

Complexity Leadership Theory: A United States Marine Corps Historical Overlay

A Monograph by

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Abstract

Complexity Leadership Theory: A United States Marine Corps Historical Overlay by Major John Gallagher, US Marine Corps, 50 pages.

Following more than a decade of counterinsurgency operations (COIN), the US military is transitioning to new force structure, operating concepts, organization, resourcing, and threat forecasting. During such transitions, much discussion centers around each service's ability to innovate across the gap between organizational resources and an "uncertain" and "complex" future operating environment. As the USMC resets the force and forges a path forward, the service must comprehensively leverage its best ideas from across the organization to effectively visualize, adapt, and act in the future operational environment. However, increasing globalization and interconnectedness make leading innovation in today's organizations progressively more complex and dynamic. Complexity Leadership Theory (CLT) attempts to reconcile traditional bureaucratic and hierarchal leadership with approaches that incorporate the complex, adaptive, and systems characteristics found in information age organizations.

This monograph overlays CLT on two periods of significant warfare innovation in the Marine Corps to evaluate the role of senior leadership in each event. The emergence of amphibious warfare in the 1920s and 1930s and helicopter warfare in the 1940s and 1950s not only transformed the Marine Corps, but changed broader warfare. In each case, the US and allied militaries relied on the innovation for the operating environment that immediately followed. The case studies indicate a legacy of Marine Corps' senior leadership fostering a culture with the capacity to circumvent bureaucracy, and effectively solicit and implement innovation from all levels of the organization. The nature of such senior leadership exhibits many of the characteristics of CLT that remain applicable for current, military leadership. If, as the research indicates, the service has a demonstrated institutional culture and capacity for senior leadership to recognize and exploit significant emergent trends and ideas from throughout its organization, the Marine Corps would be well-served to embrace such characteristics in facing the current transition to the future operating environment.

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Acronyms

AAF	Army Air Force
ACMC	Assistant Commandant of the Marine Corps
CLT	Complexity Leadership Theory
CMC	Commandant of the Marine Corps
DOT	Division of Operations and Training, Headquarters Marine Corps
FMF	Fleet Marine Force
FLEX	Fleet Landing Exercises
HMX-1	Marine Helicopter Squadron One
HQMC	Headquarters Marine Corps
MAGTF	Marine Air Ground Task Force
MCS	Marine Corps Schools
MCA	Marine Corps Association

Key Definitions

Adaptive Space – The area between the administrative and entrepreneurial systems within an organization that allows enabling leadership to leverage innovation and adaptation.

Adaptive Response – A new approach, alternative way of thinking, or adaptive solution that meets the needs of a complex challenge; the result of richly connected interactions within a complex environment.

Agent – Individual or group capable of connecting or interacting with other agents within a complex system or subsystem.

Aggregation – A process that occurs when agents bond into aggregates, then meta-aggregates, and potentially organizational transition. Linking-up, catalyzing, and information flow all support the aggregation process.

Catalyze – An activity between agents that engages and facilitates tension dynamics to enable adaptive responses within the adaptive space; also called *conflicting* in recent CLT nomenclature.

Enabling Leadership – A form of leadership that links-up, catalyzes, and then sponsors a concept, idea, or innovation beyond the initial, bureaucratic resistance of the administrative system.

Linking-up – An activity which connects critical resources, innovators, sponsors, and brokers across networks to amplify emergence of an idea or concept within the adaptive space.

Sponsoring – An activity which resources, protects, and champions -pushing or pulling - a concept beyond the initial resistance of the administrative system.

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Section 1: Introduction

The relationship between officers and men should in no sense be that of superior and inferior, nor that of master and servant, but rather that of teacher and scholar.

John A. Lejeune

In a quotation, familiar and meaningful to most US Marines, General John A. Lejeune, the thirteenth Commandant, renders the commonly held essence of an organizational approach to leadership. Taught to Marines during initial training, and frequently repeated during professional, continuing education, the quote's underlying concept is ubiquitous in the language of the Marine Corps, from its doctrine to the execution of small unit leadership.¹ While Lejeune's use of analogy—nearly a century old—might appear to date its applicability for the current context, his ideas about the nature of organizational leadership, particularly regarding the roles and relationship between the institution's senior and subordinate members, continue to provide insight and utility. The essential characteristics of the relationship between Marines and leaders throughout the organization are transformational, reciprocal, richly-interconnected, and responsibility-laden. Marine Corps leadership should be engaging and personal, rather than top-down and bureaucratic.²

The discussion of Lejeune's approach to leadership provides a basis for comparing current and historical organizational leadership. In historical context, General Lejeune served as the Commandant of the Marine Corps (or senior, executive leader in general terms) for nearly nine years during the 1920s.³ The 1920s represented a period of significant change, uncertainty,

¹ US Marine Corps, Marine Corps Warfighting Publication 6-11, "Leading Marines," (Washington, DC: 2014.) The current leadership doctrine, MCWP 6-11, provides the most obvious source of Marine Corps leadership philosophy; the essential concepts of organizational leadership link to MCWP 6-11 and are in foundational doctrine, operating concepts, and institutional communications.

² Ibid.

³ John A. Lejeune, *The Reminiscences of a Marine* (Philadelphia, PA: Dorrance & Company, 1930), 460-485. Hereafter, Lejeune, *The Reminiscences of a Marine*.

and growth following the Great War. Similarly, today the American military finds itself concluding the longest war in its history; a hybrid war, for which neither the results nor the implications for the future are immediately clear. Like the interwar period, the 21st century ushers tremendous change, uncertainty, and innovation. During the 20th century, the industrial age produced a specific model and requirements for organizational leadership. In contrast, the first half of the 21st century is rooted completely within the information age.⁴ The speed of communication, technology, social change, globalization, and unprecedented interconnectedness has challenged the strict, hierarchal structure and bureaucratic effectiveness of organizations based upon industrial age models.⁵ Now, more so than in the example of the Marine Corps a century ago, organizations must maintain a high range of flexibility, interconnectivity, and, particularly, innovation to anticipate and navigate complex and dynamic conditions.⁶

Complexity science has evolved as a response to the ever-increasing range of new social, political, military, and economic challenges and phenomena presented in the information age.⁷ Industrial age management attempted to form, isolate, and order individuals, organizations, and events into linear and causal relationships and explanations. Industrial age organizations were bureaucratic and hierarchical, using top-down leadership and passive followership, to facilitate

⁴ Mary Uhl-Bien, Russ Marion, and Bill McKelvey, *Complexity Leadership Theory: Shifting Leadership from the Industrial Age to the Knowledge Era* (Lincoln, NE: Leadership Institute Faculty Publications, 2007), Paper 18, 299-315. Hereafter referenced Uhl-Bien, Marion, and McKelvey, *CLT: Shifting Leadership*.

⁵ Mary Uhl-Bien and Benyamin Lichtenstein, *Complexity Leadership Theory: An Interactive Perspective on Leading in Complex Adaptive Systems* (Mahwah, NJ: Lawrence Erlbaum, 2006), 1-3. Hereafter referenced as Uhl-Bien and Lichtenstein; also, Mary Uhl-Bien, *Complexity Leadership Theory*, Presentation (electronic) provided to School of Advanced Military Studies in a visit to Fort Leavenworth during the 2015 – 2016 Academic Year, 3-6. Hereafter referenced as Uhl-Bien, *Complexity Leadership Theory*.

⁶ Ibid, 2-4, 8.

⁷ Robert Axelrod and Michael D. Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (New York: Basic Books, 2000), 1-31.

control and efficiency.⁸ By contrast, leading complexity theorists recognize that agents (i.e. individuals or organizations) participate in systems and systems within systems of interaction. Both the systems and the various agents contained within each reacts to one another and develop evolving strategies to adapt and succeed.⁹ Although often difficult and less prescriptive, a complexity theoretical approach more accurately describes and anticipates organizational and environmental phenomena in the information age. Complexity leadership theory (CLT), a growing subject of study within the fields of leadership, and organization and complexity begins to translate the implications of the information age into a refined understanding of organizational leadership in the context of complexity.¹⁰

The military shares many of the characteristics of an industrial age organization—rigid hierarchical chain of command, prioritized focus on control and efficiency, and strict adherence to top-down direction. At several critical periods of transition in its existence, the Marine Corps has identified, developed, and implemented transformative or “emergent” innovation that has significantly improved the organization or warfighting in general. Examples include identification, development, implementation, and advocacy of the Small Wars Manual, close air support, amphibious warfare, helicopter/air mobility warfare, Marine Air Ground Task Force (MAGTF) warfare, maritime prepositioning, and maneuver warfare. Such innovations provided growth or flexibility that either pushed the Marine Corps past an existential organization problem or introduced key revolutions to warfare in general.¹¹ A cursory review of each of the examples

⁸ Mary Uhl-Bien, *Complexity Leadership Theory*. Electronic presentation; provided electronically to the US Army School of Advanced Military Studies in January, 2016, 8. Referenced hereafter as Uhl-Bien, *Complexity Leadership Theory*.

⁹ *Ibid.*, 1-30.

¹⁰ Uhl-Bien and Lichtenstein, *Complexity Leadership Theory*, 1-4.

¹¹ Terry Pierce, *Warfighting and Disruptive Technologies: Disguising Innovation* (New York, NY: Cass, 2005); Robert G. McCarthy, “A Rebuttal to the 2010 Marine Corps Operating Concept” (Master’s monograph, School of Advanced Military Studies, US Army Command and General Staff College, 2013).

above indicate that senior leadership may have played central roles in moving, or *enabling*,¹² such emergent ideas from lower organizational levels into execution at the service level.

Following more than a decade of counterinsurgency operations (COIN), the US military is transitioning to new force structure, operating concepts, organization, resourcing, and threat forecasting. During such transitions, much discussion centers around the ability of each service to innovate across the gap between organizational resources and an “uncertain” and “complex” future operating environment. As the USMC resets the force and forges its path forward, the service likely must comprehensively leverage its best ideas from across the organization to effectively visualize, describe, and act in the future operational environment. In an increasingly interconnected and globalized environment that organizations exist within today, significant, transformative innovation has become more complex and dynamic. Scholars across most disciplines note the transition from the industrial age to an information age as one of the foundational components of analyzing organizational leadership and change. The CLT attempts to reconcile traditional, bureaucratic, and hierarchal leadership models from the industrial age with a model that incorporates the complex, adaptive, and systems characteristics found in information age organizations.¹³

Considerable study of the subjects of leadership, complexity, organizational, institutional, and military innovation as well as the Marine Corps leadership and organizational innovation is available. However, no research appears to have attempted to extract and analyze senior Marine Corps leadership activities resulting in significant innovation through the lens of complexity theory. Accordingly, this paper attempts to answer several questions. Primarily, can current CLT

¹² This paper will use italics to highlight ‘terms of art’ used specifically to convey the intent and connection of the term to complexity leadership theory and to its application in the criteria and the case studies.

¹³ See Figure 1.

effectively describe historical examples of significant, disruptive organizational innovation within the US Marine Corps? In particular, does the complexity leadership model, introduced by complexity leadership scholar Mary Uhl-Bien, provide insight into the role and adaptive strategies of senior leadership in examples of organizational innovation in the USMC? Does the Marine Corps exhibit institutional characteristics that facilitate leadership in the complex information age? Finally, is the model applicable for enabling organizational innovation in the Marine Corps today?

While the narrow scale of this paper limits comprehensive or conclusive evidence, the research serves to identify and reinforce those historical, organizational Marine Corps cultural and leadership traits applicable within a complex, information environment, as well as open the subject for further study. The paper's methodology is comparative, introducing Dr. Mary Uhl-Bien's complexity leadership model as the lens to evaluate two historical case studies involving Marine Corps Commandants and relevant senior leadership demonstrating *enabling* leadership, within the *adaptive space* described by the model, to identify and implement significant, organizational innovation and emergence.¹⁴

Following the Introduction Section, this paper provides an introduction and overview of the theoretical framework in the CLT Section. After the CLT Section the paper introduces and applies the CLT framework first to the amphibious warfare case study in Section Three, and then to the helicopter warfare case study in Section Four. In the final section, the paper synthesizes the conclusions from two case studies and attempts to answer the paper's basic research questions.

