeley: University of California Press, 1997.

- Thucydides. *History of the Peloponnesian War*. Translated by Rex Warner. New York: Penguin Books, 1972.
- Treverton, Gregory. "Products or Outputs?: Probing the Implications of Changing the Outputs of Intelligence." *Studies in Intelligence* 56, no. 1 (Extracts, March 2012): 1-11.
- _____ and C. Bryan Gabbard. *Assessing the Tradecraft of Intelligence Analysis*. Santa Monica, CA: RAND Corporation, 2008.
- _____ and Jeremy J. Ghez. *Making Strategic Analysis Matter*. Santa Monica, CA: RAND Corporation, 2012.
- Tushman, Michael L. and Charles A. O'Reilly III. "Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change," *California Management Review* 38, no. 4 (Summer 1996): 8-30.
- U.S. Department of Defense. *Quadrennial Defense Review*. Washington, DC: U.S. Department of Defense, 4 March, 2014.
- U.S. Joint Chiefs of Staff. *Joint Intelligence*. Joint Publication 2-0. Washington, DC: U.S. Joint Chiefs of Staff, 2013.
- _____. *Joint Operation Planning*. Joint Publication 5-0. U.S. Joint Chiefs of Staff, Washington, DC: 11 August, 2011.
- U.S. Secretary of Defense. *Defense Intelligence Agency (DIA)*. DOD Directive 5105.21. Washington, DC: U.S. Joint Chiefs of Staff, March 18, 2008.
- Useem, Jerry. "Are Bosses Necessary?" *The Atlantic* (October 2015): 28-32.
- Wack, Pierre. "Scenarios: Uncharted Waters Ahead." *Harvard Business Review* (September 1985). <https://hbr.org/1985/09/scenarios-uncharted-waters-ahead> (accessed 05 November, 2016).
- _____. "Scenarios: Shooting the Rapids." *Harvard Business Review* (November-December, 1985). <https://hbr.org/1985/11/scenarios-shooting-the-rapids> (accessed 05 November, 2016).
- Warren, Jason W. "The Centurion Mindset and the Army's Strategic Leader Paradigm." *Parameters* 45 (3) (Autumn 2015):27-38.
- Waters, Douglas E. "Understanding Strategic Thinking and Developing Strategic Thinkers." *Joint Forces Quarterly* 63 (4th quarter 2011): 113-119.

Weinbaum, Cortney, Richard Girven, Jenny Oberholtzer. *The Millennial Generation: Implications for the Intelligence and Policy Communities*. Santa Monica CA: RAND Corporation, 2016.

Wilkenson, Angela and Roland Kupers. "Living in the Futures: How Scenario Planning Changed Corporate Strategy," *Harvard Business Review* (May 01, 2013): 119-127.

Wilson, James Q. *Bureaucracy: What Government Agencies Do and Why They Do It*. New York: Basic Books, 2000.

Zinni, Anthony C. "A commander Reflects." *U.S. Naval Institute Proceedings* 126 (7 Jul 2000). [http://eds.b.ebscohost.com/eds/detail/detail?vid=2&sid=56027665-953f-4d39-8c4a-bbdcd65017e%40sessionmgr 104&hid=126&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=3356479&db=aph](http://eds.b.ebscohost.com/eds/detail/detail?vid=2&sid=56027665-953f-4d39-8c4a-bbdcd65017e%40sessionmgr%20104&hid=126&bdata=JnNpdGU9ZWRzLWxpdmUmc2NvcGU9c2l0ZQ%3d%3d#AN=3356479&db=aph) (accessed 22 September, 2016).

Zweibelson, Ben. "Three Design Concepts Introduced for Strategic and Operational Applications." *Prism* 4, no. 2 (2013): 87-104.

Vitae

Mr. Charles H. “Chuck” Benson III, was commissioned a Second Lieutenant of Armor through Officer Candidate School, Fort Benning, Georgia in 1986. He served in troop command and staff positions as an armor officer and systems automation management officer (Functional Area 53) in CONUS, Germany, Honduras, and Korea. He was re-designated a strategic intelligence officer (Functional Area 34) in 1999, and assigned to the United States Southern Command in Miami, FL, where he served as an all-source intelligence analyst and branch chief, J2 Executive Officer, intelligence operations officer, and the Senior U.S. Military Observer and Chief of Military Intelligence (U2) for the United Nations Stabilization Mission in Haiti. He retired from active duty as a Lieutenant Colonel in 2007 and employed by the Department of the Army, and later by the Defense Intelligence Agency at the United States Southern Command where his assignments include Deputy J2 Joint Task Force Guantanamo Bay, JIOC-SOUTH Chief of Staff, Collection Management Officer, Knowledge Management Officer, Operations Officer, and Intelligence Plans Officer. Mr. Benson is a graduate of the U.S. Army Armor and Field Artillery Officer Advanced Courses, The U.S. Army Computer Science School, The Combined Arms and Services Staff School, U.S. Army Command and General Staff Officer Course, the Post Graduate Intelligence Program, and the Joint and Combined Warfighting School. He holds degrees from the University of Alaska, Anchorage (BA, Anthropology), Case Western Reserve University (MA, Anthropology), and the Joint Military Intelligence College (MS, Strategic Intelligence).