¹⁴ Mary Uhl-Bien. *Adaptive Space: The Key to Leadership in a Complex World*. Electronic presentation, presentation provided by Uhl-Bien to US Army School of Advanced Military Studies on 27 January, 2017. Referenced hereafter as Uhl-Bien, *Adaptive Space*; also Uhl-Bien, *Complexity Leadership Theory*, 2-6. See Figure 1. Note: The figures in this paper include original elements from Dr. Uhl-Bien's presentations to the School of Advanced Military Studies in January 2016 and January 2017 and various works on CLT referenced throughout this paper.

Each of the case studies uses a similar structure. Each case study section opens with an introduction that includes an overview of the organizational innovation, the time frame covered, and the key senior, *enabling* and *entrepreneurial* leaders. Next, the case study applies each of three complexity leadership criteria to the leadership and organization. Finally, the case study links or separates the findings of the criteria application in a summary of the case study. The amphibious warfare case study occurs first historically and provides a foundation of CLT-related Marine Corps organizational terminology and culture that carries into the second case study. Accordingly, while of no less value, the second case study requires less contextual familiarization is more succinct than the first.

This paper uses three criteria for evaluating the complexity leadership model within the context of the Marine Corps historical, innovation cases studies. The first criterion serves as an examination of the *leadership event*, or what Uhl-Bien might describe as the “episode and interactions of interests.” This criterion isolates the emergent, disruptive innovation, in a specific time and space, to determine whether the Marine Corps’ organization and key agents can be described by the *administrative* and *entrepreneurial systems* in the complexity leadership model. While the identification of individual key leaders results from the examination required by this criterion, in remaining consistent with complexity leadership’s theoretical understanding of leadership, the paper links leaders by their interactions within the model. For example, the first case study pays particular attention to John Lejeune’s and John Russell’s leadership interactions within each of the organizational systems throughout the emergence process of the development of amphibious warfare. This criterion highlights the external pressures on the organization, defines the *administrative* and *entrepreneurial systems*, and introduces the organization’s *adaptive space*, *tension dynamics*, and bureaucratic barrier, or “wall of resistance.”

The second and most important criterion evaluates senior leadership use of *enabling* leadership. This criterion identifies and evaluates evidence of senior leadership *linking-up*, *catalyzing*, and *sponsoring* activities within an *adaptive space* during the leadership event as

described in the complexity leadership model.¹⁵ The paper identifies key elements of the *aggregation process* of emergence, which occurs when agents bond into aggregates, then meta-aggregates, and potentially organizational transition.¹⁶ *Linking-up, catalyzing*, and information flow all support the *aggregation process*. Overall, this criterion evaluates how senior leadership used the *adaptive space* to facilitate emergence.

The third criterion evaluates the overall *adaptive response* of the organization resulting from *enabling* leadership. Complexity leadership theory describes adaptive responses as generated “when networked agents are able to resonate around a new approach, alternative way of thinking, or adaptive solution that meets the needs of a complex challenge.”¹⁷ Uhl-Bien further describes adaptive responses as directly resulting from the “richly connected interactions that allow diverse people, ideas, and pressures to collide and combine in ways that generate emergence.”¹⁸ This criterion attempts to validate the historical value of the emergent activity within the organization.

This paper uses a qualitative, interpretative methodological approach. As the fields of leadership and decision-making, organizational theory, history, and psychology each provide unique challenges for empirical-analytical research, the intersection of these fields in evaluating the presence and applicability of the complexity leadership model to the case studies requires a broad, circumspect approach to recognize meaningful patterns and outcomes. The research

¹⁵ During Dr. Uhl-Bien’s presentation to the School of Advanced Military Studies in January, 2017, she changed the term ‘catalyzing’ to ‘conflicting’ in the model. Since the terminology change does represent a significant change in meaning and most of the earlier research uses the former term, this paper continues using catalyzing.

¹⁶ Mary Uhl-Bien, *Adaptive Space*, 11-13.

¹⁷ *Ibid.*, 21.

¹⁸ *Ibid.*

methods primarily consist of a review of primary and secondary sources within each of the selected case studies to apply the designated criteria from the complexity leadership model.

The potential limitations of the research are several. Accurately interpreting the senior leader's precise motives and intentions in decision-making long after the fact, particularly when not available for interview, is necessarily inexact. The model's relatively recent promulgation limits some of the breadth and validity of research available to test the complexity leadership model. Finally, overlaying the complexity leadership model onto organizations, which existed during the industrial age presents potential incongruence with the organizational theory, structure, and nuance of information age organizations.

The paper addresses research limitations, partially, through the selection of prominent and already thoroughly researched case studies. The depth, richness, and variety of academic research associated with both the individual senior leaders and particularly the organizational innovations of amphibious warfare and helicopter warfare is vast. Comparing this paper's findings against a range of disciplinary perspectives and research efforts serves to mitigate potential problems of misinterpretation or noncausality.

The primary sources used in this paper include a variety of complexity leadership articles and briefings from Dr. Uhl-Bien and associated scholars, and the biographies, personal papers, and service recordings of each of the Marine Corps Commandants and leaders used in the case studies. The significant secondary sources include a variety of books and academic papers to support the development of the case studies, and Terry Pierce's *Warfighting and Disruptive Technologies*, which the paper uses to frame transformative military innovation.

As Mary Uhl-Bien's complexity leadership work fits within the larger field of complexity study, a few essential complexity sources form the foundation upon which the more specific discussion of complexity leadership rests. Key among the complexity sources used to frame complexity are Robert Jervis' book, *System Effects: Complexity in Political and Social Life*, and

Axelrod and Michael Cohen's book, *Harnessing Complexity: Organizational Implications of a Scientific Frontier*. Jervis provides a widely-accepted foundation for understanding systems perspective and complexity in social context.¹⁹ While not explicitly comprehensive or authoritative source on complexity theory, as the field is broad and richly debated, the combination of the two books provide an accessible review of the essential elements of complexity and a useful framework for investigating complexity within organizations.²⁰ The sum of common definitions of agents, strategies, and complex adaptive systems are necessary for understanding the larger discussion.²¹

Mary Uhl-Bien is joined in the field by several of the peers (e.g. Benyamin Lichtenstein and Russ Marion) with which she has co-authored several of the available studies in complexity leadership theory. Her work is both pioneering and authoritative on the subject. Also, the complexity leadership model used for this study is currently the only complete, practical, and broadly-recognized model produced from within the field. Also, due to the narrow length of this paper, focusing upon and overlaying this single model provides appropriate perspective to aid follow-on work. Complexity leadership theory is still developing, with research, observation, and peer review in academia, business, and government. Within the short duration of the research for this paper, Dr. Uhl-Bien and others modified some of the complexity leadership terminologies and added new terms and concepts that improved or clarified the Complexity Leadership model. Consequently, this paper captures and overlays the primary concepts contained within available

¹⁹ Robert Jervis, *System Effects: Complexity in Political and Social Life* (Princeton, NJ: Princeton University Press, 1998).

²⁰ Robert Axelrod and Michael Cohen, *Harnessing Complexity: Organizational Implications of a Scientific Frontier* (New York, NY: Basic Books, 2000).

²¹ Some differences in definitions of complexity terms exist – for example, Uhl-Bien's definition of agents is less restricted than some current complexity definitions to individuals or groups acting with intent or authority, instead including any element of the environment or system that forms interrelationships with other agents. This paper uses the broader definition of terms.

Complexity Leadership research while acknowledging that future refinement within the field of study may produce slight variations from this paper.

Finally, Dr. Yaneer Bar-Yam provides another useful source for this paper's practical overlaying of complexity leadership to the Marine Corps' organizational leadership and systems. Bar-Yam agrees with the importance of the interactions of agents in systems and the negative correlation with increased administrative control.²² However, his work also reinforces the link between individual actions (as demonstrated by the commandants) and complex systems. Rather than being more administratively responsible for the systems' success, senior leaders' greater role is in improving how the systems work together.²³

With treatment of the essential elements of complexity and leadership, the next area of the paper definition is a selection of the significant, organizational innovations within the Marine Corps that provide sufficient case study. Several leading scholars including Dima Adamsky, Allan Millett and Williamson Murray have contributed to understanding innovation in the military.²⁴ The doctrine, organization, tactics, and technology model for military revolution, provides a useful method for analyzing the elements defining a significant military innovation in an organization. However, to maximize the utility of overlaying the complexity leadership model this research effort requires a categorization model of military innovation that accounts for

²² Yaneer Bar-Yam, *Making Things Work* (Necsi: Knowledge Press, 2004), 14. Note: "What do people do when they don't understand 'the system?'" They try to assign responsibility to someone to fix the problem, to coordinate and control what is happening. It is time we recognized that 'the system' is how we work together."

²³ *Ibid.*, 10. "One of the most profound results of complex systems research is that when systems are highly complex, individuals matter."

²⁴ Dima Adamsky, *The Culture of Military Innovation: The Impact of Cultural Factors on the Revolution in Military Affairs in Russia, the US, and Israel*. (Stanford: Stanford University Press, 2010), 7, 9-10, 16-23, 134-142. Adamsky's investigation of the cultural elements of military innovation are useful when considering organizational leadership; also, Williamson Murray and Allan Millett, *Military Innovation in the Interwar Period*. (Cambridge: Cambridge University Press, 1998), 1-5. Williamson and Murray contribute to understanding of innovation regarding doctrine, organization, and technology.

broader historical significance, complexity dynamics, leadership, and organization theory. Terry Pierce's book, *Warfighting and Disruptive Technologies: Disguising Innovation*, provides all of the elements mentioned above, and serves primarily as an aid to narrow and define significant, emergent—or 'disruptive' as Pierce describes them—innovations within the Marine Corps.²⁵ Pierce's concept of disruptive innovation aligns closely with both CLT's description of emergent innovation and its treatment of the interconnected relationship within an organization.

Considerable study of the subjects of leadership, complexity, organizational, institutional, and military innovation as well as the Marine Corps leadership and organizational innovation is available. However, no research appears to have attempted to extract and analyze senior Marine Corps leadership activities resulting in significant innovation using the lens of complexity theory. Accordingly, this paper attempts to answer several questions. Primarily, can current CLT effectively describe historical examples of significant, disruptive organizational innovation within the US Marine Corps? In particular, does the complexity leadership model, introduced by complexity leadership scholar Mary Uhl-Bien, provide insight into the role and adaptive strategies of senior leadership in examples of organizational innovation in the USMC? Does the Marine Corps exhibit institutional characteristics that facilitate leadership in the complex information age? Finally, is the model applicable for *enabling* organizational innovation in the Marine Corps today?

Section 2: Complexity Leadership Theory

While the narrow scope of this paper limits comprehensive or conclusive evidence, the research serves to identify those historical, organizational Marine Corps cultural and leadership traits applicable within a complex, information environment, as well as open the subject for

²⁵ Pierce, *Warfighting and Disruptive Technologies*. Note: this paper uses the terms 'disruptive,' transformative, and emergent interchangeably.

further study. The paper’s methodology is comparative, introducing Uhl-Bien’s complexity leadership model as the lens to evaluate two historical case studies involving Marine Corps Commandants and relevant senior leadership demonstrating *enabling* leadership, within the *adaptive space* described by the model, to identify and implement significant, organizational innovation and emergence, as shown in Figure 1.

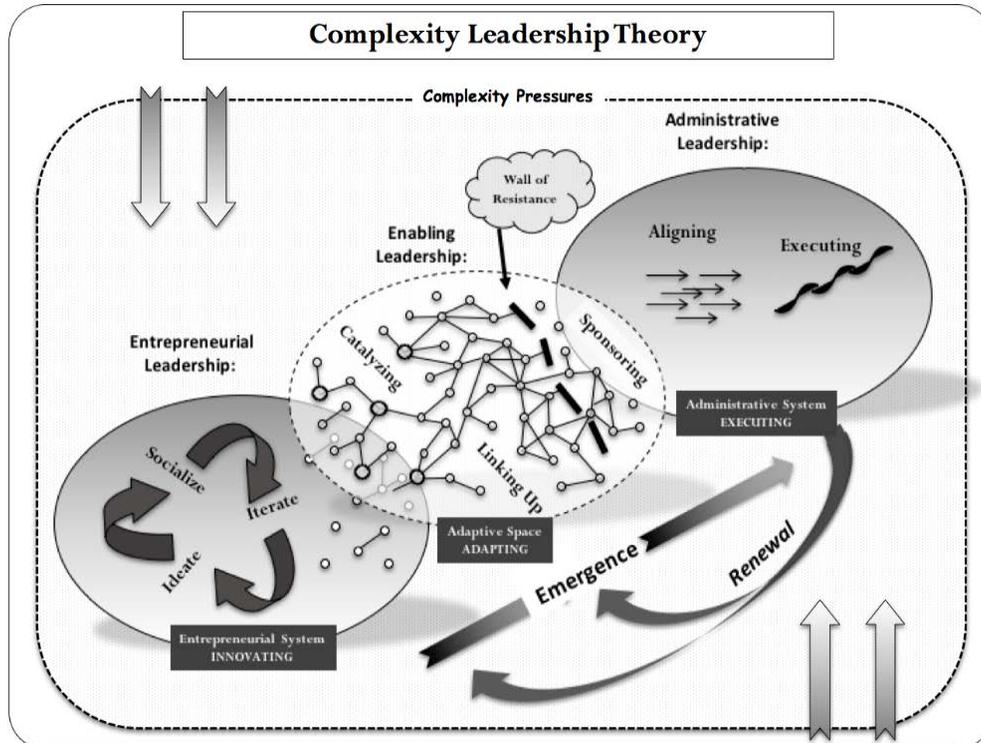


Figure 1. Complexity Leadership Model. Adapted with permission from Uhl-Bien, *Adaptive Space: The Key to Leadership in a Complex World*. Electronic presentation, presentation provided by Uhl-Bien to US Army School of Advanced Military Studies on 27 January, 2017, 9, 36, and, Uhl-Bien, *Complexity Leadership Theory*. Electronic presentation provided electronically to the US Army School of Advanced Military Studies in January, 2016, 24.

Historical examples seem to indicate a legacy of Marine Corps senior leadership fostering a culture with the capacity to circumvent bureaucracy, and effectively solicit and implement innovation from all levels of the organization. The nature of such senior leadership exhibits many of the characteristics of the complexity leadership model that remain applicable for current Marine Corps senior leadership. Particularly for the current information age, the ability of senior leadership to place itself in the organization’s *adaptive space* —below the traditional bureaucratic

barrier between the innovation-producing, *entrepreneurial* and the *executing, administrative* levels—provides tremendous innovative potential for any organization. If, as the research seems to indicate, the Marine Corps has frequently demonstrated an institutional culture and capacity for senior leadership to recognize and exploit emergent agents and ideas from throughout its organization, it would be well-served to embrace such qualities to succeed in the complex, uncertain future operating environment.

The overarching attraction of complexity leadership for a military organization's leaders is the potential insight that its study could provide to navigate the increasingly complex and rapidly changing environment during a time of considerable strategic and operational ambiguity. To understand and apply the complexity leadership model to Marine Corps organizational case studies, one must understand the model and establish a common definition of the terms used in the paper. Establishing common terms is particularly important as many of the terms are newly-coined, possess multiple, competing definitions, or may be unfamiliar outside of the field of complexity science.

As represented in Figure 1, the complexity leadership model describes organizations composed of two systems, the *administrative* and *entrepreneurial*, containing the sum of all agents, including personnel, sub-organizational units, and structure.²⁶ The agents, individually and in groups (sub-systems), react to each other, internal tensions, and external pressures. Simultaneously, these agents and systems are acting or creating strategies to influence each other. This interaction between agents, subsystems, coupled with internal tension and complexity pressures form the basis for organizational complexity.

As a large organization attempts to achieve its purpose, it must identify, link, and execute the best emerging ideas and strategies from the systems and agents across the organization. This

²⁶ Uhl-Bien, *Complexity Leadership Theory*, 14, 23-24.

approach provides the organization the broadest engagement surface with external pressures and operational objectives. Such an approach provides a correspondingly broad and more flexible generation of responses to external pressures and operational objectives. The approach represents a central principle of complexity leadership and rests upon two concepts. First, the Law of Requisite Complexity, which requires an organization to leverage complexity to overcome complexity. Second, complexity leadership research shows that when traditional leadership responds to challenges in complex environments with control and tightened administrative function, the organization’s adaptive, tension dynamics are stifled (see Figures 2, 3, and 4).²⁷ Or as Uhl-Bien alternately describes, “complexity leadership theory accepts the juxtaposition of order and apparent chaotic change as an essential characteristic of social environments.”²⁸ By contrast, industrial age leadership was designed around controlling social interactions toward the profitability and efficiency of manufacturing-based organizations.²⁹

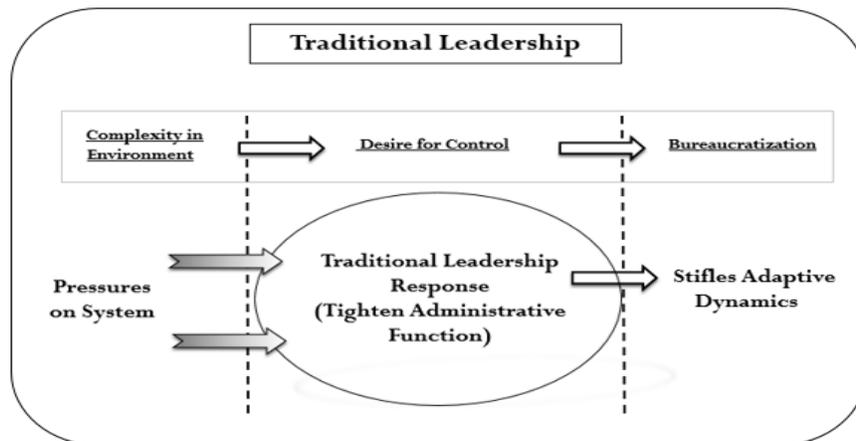


Figure 2. Traditional Leadership. Adapted with permission from Uhl-Bien, *Adaptive Space: The Key to Leadership in a Complex World*. Electronic presentation, presentation provided by Uhl-Bien to US Army School of Advanced Military Studies on 27 January, 2017, 9, 36, and, Uhl-Bien, *Complexity Leadership Theory*. Electronic presentation; provided electronically to the US Army School of Advanced Military Studies in January, 2016, 24.

²⁷ Uhl-Bien, Marion, and McKelvey, *CLT: Shifting Leadership*, 301-315; also, Uhl-Bien, *Complexity Leadership Theory*, 11-19, and Uhl-Bien, *Adaptive Space*, 15-21.

²⁸ Uhl-Bien and Lichtenstein, *Complexity Leadership Theory*, 9-11.

²⁹ Uhl-Bien, Marion, and McKelvey, *Complexity Leadership Theory*, p. 301-315.

Figures 2 and 3 display the relationship between administrative control and an organization's adaptive capability.

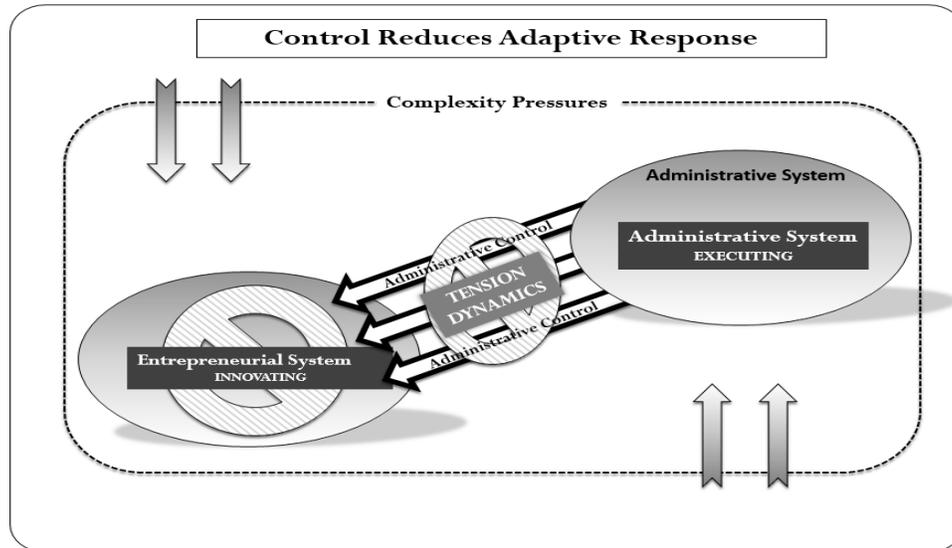


Figure 3. Administrative Control/Adaptive Response. Adapted with permission from Uhl-Bien, Complexity Leadership Theory. Electronic presentation provided to the School of Advanced Military Studies in January, 2016, 16-17.

Figure 4 displays the relationship between tension dynamics and an organization's adaptive and emergence capability.

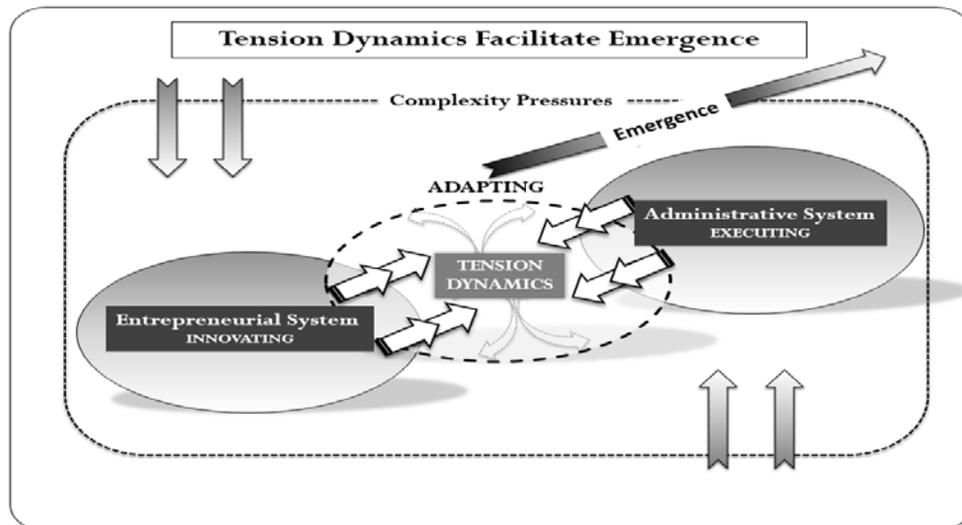


Figure 4. Tension Dynamics and Emergence. Adapted with permission from Uhl-Bien, Complexity Leadership Theory. Electronic presentation provided to the School of Advanced Military Studies in January, 2016, 19.

Arguably, twentieth-century military organizations were never well-suited for a leadership approach based upon industrial or manufacturing efficiency. The Marine Corps is a people-centric organization. Its organizational capability and capacity derive from systems of people. For the Marine Corps to effectively overcome external pressures and operational challenges—for the organization to adapt, innovate, and respond to future enemies and operational environments—it must leverage its full organizational capacity. Accordingly, senior leadership must not rely on overly bureaucratic control to overcome pressures and challenges, but employ *enabling* leadership to put themselves into the *adaptive space* between the *administrative* and *entrepreneurial systems*. Accessing the *adaptive space* between the organization's two systems, leaders move beyond the bureaucratic barrier, which is inherent and necessary for *scaling, aligning, and executing* the activities of the organization toward its basic function.³⁰

Undoubtedly, such administrative functions are essential, but leaders can manage such activities outside a rigid, hierarchal or sedentary positional power. In the *adaptive space*, a senior leader or leaders can more fully embrace and connect the organization's innovative, creative, and adaptive potential—unfettered or unfiltered. Within the model, leadership becomes part of the interaction between agents that produces emergence. Senior leaders support such emergence through *enabling* leadership. In the *adaptive space*, a leader or leaders better understand how *entrepreneurial* agents (e.g. small and large units and unit leaders representing most of the organization and the broadest surface of exposure to the complex environment) are *socializing, iterating, and ideating* responses to pressures and operational challenges.³¹ *Enabling* leadership *links-up* (links critical resources, innovators, sponsors, and brokers across networks to amplify emergence) and *catalyzes* (engages and facilitates tension dynamics to enable adaptive responses)

³⁰ Uhl-Bien, Marion, and McKelvey, *Complexity Leadership Theory*, 305-315; Uhl-Bien, *Complexity Leadership Theory*, 7, 10, 12, 29-30, and Uhl-Bien, *Adaptive Space*, 8-9, 18-20, 36.

³¹ Uhl-Bien, *Complexity Leadership Theory*, 24-31, and Uhl-Bien, *Adaptive Space*, 9, 26.

the emergent ideas and strategies in the *adaptive space*. *Enabling* leadership then *sponsors* (resources, protects, and champions -pushing or pulling) the concept beyond the initial resistance of the administrative system.³²

Finally, a common understanding of how CLT describes leadership is the last remaining principle for applying the model. Unlike traditional leadership study, CLT is less concerned with defining and detailing the traits and actions of the individual leader. In complexity science, the ability to conclusively isolate or replicate the causal actions and outcomes of agents within networks of complex adaptive systems is limited and prone to error. Consequently, the focus of a complexity-based theory shifts its understanding of leadership toward the leadership events and interactions between the agents within an organization.³³ Instead of attempting to determine which individual actions drive collective change, the theory looks at events within a specific period that “endogenously emerged” as leadership outcomes.³⁴ Such an approach allows research to understand and link the strategies and interactions of one or several leaders within an organization as a leadership event. In other words, “leadership is the emergent result of interacting individuals such that behavior and resource elements of the organization come together in useful ways – a frame that can be formalized in terms of dynamic organizational capabilities and routines.”³⁵

Section 3: Amphibious Warfare: Lejeune / Russell Leadership

The US Marine Corps’ development of amphibious warfare between 1920 and 1941 provides an excellent example of disruptive, organizational innovation that changed both the

³² Uhl-Bien, *Adaptive Space*, 9, 26.

³³ Uhl-Bien and Lichtenstein, *Complexity Leadership Theory*, 9-12.

³⁴ *Ibid*, 9.

³⁵ *Ibid.*, 10.

Marine Corps and warfare in general (as displayed in the doctrine's joint implementation in World War II). Some, including J.F.C. Fuller, consider the Marine Corps' development of amphibious warfare to be one of the most important and decisive innovations of World War II.³⁶ Regardless of its broader application to warfare, the amphibious warfare innovation undeniably and completely transformed the Marine Corps. Before the amphibious warfare innovation, the Marine Corps' organizational identity and purpose centered around a collection of missions, including years of small wars in Central America, the Caribbean, and the Philippines short but successful participation in conventional warfare in World War I, and as naval infantry aboard ships.³⁷ Although the Marine Corps had conducted amphibious landings continuously since its inception, including America's first amphibious landing, opposed amphibious landings were decidedly less frequent, and following the grand failure of the British at Gallipoli during World War I, were considered an obsolete and untenable method of conducting warfare.³⁸

While the roots of amphibious doctrine innovation lie in the joint consideration of advanced base defense during the first two decades of the twentieth century, Major General John Archer Lejeune's appointment as the thirteenth Commandant of the Marine Corps in 1920 is the logical beginning of the modern amphibious warfare doctrinal innovation.³⁹ Lejeune represented a leader that was familiar with most of the Corps' disparate roles and missions in two decades before his appointment. He had participated in the small wars and served as a commander in the

³⁶Uhl-Bien and Lichtenstein, *Complexity Leadership Theory*, 51.

³⁷ Pierce, *Warfighting and Disruptive Technologies*, 51.

³⁸Ibid., 51, and Allan Millett, *Semper Fi: The History of the United States Marine Corps* (New York, NY: The Free Press, 1991), 321.

³⁹ David C. Emmel, "The Development of Amphibious Doctrine" (Master's monograph, School of Advanced Military Studies, Command and General Staff College, 2010), 25-29.

American Expeditionary Force during World War I.⁴⁰ He had a firm understanding and deep appreciation of conventional land warfare and by derivation the US Army. Lejeune attended the US Army War College and commanded the US Army's Second Infantry Division in World War I.⁴¹ He also possessed significant entrenchment in naval and Marine formation. Lejeune attended the US Naval Academy as a proponent of the advanced base defense concept early in his career, and served extensively at sea on numerous expeditionary assignments and many of the Marine Corps' small wars deployments.⁴²

As an incoming commandant with enormous political credibility and broad military popularity, Major General Lejeune possessed an obvious potential to change the Marine Corps. However, the Marine Corps would not achieve the full implementation and institutional emergence of the amphibious warfare innovation until its execution in combat in 1941. While Lejeune's leadership as commandant from 1920 to 1929 initiated the innovation, Major General John H. Russell, the sixteenth Commandant of the Marine Corps from 1934-1936, *sponsored* its emergence through the final, significant administrative barriers and system pressures.⁴³ Accordingly, the scope for studying the emergence of the amphibious warfare innovation focuses on the leadership interactions of Lejeune and Russell and covers the periods during and between each of their commandancies.

Leadership Event

During most of the 1920s and 1930s, the US Marine Corps was a relatively small and close-knit organization, under considerable external pressures within the broader US military

⁴⁰ Merrill L. Bartlett, *Lejeune: A Marine's Life, 1867-1942* (Columbia, SC: University of South Carolina Press, 1991), 73-81. Hereafter referenced, Bartlett, *Lejeune*.

⁴¹ *Ibid.*, 3-4; and Lejeune, *The Reminiscences of a Marine*, 187-192, 283-299.

⁴² *Ibid.*, 2-10, 37-70, and Lejeune, *The Reminiscences of a Marine*, 187-192, 283-299.

⁴³ Pierce, *Warfighting and Disruptive Technologies*, 51.

force structure.⁴⁴ Although distinct in character and purpose, the Marine Corps was less autonomous from the US Navy or secure in its place in the US military than it would become with the National Security Act in 1947.⁴⁵ Accordingly, defining its organizational systems and interactions presents complex challenges. The Marine Corps' senior leadership existed, often precariously, as both the executive and frequent co-administrative authority in constant tension with the US Navy leadership. The Corps' senior leadership had to both consolidate institutional direction within its ranks and manage the bureaucratic obstacles and proponents within the US Navy senior leadership.⁴⁶

Inter-service rivalry with the US Army produced another important source of external pressure on the Marine Corps. The Marine Corps' continued existence repeatedly hung in the balance throughout the early decades of the twentieth century, with frequent pressures to divest the service from the Navy and transfer the service to the Army Infantry.⁴⁷ On the larger US political stage, the Marine Corps was a much smaller actor than either the Army or Navy. Accordingly, its leverage, mission, voice, and resources were continuously limited compared to the other services. Many of these external pressures influenced the leadership systems and served to intensify the internal tension dynamics within the Marine Corps.

The administrative system, as defined in the complexity leadership model, could generally be described as the commandant and his small staff at Headquarters Marine Corps (HQMC) in Washington DC.⁴⁸ The HQMC, consisting of a minimalized purpose and a few

⁴⁴ A.A. Vandegrift and Robert B. Asprey, *Once a Marine* (New York: Norton and Company, 1964), 93; Pierce, *Warfighting and Disruptive Technologies*, 51.

⁴⁵ Vandegrift and Asprey, *Once a Marine*, 51.

⁴⁶ Lejeune, *The Reminiscences of a Marine*, 473-476.

⁴⁷ Pierce, *Warfighting and Disruptive Technologies*, 53.

⁴⁸ Within CLT, administrative system is not synonymous with the executive structure of an organization and neither are the systems within an organization fixed (administrative and entrepreneurial

officers at the turn of the twentieth century, began to grow in size, capability, and definition during and following the Marine Corps' participation in World War I. Lejeune's experiences at the Army War College and as a commander in the First World War directly contributed to his unparalleled expansion and refinement of the Marine Corps' *administrative*, or executive, *system*.⁴⁹ While the Headquarters staff continued to change through the 1920s and 30s, it primarily consisted of the Commandant, Assistant to the Commandant, the Paymaster, Quartermaster, and Adjutant and Inspector Departments, Recruiting, Personnel, and Educational Sections, and, upon Lejeune's order, the Division of Operations and Training (DOT).

Major General Lejeune also reorganized and centralized all of the Marine Corps' entry and continuing officer education and schools in close physical proximity to the Commandant at Quantico, VA.⁵⁰ The Marine Corps Schools (MCS) became a frequently key adaptive and *enabling* agent within the *administrative system's* influence.⁵¹ For example, the faculty and students (lieutenants through lieutenant colonels) served an essential function in developing and writing the amphibious warfare doctrine, and later Fleet Marine Force (FMF) and helicopter warfare concepts and doctrines, after the initial ideas had emerged.⁵² Such doctrinal production contributed to the *aligning* and *scaling* functions required by the CLT model within an *administrative system*. Commandant Lejeune and later Commandant Russell used the MCS to *link-up* and *catalyze* ideas from both the *administrative* and *entrepreneurial systems*. The MCS

systems frequently change based upon the interactions). However, Headquarters Marine Corps' primary function during the case study period involved the administrative system aligning and executing activities.

⁴⁹ Kenneth Condit, John Johnstone, and Ella Nargele, *A Brief History of Headquarters Marine Corps Staff Organization* (Washington, DC: Historical Division, Headquarters, United States Marine Corps, 1971), 10-15.

⁵⁰ Millett, *Semper Fi*, 323.

⁵¹ Ibid, 323, 326; Pierce, *Warfighting and Disruptive Technologies*, 62.

⁵² Pierce, *Warfighting and Disruptive Technologies*, 55; Millett, *Semper Fi*, 263, 323, 326, 328, 458, 466.

derives part of its enormous capacity to serve as an adaptive agent for *enabling* leadership in the case studies from its overwhelming institutional reach.

The *entrepreneurial system* proves more nebulous to define due to the small size and internal familiarity of the Marine Corps. Most of the organizational leaders, from captain to colonel, knew each other. However, the organization placed a cultural priority on deployed and expeditionary assignments, and relegated the headquarters and limited, satellite garrison assignments to administrative status. Accordingly, one could best define the *entrepreneurial system* as the portion of the Marine Corps' leadership *executing* the Marine Corps' various missions. Fighting in small wars in the Caribbean, Central America, and South East Asian, foreign military training and protecting US interests in China and abroad, and participating in conventional land warfare in France during World War I produced the experience and credibility that drove *entrepreneurial* leadership.⁵³

The biographies, memoirs, and histories of Marine Corps' leadership, including Lejeune, Russell, Major General Smedley Butler, Lieutenant General Thomas Holcomb (Commandant following Russell), Vandegrift, and General Lemuel Shepherd are laden with experiences and lessons learned during deployed activities during the early 1900s.⁵⁴ The scale and depth of the interactions and relationships among Marine Corps officers resulting from shared experiences generated enduring value throughout the broader Marine Corps system of leadership. Such familiarity did not reflect or induce ideological homogeneity or reduce the diversity or competition of ideas and views. Several leaders and groups steadfastly divided the Marine Corps in arguing its missions, roles, structure, and future. Rather, the web of the organization's

⁵³ Discussed extensively in both primary and secondary biographical accounts of Lejeune, Russell, Vandegrift, and Holcomb, among others. For examples see, Bartlett, *Lejeune*, 56-59, Vandegrift and Asprey, *Once a Marine*, 35-89, 93, and Ulbrich, *Preparing for Victory*, 14-17, 28-29.

⁵⁴ The relationships, overlapping deployments, and routine interaction among many of the leaders discussed within the case studies is represented throughout historical accounts and individual biographies.

Marine Corps organization during the first three decades of twentieth century increased the familiarity among the leaders at each level. Such familiarity produced unique organizational characteristics regarding systems, tension, and relationships. Decision-making and new ideas were almost immediately available to scrutiny across the officer corps. Factions often formed quickly and competed aggressively to either change or maintain the organization.⁵⁶ Although such an organizational dynamic frequently produced exceptional speed in adopting change, when an issue was particularly divisive change could just as easily become locked in an extended battle of personalities. In almost all cases, the roles and interactions of individual actors at each level in the organization intertwined, often over the course of their careers.⁵⁷

Tracing some of the roles and interactions of Lejeune and Russell from the turn of the twentieth century through the 1930s provides the outline of *adaptive space* within the Marine Corps leadership systems during the period. By 1920, three primary groups of officers existed in the Marine Corps. The first group advocated for the small wars mission and represented those most experienced in the small wars, and championed by legendary Marine leader, BGen Smedley Butler.⁵⁸ The second group represented the recent veterans of World War I and advocates for a return to a “light infantry corps d’elite.”⁵⁹ The final group sought “a Marine Corps led by officers with intellect and vision to prepare for its assault mission in support of the fleet...a transformation into a modern amphibious force.”⁶⁰ Lejeune appreciated and consistently used such internal tension dynamics to promote organizational change. “Intellectually and

⁵⁶ Recounted in various primary and secondary sources; see Bartlett, *Lejeune*, 122-142; Lejeune, *The Reminiscences of a Marine*; Pierce, *Warfighting and Disruptive Technologies*, 54-55.

⁵⁷ Bartlett, *Lejeune*, 122-142; Lejeune, *The Reminiscences of a Marine*; Pierce, *Warfighting and Disruptive Technologies*, 54-55.

⁵⁸ Bartlett, *Lejeune*, 7.

⁵⁹ *Ibid.*, 8.

⁶⁰ Bartlett, *Lejeune*, 7-8.

professionally, Lejeune sided with the visionaries. Yet he took pains to not appear to belong to any faction, because the ideological dispute had the potential to engulf the officer ranks in disruptive acrimony.”⁶¹ He combined vision with pragmatism and cultural understanding—*enabling* emergence and allowing for *aggregation* within the organization without forcing administrative control.

Lejeune’s vision for transforming the Marine Corps as its senior leader originated much earlier, while a leader in the Corps’ *entrepreneurial system*. Then Colonel Lejeune founded and led the ‘Young Turks’ of the Marine Corps (consisting of two other future commandants, including Major Bill Russell). The Young Turks began a ‘quiet’ intellectual ‘revolt’ against the Marine Corps’ prevailing senior leadership’s antiquated vision of the service’s role as primarily guarding ships and naval stations.⁶² This group established ‘the Marine Corps Association (MCA) and its publication *The Marine Corps Gazette*.’⁶³ Through this platform Lejeune and Russell began *ideating*, *socializing*, and *iterating* the amphibious warfare innovation (*entrepreneurial leadership*). Professional articles, including Russell’s 1916 ‘A Plea for a Mission and Doctrine’ in the first volume initiated the amphibious warfare mission based upon the future of the organization and the changing operational environment, including rapidly expanding, worldwide US Naval presence and the growing threat of Japanese aggression.⁶⁴ The MCA’s membership along with the *Gazette*’s level of professional exchange across the officer corps expanded continuously through the next several decades and served as another key adapting agent between

⁶¹ *Ibid.*, 7.

⁶² Pierce, *Warfighting and Disruptive Technologies*, 54-55. “Krulak writes that Lejeune ‘had been disappointed with the inability of Commandants Heywood (1891-1903) and Elliot (1903-10) to grasp the relationship between the global needs of the Navy and the creation and defense of overseas naval bases.’

⁶³ *Ibid.*, 55.

⁶⁴ Pierce, *Warfighting and Disruptive Technologies*, 54-55; John H. Russell, “A Plea for a Mission and Doctrine,” *Marine Corps Gazette*, Vol. 1, Issue 2, June 1916, 109-122.

the *entrepreneurial* and *administrative systems* for innovation and emergence. Likewise, the concept of the Young Turks became an important and frequently replicated, informal small innovation group in the Marine Corps.

In another example of the continuity of Lejeune's vision and *enabling* leadership, also while a Colonel at HQMC he established "an ad hoc war plans committee" to explore the Marine Corps' employment in future conflicts.⁶⁵ This group included Lejeune and "three promising captains at HQMC" — Ralph Keyser, Pete Ellis, and Thomas Holcomb (Seventeenth CMC).⁶⁶ Here Lejeune created the opportunity to open the information flow between the *administrative* and *entrepreneurial systems* and stimulated *linking-up* and the *aggregation process* across the service. General Holcomb later described the tremendous personal and professional effects of having officers from across the Marine Corps seek he and Ellis to exchange ideas while representing the ad hoc plans committee.⁶⁷

Upon assuming the Commandancy, Major General Lejeune recognized the deeply entrenched and competing ideas concerning the missions of the Marine Corps. Rather than assert traditional, top-down, transactional leadership to force an administratively-produced version of amphibious warfare, he recognized the internal tensions and external complexity pressures and chose an *enabling* leadership.⁶⁸ Within the *administrative system* of his Headquarters Staff, he created the Division of Operations and Training (DOT) as a vehicle for *sponsoring* the emergent doctrine across the bureaucratic barriers presented by any dissenting factions of colonels or

⁶⁵ David J. Ulbrich, *Preparing for Victory: Thomas Holcomb and the Making of the Modern Marine Corps, 1936-1943* (Annapolis: Navy Institute Press, 2011), 15.

⁶⁶ Ulbrich, *Preparing for Victory*, 15.

⁶⁷ Ibid.

⁶⁸ Bartlett, *Lejeune*, 193-199.

general officers within the organization.⁶⁹ While his staff would be capable of accomplishing the administrative functions of the organization with his supervision, in regards to the amphibious warfare innovation he created and placed himself in an *adaptive space* below the purely *administrative system*.

As he had with Russell, Lejeune identified and pulled Major Earl Hancock “Pete” Ellis, despite his rank or detractors, from the *entrepreneurial system* into the DOT.⁷⁰ Although divisive, most of the officer corps recognized Ellis as extraordinarily brilliant and visionary, despite being “a morose individual and unrepentant alcoholic.”⁷¹ Next, Lejeune selected and assigned senior and influential leaders— “all of whom knew and admired Ellis”—to the DOT. As Major Ellis’ revolutionary ideas regarding the Pacific and amphibious warfare represented a threat to the small wars and conventional land war groups, the DOT provided the *adaptive space*, network, and resources to balance tension dynamics and facilitate adaptation. Such leadership action clearly served to *link-up* critical resources, sponsors, and innovators “across networks to amplify emergence.”⁷²

After exhaustive travel, research, and study, Ellis produced the “two definitive works on Pacific naval strategy—*Advance Base Operations in Micronesia* and *Navy Bases: Their Location, Resources, and Security*.”⁷³ Lejeune, along with select *administrative* and *entrepreneurial* leaders, in the DOT for example, then served to *catalyze* and *sponsor* the amphibious operations innovation, as its priority and utility within warfare remained uncertain during the 1920s. In an

⁶⁹ Pierce, *Warfighting and Disruptive Technologies*, 55.

⁷⁰ Bartlett, *Lejeune*, 193-199, and Pierce, *Warfighting and Disruptive Technologies*, 55.

⁷¹ Bartlett, *Lejeune*, 193.

⁷² Uhl-Bien, *Complexity Leadership Theory*, 31.

⁷³ Pierce, *Warfighting and Disruptive Technologies*, 55.

illustration of *catalyzing*, Lejeune's actions also took advantage of several of the tension dynamics present within the organization. By continuing to facilitate the competing ideas for future missions preferred in the senior Navy and Marine Corps leadership with the different perspective and understanding represented in the *entrepreneurial systems*. Rather than attempting to control or direct the organization's emergent direction, he allowed the ideas to develop through the interaction of the various agents.

Lejeune accepted Ellis' plans and began the *sponsoring* characteristic of *enabling* leadership. The commandant began resourcing the innovation through implementing a series of amphibious exercises and enlisting. Lejeune coordinated such exercises with the Navy into fleet maneuvers that served both as a "championing" function within *enabling* leadership and a complementary *administrative* leadership function.⁷⁴ In support of such *enabling* leadership, at the *administrative* level, Lejeune began *scaling*—"moving concepts across the organization to build economies of scale"—and *aligning*—"strategically re-aligning the organization to accommodate and institutionalize the new order generated from emergence"—within the Marine Corps and its Naval interface.⁷⁵ By the end of Major General Lejeune's commandancy in 1929, much of the amphibious warfare innovation had begun to emerge within the organization. However, neither the Marine Corps nor Navy were organizationally *aligned* or capable of *executing* the amphibious operations that would prove essential just over a decade later.

The organizational change under Lejeune legitimized the concept of amphibious operations and laid the foundation for the full-scale amphibious operations required during World War II—particularly advanced base defense, educational institutionalization, and reforming or

⁷⁴ Mark Mandeles, *Military Transformation Past and Present: Historic Lessons for the 21st Century* (Westport: Praeger Security International, 2007), 63-65.

⁷⁵ Uhl-Bien, *Complexity Leadership Theory*, 30.

establishing the necessary bureaucratic conditions.⁷⁶ However, Lejeune whether for vision, personal view, or balance of the institutional conditions and service's requirements during his commandancy, focused the organization on "developing defensive amphibious warfare, fighting small wars in Central America, and monitoring events in China."⁷⁷ Scholar Stephen Rosen suggests that "although the intellectual breakthrough to redefine Marine Corps tasks and missions had been performed," Lejeune neither undertook "the political task of transforming the officer corps" nor reorganizing "the Corps around amphibious warfare."⁷⁸ Rosen also correctly notes, "Lejeune himself gave the whole subject of advanced base forces two paragraphs in his 1930 memoirs, and made no mention of amphibious assaults at all."⁷⁹

During Russell's commandancy, the remainder of the amphibious warfare innovation emerged; specifically, Russell *enabled* the development offensive amphibious/amphibious assault operations, implementation of the Fleet Marine Force (essential for naval-integration and ready amphibious force structure), and the associated officer promotion and education changes to allow for the innovation to survive.⁸⁰ The depth and richness of Russell's interaction with the amphibious warfare innovation continued his efforts with the Young Turks and original 'Plea for a Mission' early in the century through his commandancy.

Shortly after Major General Lejeune's retirement in 1929, then BGen Russell became assistant to Commandant Major General Ben H. Fuller in 1933 and immediately began to

⁷⁶ Pierce, *Warfighting and Disruptive Technologies*, 56 -57.

⁷⁷ Pierce, *Warfighting and Disruptive Technologies*, 56 -57.

⁷⁸ Stephen Rosen, "New Ways of War: Understanding Military Innovation," *International Security* 13, no. 1 (Summer 1988), 163-164.

⁷⁹ Rosen, "New Ways of War," 164; Lejeune, *The Reminiscences of a Marine*, 460-485.

⁸⁰ John H. Russell, *John H. Russell, Jr. Register of His Personal Papers 1827-1947*, compiled by R. T. MacPherson (Washington, DC: United States Marine Corps, 1987), 4. Hereafter cited as Russell, *Personal Papers*.

influence further development of amphibious warfare from his position within HQMC. While Lejeune's successors, Major General Wendell Neville (fourteenth CMC, 1929-1930)⁸¹ and Major General Fuller (fifteenth CMC, 1930-1934) had administered the Marine Corps and the amphibious warfare development along the trajectory, which Lejeune had established, neither *enabled* a significant change in the speed or breadth of its emergence. Brigadier General Russell *enabled* such broad and aggressive emergence conditions continuously as a senior leader in the Marine Corps. Upon becoming the Assistant Commandant of the Marine Corps (ACMC), the first element of offensive amphibious warfare that Russell *enabled* was the promulgation of the Fleet Marine Force.

Despite limited Naval budget and continued internal tension about the proportion and priority of amphibious operations in the overall Marine Corps mission, Russell continued to *aggregate* agents toward the need for amphibious assault in both the *administrative* and *entrepreneurial systems* throughout the late 1920s and early 1930s.⁸² For example, his August 1933 article in the Gazette (by then a robust intellectual and professional exchange), "A New Naval Policy," illustrates his use of *adaptive space* to *catalyze* and *link-up*.⁸³ Subsequent Marine Corps visionary and legendary leader, General Victor "Brute" Krulak wrote, "Russell...may well have exerted greater influence in rationalizing and regularizing the amphibious assault than any other single individual in the Corps."

In late 1933, intensified external pressure opened a window of opportunity to speed the *aggregation process* and generate wide, immediate *sponsoring* activity by senior Naval and Marine Corps leadership. When Army Chief of Staff, General Douglas MacArthur, began openly

⁸¹ Neville died shortly after becoming CMC.

⁸² Victor Krulak, *First to Fight* (Annapolis, MD: Naval Press Institute, 1999), 80.

⁸³ John H. Russell, "A New Naval Policy," *Marine Corps Gazette*, 18, no. 2 (August 1933), 13-16.

pushing for the Army's absorption of the Marine Corps with the President and Congress, Commandant Fuller allowed Russell to use his considerable vision and network of relationships to persuade the Secretary of the Navy, to officially promulgate the FMF.⁸⁴ The following day, Russell issued a complimentary Marine Corps Order and immediately began orienting both the *administrative* and *entrepreneurial systems* on adapting the organization.⁸⁵

Promoted to Major General and becoming the sixteenth CMC (1934-1936) in early 1934, Russell began *linking-up* and *sponsoring* two key adaptive mechanisms—the Marine Corps Schools and FMF operationalization. Russell recognized the tremendous emergent and adaptive capacity of the MCS (including the professional education for Captains, Majors, and Lieutenant Colonels).⁸⁶ From late 1933 through June 1934, the MCS halted all other curriculum and focused its students and faculty on the development of amphibious operations doctrine, resulting in the *Tentative Manual for Landing Operations*.⁸⁷ General Krulak summarizes the extraordinary emergent value of the *Tentative Manual*, “ground-breaking of the purest form” with the US Navy enthusiastically adopting it for doctrine in 1938 and the US Army, “whose interest in amphibious operations had theretofore been minimal, copied the *Manual* lock, stock, and barrel...as Field Manual 31-5.”⁸⁸

With a cohesive doctrine and the MCS *aggregating* the emergence of offensive amphibious warfare, Russel initiated vigorous planning and exercise of the FMF concept through

⁸⁴ United States Department of the Navy, *Department General Order 241* (December 7, 1933), Quantico, VA: US Marine Corps University, History Division.

⁸⁵ United States Marine Corps, *General Order 66*, (December 8, 1933), Quantico, VA: US Marine Corps University, History Division.

⁸⁶ Krulak, *First to Fight*, 80-81.

⁸⁷ Ulbrich, *Preparing for Victory*, 37; Diana Gabriel, “Vision, Education, and Experimentation: Marine Corps Organizational Behavior and Innovation during the Interwar Period” (Master’s thesis, US Army Command and General Staff College, 2013), 60-61.

⁸⁸ Krulak, *First to Fight*, 82.

a series of Naval-integrated Fleet Landing Exercises (FLEX). These exercises allowed for both systems of the Marine Corps to experiment, grow, and adapt Russell's longstanding vision of the amphibious assault. The fleet exercises also *linked-up* and focused the Navy and Marine Corps' narrow resources during the 1930s on the innovation, thereby increasing overall interdependence and interconnectedness.⁸⁹ The combination of the doctrine produced by the MCS and the fleet exercises rapidly changed much of the entrenched resistance and *aggregated* senior naval leadership. The fleet exercises extended the Marine Corps' adaptive network into commercial and experimental industries to stimulate emergent technologies, such as the amphibian vehicles for ship-to-shore movement.⁹⁰

Finally, Commandant Russell pushed through an officer promotion selections system that would sustain the emergent amphibious innovation and an organizational environment of innovation over the long term.⁹¹ Since at least 1916, he envisioned and advocated for an officer corps composed of intellectually engaging and innovative officers and devoid of lazy, bureaucratic, or inflexible leaders.⁹² Such an officer corps could *ideate*, *socialize*, and *iterate* at its broad, lower levels and *enable* and *sponsor* emergent ideas, doctrine, and processes at its senior level.

Summary

As illustrated in the case study, the familiarity and interconnectedness of the Marine Corps simultaneously promoted *entrepreneurial* level innovation and *tension dynamics* with the *administrative system*. Both Lejeune and Russell actively engaged the agents, tensions, and

⁸⁹ Millett, *Semper Fi*, 337-338; Vandegrift, *Once a Marine*, 78-80.

⁹⁰ Millett, *Semper Fi*, 326, 332-340.

⁹¹ Russell, *Personal Papers*, 4.

⁹² *Ibid.*

external pressures within the *administrative* and *entrepreneurial systems* throughout their careers. Each routinely employed extraordinary vision and commitment for the future of the service—and actively sought to *socialize, iterate, link-up, and catalyze* other agents within the Marine Corps. Upon assuming the role as commandant, Lejeune and Russell each understood and exploited the *adaptive space*. A significant part of that demonstrated skill and understanding prevented either from applying top-down administrative control to manage the considerable external pressures or internal competition for the priority, future missions, organization, or doctrine of the Marine Corps. Rather, each used the richly interconnected officer corps to both manage the internal tensions and reveal the best path to a vision for change. Lejeune’s vision for the future was broad but balanced against the Marine Corps’ legacy and enduring equities. His leadership spawned the conditions for system-wide *enabling* leadership for years and produced the first, major component of amphibious warfare—advanced base defense. Russell shared and expanded Lejeune’s vision for the future of amphibious warfare, overseeing the development of a complete amphibious warfare doctrine including offensive assault, the FMF structure to train and ready the amphibious force, and a promotion system, which would *enable* the innovation to flourish. The emergence of the amphibious operations innovation that proved essential for the Allies in both the European and Pacific theaters of World War II originated through the *enabling* leadership Major Generals John Lejeune and John Russell.

Section 4: Helicopter Warfare: Vandegrift/Shepherd Leadership

In the period after World War II, the US Marine Corps transformed itself from a force that conducted ship-to-shore amphibious assault to the first (ever) force capable of air mobility able to conduct a vertical and surface amphibious assault.⁹³

The validation of the amphibious warfare innovation during World War II did not eliminate the pressures on the Marine Corps to continue to innovate warfare and adapt its

⁹³ Pierce, *Warfighting and Disruptive Technologies*, 71.

organization. The massive military drawdown of personnel, equipment, and resources renewed many of the pre-existing pressures as other technological and military innovations created new pressures and tensions. As the success of the Pacific Island-hopping campaign brought US forces to the Japanese mainland, a monumental innovation emerged, changing warfare. On a much greater scale than the failure at Gallipoli, the bombings of Hiroshima and Nagasaki shook the foundations of military thought regarding opposed access and forcible entry.

As the eighteenth Commandant, Lieutenant General Alexander A. Vandegrift (1944-1947) guided the Marine Corps through the conclusion of World War II and subsequent drawdown; extraordinary external pressures threatened the Corps continued existence. Vandegrift employed an *enabling* leadership approach rooted in the example and conditions established by Lejeune and Russell to initiate an adaptive response to the existential pressures. General Lemuel C. Shepherd, Jr., the twentieth Commandant (1952-1955), as with Russell before him, expanded upon the initial innovative vision of his predecessor, Vandegrift, and repeatedly placed himself in the *adaptive space* between the *administrative* and *entrepreneurial systems* to *enable* a rapid and effective emergent response resulting in helicopter warfare—integrated air mobility and air assault. This innovation not only preserved the future of the Marine Corps, but again contributed to the broader evolution of warfare.⁹⁴

Leadership Event

Lieutenant General Vandegrift assumed the office of the CMC in January 1944 following two years of exemplary combat leadership in the Pacific from Guadalcanal through the preparations for the seizure of Tarawa.⁹⁵ Until the end of the Pacific campaign in mid-1945, Vandegrift's primary focus was on providing full-service support, followed by the enormous

⁹⁴ Lynn Montross, *Cavalry of the Sky* (New York: Harper & Brothers, 1954), xi-xii.

⁹⁵ Vandegrift would later be promoted to General—the first active Marine Corps officer to hold that rank.

effort to retrograde and drawdown the largest ever Marine Corps force structure. As the US military disparately began to conceptualize its post-war structure, roles, and missions, inter-service rivalry surged anew. The US Army and Army Air Force (AAF) began arguing for consolidation of some of the structure and missions of the US Navy and Marine Corps, with the FMF and its associated naval and aviation assets as a specific target.⁹⁶

The threat of dissolution or obsolescence would constitute the primary external pressure for the Marine Corps from the end of World War II through the Korean War. On several occasions, the War Department, Congress, and the President nearly subsumed the Marine Corps primary mission and force structure. Vandegrift, with the herculean effort of another small innovation group the Chowder Society, averted a couple such attempts in 1947 just before retiring.⁹⁷ However, the pressure continued through the commandancies of his successor, General Clifton B. Cates the nineteenth CMC, and twentieth CMC, General Shepherd.

Budget competition and the implications of tactical atomic weapons for amphibious operations were the secondary pressures that reinforced the pressure of obsolescence. As the military community imagined the development and employment of tactical nuclear weapons, many senior military leaders theorized that naval projection and amphibious assault were unnecessary. In 1949, just a year from the pivotal landing at Inchon, Secretary of Defense, Louis Johnson stated:

There's no reason for having a Navy and Marine Corps. General Bradley tells me amphibious operations are a thing of the past. We'll never have any more amphibious operations. That does away with Marine Corps. And the Air Force can do anything the Navy can do nowadays, so that does away with the Navy.⁹⁸

⁹⁶ Millett, *Semper Fi*, 451-453.

⁹⁷A.A Vandegrift. "Statement of General A. A. Vandegrift, Commandant of the Marine Corps, before the Senate Armed Services Committee on S. 758, National Security Act of 1947," (Washington DC: 1947); Vandegrift, *Once a Marine*, 312-327.

⁹⁸ Pierce, *Warfighting and Disruptive Technologies*, 71.

The Marine Corps' primary internal tension dynamics during the helicopter warfare innovation (1946 – 1953) shared similar characteristics with those of the Marine Corps during the 1920s and 1930s. Even with a significant swell in the size of the Marine Corps during World War II, its post-war officer corps remained relatively small, familiar, and richly interconnected. While the officer corps' preeminent deployed combat experience had coalesced around amphibious operations in the Pacific, the service still possessed groups competing to define the Marine Corps' future structure, roles, and missions (though more nuanced than the conventional land, naval support, and small wars groups during the amphibious warfare innovation).⁹⁹ Most of the internal tension (though modest) centered on the scale and capabilities of the FMF post-war.

The FMF, complete with a division-sized air-ground force in the Mediterranean and a Division reinforced-sized air-ground force in the Pacific, continued to be the central warfighting organization and mission platform for the Marine Corps throughout the innovation period.¹⁰⁰ However, the array of combat and combat support elements composing the MAGTF generated tension dynamics. Such tension was especially intense within the aviation component for two reasons. First, the Marine Corps and Naval aviation community felt tremendous pressure from the US Army, AAF, and preeminent political sponsors to resist the consolidation of aviation under the War Department. Secondly, and as a partial result of the external scrutiny, the Marine Corps aviation community split in its acceptance of the helicopter, with most of the combat-experienced, fixed wing pilots against the emerging platform. As tension already existed between Marine aviators pushing for the primacy of either the close air support or air-to-air combat role of aviation, the helicopter 'Young Turks' represented additional complexity.¹⁰¹ When viewed by

⁹⁹ Millett, *Semper Fi*, 351-353.

¹⁰⁰ *Ibid.*, 351-353, 456-457.

¹⁰¹ *Ibid.*, 466-467.

some opponents as an alternative to the primary roles performed by fixed-wing aircraft, the helicopter was slower, less capable, and a potential draw upon already strained aviation resources—a tension which General Shepherd would later have to manage and *sponsor*.¹⁰²

Perhaps the most significant changes in the organization since the amphibious warfare innovation period were the growth and refinement of the service Headquarters and the crystallization of *enabling* leadership and frequent use of *adaptive space* to approach complex challenges. The size and political and bureaucratic capacity of HQMC had increased as the Marine Corps gained greater autonomy from the US Navy leadership.¹⁰³ Increased size and professionalization of a headquarters staff inescapably corresponded with increased *administrative* leadership (i.e. *scaling* and *executing*) within the Marine Corps.¹⁰⁴ Such *executing* functions were essential to successfully manage the massive drawdown and reset following World War II. The rapid and unexpected mobilization and force structure increase for the Korean War in 1950 also required the *administrative system* to surge traditional, bureaucratic functions during the helicopter warfare innovation.

However, Lejeune and Russell's efforts to foster a more creative, innovative, and intellectually engaging officer corps since the 1920s were prominently observable. Adaptive agents such as the Marine Corps Gazette, small innovation groups that identified and empowered talented visionaries, and a persistent use of the Marine Corps Schools to focus the disparate group of captains, majors, lieutenant colonels, military occupational specialties, backgrounds, ideologies, scholars and teachers on finding solutions for the service's future. The service culture also began placing increasing historical and sentimental value on the visionaries and innovators

¹⁰² Montross. *Cavalry of the Sky*, 26-35; Millett, *Semper Fi*, 455-456.

¹⁰³ Marine Corps Historical Reference Pamphlet, *A Brief History of Headquarters Marine Corps Staff Organization* (Washington, DC: Government Printing Office, 1970, Revised), 16-20.

¹⁰⁴ See Figure 4.

that helped change and prepare the Marine Corps for World War II. All of this set the conditions for the service to respond to the new pressures and tensions it faced in between World War II and the Korean War. Finally, the Korean War proved a critical element of the innovation's *adaptive space* as the Marine Corps' aggressive experimentation during the war most *enabled* helicopter warfare's emergence.¹⁰⁵

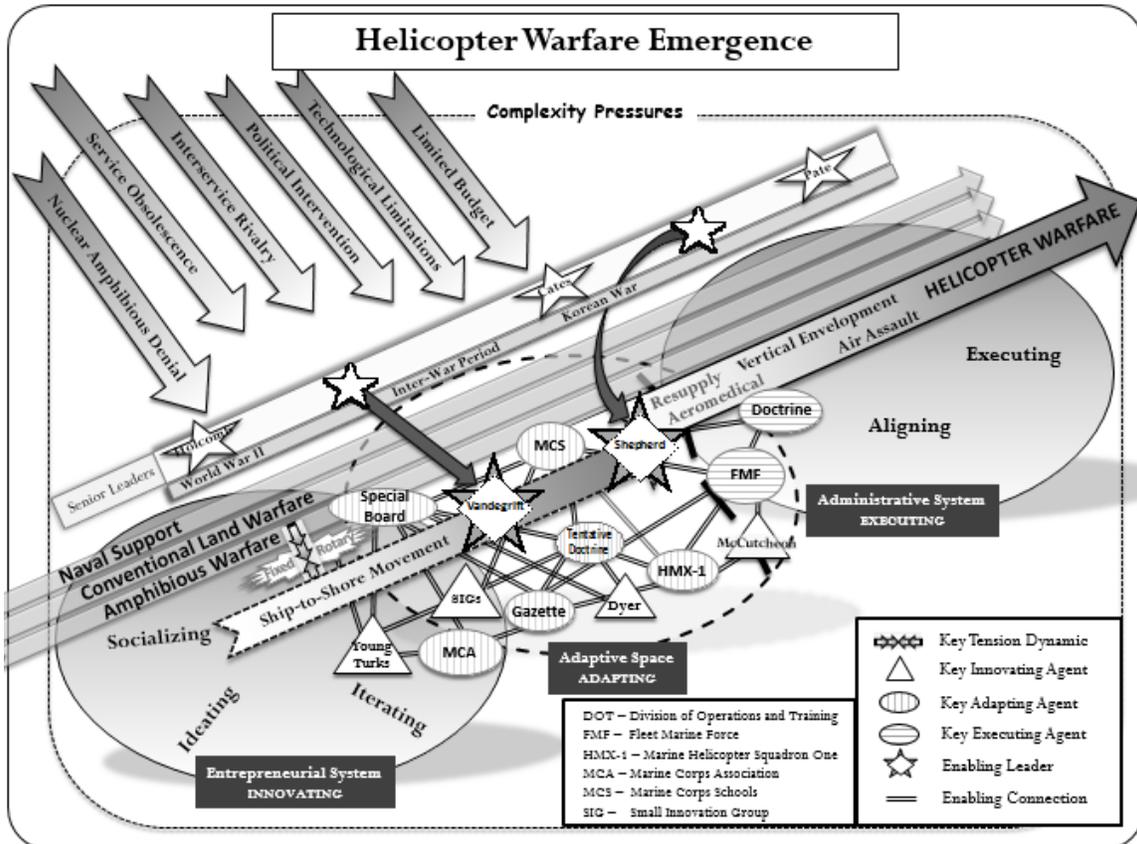


Figure 6. Helicopter Warfare Emergence. Created by the author.

Enabling Leadership and Adaptive Response

In the summer of 1946, the Navy conducted a series of nuclear tests at the Bikini Atoll in the Marshall Islands that created serious doubts about the viability of amphibious operations. The tests illustrated the potentially disastrous outcome of the mass and concentration principles of

¹⁰⁵ Montross, *Cavalry of the Sky*, 26-35.

amphibious warfare doctrine against a nuclear defense.¹⁰⁶ Vandegrift immediately formed a Special Board with some of the Marine Corps' most respected leaders, chaired by then Major General Lemuel Shepherd (then serving as ACMC), and linked the group into the MCS to analyze amphibious operations and atomic threats.¹⁰⁷ As it had in the development of amphibious warfare doctrine in the 1920s and 1930s, the MCS served as an adapting agent in the space between the *administrative* and *entrepreneurial systems*. The Special Board recommended dispersion, speed, and vertical envelopment by the amphibious force against a nuclear threat would make amphibious assault viable. For the last recommendation, the board identified a new platform which, at the time, was entirely incapable of performing the vertical lift task envisioned.¹⁰⁸

Although the military and industry had shown some interest and experimentation before World War II, helicopters in 1946 had minimal military utility and could transport no more than three people with limited speed or reliability.¹⁰⁹ The technology neither existed nor was imminently anticipated by industry to perform the type of roles imagined by the Special Board—lifting entire tactical units and equipment (up to regimental-sized) from naval vessels to landing sites beyond enemy coastal defenses.¹¹⁰ Further, the Marine Corps did not own a single helicopter or possess any helicopter pilots at the time.¹¹¹ However, Vandegrift trusted the findings and recommendations of the Special Board, and within three days of receiving the board's report in

¹⁰⁶ Millett, *Semper Fi*, 452-453.

¹⁰⁷ Pierce, *Warfighting and Disruptive Technologies*, 71.

¹⁰⁸ Vandegrift, *Once a Marine*, 320; Millett, *Semper Fi*, 453-454.

¹⁰⁹ Montross, *Cavalry of the Sky*, 26-35.

¹¹⁰ Millett, *Semper Fi*, 453-454.

¹¹¹ *Ibid.*, 454.

December 1946, he directed HQMC and MCS to push the development program, tentative doctrine, and technological innovation forward without restriction.¹¹²

Lieutenant General Vandegrift also established two key adapting agents to *enable* development. “First, in a move reminiscent of Russell’s 1930s initiative,” he established a helicopter small innovation group at the MCS in 1946.¹¹³ Next, Vandegrift directed the establishment of an experimental Marine Helicopter Squadron One (HMX-1), also at Quantico, to test emerging helicopter technologies and support the doctrinal development by the helicopter small innovation group and the MCS.¹¹⁴ Within two years, the helicopter innovation group and HMX-1 would collaborate to produce the first tentative helicopter doctrine and first vertical assault from an amphibious ship. After LtGen Vandegrift’s retirement in December 1947, Major General Shepherd continued to be an essential, senior sponsor of the helicopter development innovation during General Clifton Cates’ tenure as commandant (nineteenth CMC, 1948-1951).

As the chair of the Special Board, Shepherd continued to *enable* and *sponsor* the innovation throughout his career. He identified, *linked-up*, and *sponsored* key *entrepreneurial* and *administrative* leaders during the Special Board and subsequent implementation of the helicopter development program. Notable leaders, Colonels Merrill B. Twinning, Colston Dyer, and Victor Krulak, selected by Shepherd for the Special Board and subsequent development effort at the MCS, and a small innovation group served to *innovate*, *socialize*, and *enable* the emergence of helicopter warfare throughout the 1940s and 1950s, often without his direct administrative control.¹¹⁵ For example, Colonel Dyer contributed to the initial vision and development as the

¹¹² Montross, *Cavalry of the Sky*, 65-66.

¹¹³ Pierce, *Warfighting and Disruptive Technologies*, 73.

¹¹⁴ Pierce, *Warfighting and Disruptive Technologies*, 73.

¹¹⁵ Millett, *Semper Fi*, 453-454.

primary aviator on the Special Board, and subsequently the innovation and adaptation of helicopters as the first commanding officer of HMX-1 while under General Cates.¹¹⁶ Under Shepherd's *sponsorship*, Colonels Twining and Dyer, in conjunction with the MCS and small innovation groups began developing doctrine with detailed requirements (well beyond capabilities of any technology available at the time), and engaging emerging industry helicopter producers, such as Sikorsky and Piasecki, to develop such helicopters.¹¹⁷

In his role as Commandant of the Marine Corps Schools from 1948 to 1950, Major General Shepherd proved the key senior *enabling* leader in the Marine Corps for the emergence of helicopter warfare. Following the leadership examples of Lejeune, Russell, and Vandegrift, he facilitated the *adaptive space* around the MCS to link the *administrative* and *entrepreneurial systems*. The MCS poured both teachers and students into conceptual and detailed planning.¹¹⁸ Major General Shepherd *linked-up* a wide variety senior and junior officers in the MCS with small innovation groups and HMX-1 to develop doctrine, organization, and technology.¹¹⁹ In 1948, the MCS produced the first doctrine for helicopters, *Amphibious Operations – Employment of Helicopters (Tentative)*, which became the foundation for future doctrine and implementation during the Korean War.¹²⁰ In an effort similar to those used to test the tentative doctrine and develop amphibian vehicle technology during the 1930s, the MCS coordinated with the Navy,

¹¹⁶ Millett, *Semper Fi*, 454-456.

¹¹⁷ Montross, *Cavalry of the Sky*, 70-73, 81. On page 81, "Dyer and Twining, in fact, may be credited with having done much to acquaint both manufacturers with military needs.

¹¹⁸ *Ibid.*, 68-81.

¹¹⁹ *Ibid.*

¹²⁰ Pierce, *Warfighting and Disruptive Technologies*, 73.

FMF, helicopter industry, and HMX-1 to conduct exercises to *enable* and speed the emergence of the helicopter innovation.¹²¹

In 1950, Lieutenant General Shepherd assumed command of Fleet Marine Force Pacific (FMF-Pac)—a decisive, senior leadership position to *enable* the continued emergence of the helicopter warfare innovation during the Korean War. As the Commander, FMF-Pac, Lieutenant General Shepherd served as the Marine Corps' Pacific theater intermediary between Major General Oliver P. Smith, the Commander of the 1st Marine Division fighting on the Korean Peninsula and General Douglas MacArthur, Commander-in-Chief, United Nations Command. Even this remote posting in the Pacific again demonstrated the rich interconnectedness of the Marine officer corps. General Harris, Major General Smith, Colonel Dyer, and Colonel Krulak, key agents in the Special Board and subsequent development program, reunited with Shepherd to exploit the helicopter adaptation in Korea.¹²² Under such conditions, in the two years commanding FMF-Pac, General Shepherd employed the *sponsoring* and *linking-up* activities of *enabling* leadership frequently.

Early in the war, FMF-Pac introduced two of the key adapting agents from the original development program, tentative helicopter doctrine, and HMX-1. From the Pusan perimeter through the Inchon landing, HMX-1 employed its fledgling squadron in full support of both the Marine Corps and increasingly, the US Army. Extensive reconnaissance, command flights, resupply, medical evacuation, and battlefield distribution by Marine helicopters quickly caught the full attention and solicitation of the other services, including the commander of US forces in

¹²¹ Montross, *Cavalry of the Sky*, 83-87.

¹²² *Ibid.*, 121-129.

Korea, General Almond, the US Army X Corps Commander, who used Marine helicopters “time and time again.”¹²³

Such enthusiastic response served not only in *linking-up* support for the helicopter innovation into the Navy and Army, but also provided an opportunity to *sponsor* the emerging capability across bureaucratic resistance further. In a joint memorandum to Navy admirals on September 1950, General Shepherd stated, “There are no superlatives adequate to describe the general reaction to the helicopter...the usefulness of the helicopter is not by any means confined to a situation such as Korea.”¹²⁴ He further highlighted the impact of helicopters in a most emphatic call to resource the innovation, “No effort should be spared to get helicopters in any form...to the theater at once, and on a priority higher than any other weapon.”¹²⁵ A few months after this memorandum, the Marine Corps commissioned its first Marine Transport Helicopter Squadron (HMR), HMR-161, and less than a year later FMF-Pac employed HMR-161 in combat operations in Korea.¹²⁶

In addition to *linking-up* sponsors, critical resources, and brokers across Marine, Navy, and Army networks, General Shepherd also *enabled* the *adaptive space* for key innovators during the Korean War. Innovators, such as Colonel McCutcheon, the HMX-1 Commanding Officer and “vertical assault’s intellectual equivalent of Ellis,” and Colonel Krulak created, adapted, and refined tactics, technology, and doctrine.¹²⁷ Many battlefield adaptations emerged, including medical evacuations to hospital ships, the first air assault in history (Operation Windmill), and

¹²³ Montross, *Cavalry of the Sky*, 133-136.

¹²⁴ Ibid.

¹²⁵ Ibid., 136.

¹²⁶ Ibid., 156-157.

¹²⁷ Keith B McCutcheon, “Equitatus Caeli,” *Marine Corps Gazette*, 38, no. 2 (February 1954), 24-27; Pierce, *Warfighting and Disruptive Technologies*, 74; Montross, *Cavalry of the Sky*, 169.

quick reaction troop lifts for anti-guerrilla operations.¹²⁸ The latter two innovations would evolve into essential components of US warfare in the Vietnam War. Because of the rapid adaptation and overwhelming success of helicopter in Korea, by the end of 1951, the other US services had largely adopted the Marine helicopter doctrine, and the “helicopter was on its way to becoming the foremost tactical development of the war.”¹²⁹

When General Shepherd relinquished command of FMF-Pac to become the twentieth Commandant of the Marine Corps (1952-1955) in 1952, the emergence of helicopter warfare was nearly complete. The US government and military bureaucracies had mostly accepted the helicopter innovation and were beginning the resourcing, *aligning*, and *executing* functions of the *administrative system*. Marine helicopters represented a decreasing monopoly as the US Army and Air Force ramped-up pilot training and helicopter fielding.¹³⁰ Until his retirement in 1954, General Shepherd continued to *enable* the MCS and HMX-1 to exploit commercial industry, the small innovation groups, and the whole *entrepreneurial system* to refine helicopter technology, organization, doctrine, and tactics. He also directed post-war exercises to apply lessons learned and refine vertical envelopment within amphibious operations against atomic threats.¹³¹

Summary

In the Helicopter Warfare innovation, Lieutenant General Vandegriff’s contribution was two-fold. First, he responded to the powerful external pressures as well as internal consternation regarding the complex atomic challenge with an open, adaptive mindset, rather a control response. Rather than submit himself and the service to the “atomic hysteria” common among

¹²⁸ Pierce, *Warfighting and Disruptive Technologies*, 74.

¹²⁹ Montross, *Cavalry of the Sky*, 136.

¹³⁰ Montross, *Cavalry of the Sky*, 189.

¹³¹ *Ibid.*, 204-212.

senior officers within and outside the Marine Corps, he trusted in his organization's ability to adapt to the challenge.¹³² Second, he set an organizational vision and trajectory by placing himself, as the Marine Corps' senior leader, within an *adaptive space* that *sponsored* the complex, innovating networks within the organization to generate an adaptive response to the atomic challenge. Vandegrift's visionary appreciation for the potential of aviation to change warfare goes back to the earliest uses of planes in combat, during operations by the Marine Corps in Haiti and further imagined in Vandegrift's thesis at the School of Application in 1909, *Aviation, The Cavalry of the Future*.¹³³ While Vandegrift's proportion of the role in the helicopter innovation may be less significant than Gen Shepherd's, Lieutenant General Vandegrift reinforced the *enabling* leadership lessons from the amphibious warfare innovation and set the conditions for the organization and Shepherd to exploit *adaptive space* throughout the innovation.

General Shepherd continually placed himself, as a senior leader, in the *adaptive space* below the bureaucratic barrier. As the ACMC, he *linked-up* and *catalyzed* the conceptual adaptive response and generated vision in the Special Board and subsequent development program. Upon becoming the Commandant of the Marine Corps Schools, he continued to leverage the faculty, students, innovators, and small innovation groups to *enable* doctrinal, organizational, and technological emergence. As Commander FMF-Pacific during the Korean War and following as CMC, General Shepherd aggressively *sponsored* the emergent success of the helicopter innovation through remaining bureaucratic barriers, with the other US services and militaries around the world quickly cueing into the warfare innovation.

What initially emerged as a potential solution to mitigate the effects of tactical nuclear defense against the ship-to-shore movement within Marine Corps amphibious operations

¹³² Vandegrift, *Once a Marine*, 319-320.

¹³³ *Ibid.*, 64.

doctrine, evolved into a broader innovation in warfare. Through innovating and adapting agents such as the Shepherd's Special Board, the MCS, small innovation groups, and McCutcheon's HMX-1 squadron, the Marine Corps demonstrated vision and *enabling* leadership from two of its senior leaders. Such leadership and vision quickly produced an innovation that continued to impact warfare from Korea, through extensive broadening in Vietnam, and into today. In 1954 before its development was even complete, General Shepherd best summarized the scope, scale, rapid emergence, and benefit of helicopter warfare:

It is a story of creative achievement. From peacetime exercises, the Marine Corps progressed to Korean combat operations in which whole battalions were transported to the front and whole regiments supplied by helicopter. And from the helicopter of 1947, carrying two men, the Marine Corps progressed to the helicopter of 1954, lifting 26 battle-equipped troops. Nearly ten thousand men in Korea were evacuated to hospitals or rescued behind enemy lines by Marine helicopters...battle operations were meanwhile being rendered more effective by helicopter troop lifts, supply missions, and command flights.¹³⁴

Section 5: Conclusion

More than simplistic notions of empowerment, this approach encourages all members to be leaders – to “own” their leadership within each interaction, potentially evoking a much broader array of responses from everyone in an organization. Complexity leadership theory provides a clear and unambiguous pathway for driving responsibility downward, sparking self-organization and innovation, and making the firm much more responsive and adaptive at the boundaries. In turn, significant pressure is taken off formal leaders, allowing them to attend more directly to identifying strategic opportunities, developing unique alliances, and bridging gaps across the organizational hierarchy.¹³⁵

The case studies overlaid the Complexity Leadership Theory on two periods of significant organizational emergence within the Marine Corps. As illustrated, such an analytical exercise requires understanding the organization's leadership with a systems perspective—*administrative* and *entrepreneurial*. The organizational culture prescribed by CLT reflected the

¹³⁴ Montross, *Cavalry of the Sky*, xi-xii.

¹³⁵ Uhl-Bien and Lichtenstein, 8.

prevailing leadership culture within the Marine Corps, particularly regarding the responsibility, interaction, and reciprocity prescribed by Lejeune’s “teacher and scholar” description of leadership. The evidence suggests that the Marine Corps during the periods of the case studies possessed a culture of leadership that is conducive and applicable to the Complexity Leadership model. Major General Lejeune’s initial *entrepreneurial* advocacy through the MCA in 1916, followed by his use of *enabling* leadership to *link-up*, *catalyze*, and *sponsor* ideas and innovations from within the *adaptive space*, established the foundations of a leadership culture compatible with the CLT. Commandants Russell, Vandegrift, and Shepherd continued within this construct, linking subsequent executive vision with the *entrepreneurial* capacity to address changing external pressures and *enable* the emergence critical to the service’s interests. The resulting broader, institutional culture increasingly drove “responsibility downward,” sparked “self-organization and innovation,” and made the Marine Corps “much more responsive and adaptive at the boundaries.”¹³⁶

The research provides five key implications for the organization’s leadership in a complex, information age environment. First, the CMC and senior leadership must have a vision of the general direction or ways in which the organization could transform. An example of such vision includes Major General Lejeune’s realization of amphibious warfare’s vital importance to the Marine Corps’ future given the threat of a war with Japan in the Pacific and the dangerous void of solutions to address such a threat. Lejeune recognized the competing organizational and systems pressures (i.e. the small and conventional land war factions, and inter-service rivalries) and the resulting bureaucratic barriers to forcing such wide-sweeping transformation through the organization solely from his position as the senior leader in the organization.

¹³⁶ Uhl-Bien and Lichtenstein, 8.

Second, the senior leadership of the Marine Corps must maintain a systems and complexity understanding of leadership. Neither definitive nor prescriptive, such an approach to understanding the organization serves to expand leadership's view of the emergent capacity of the *entrepreneurial system* and identify and challenge bureaucratic barriers. While seemingly obvious, pressures, lack of resources, and unseen complexity frequently diminish or subvert the necessary systems and complexity habit of thought in bureaucracy.

Related to a systems and complexity leadership perspective, individual senior leaders must remain cognizant of the broad interactions of leadership across the organization, particularly the linkages between preceding organizational vision and emerging changes within the organization. As illustrated in the case studies and complexity leadership scholarship, a transformational innovation rarely is the result of a single leader or interaction. Rather, leadership interactions that produce *enabling* conditions over time connect in unpredictable ways to facilitate significant emergence. Accordingly, senior leadership must consistently seek to understand how the previous, current, and emerging ideas and interactions within the organization may be connected.

Fourth, senior leadership must recognize that *administrative systems* will not generate most of the organization's capacity for *ideating*, *socializing*, and *iterating* innovation within complex environments. Innovation must be able to move from the bottom up. Such realization is especially important in the information age, as the speed and breadth of interactions between agents and systems generates changes in often unpredictable and unexpected ways. Rigid industrial age leadership approaches, designed for administrative control and efficiency—a desirable and attainable outcome for manufacturing processes—are not conducive to emergent responses in the complex operating environment. Senior leadership, in its frequent functioning as the *administrative system* of the organization, should limit top-down administrative control as a response to external pressures; and should primarily serve to *align*, *scale*, and *execute* innovation with available resources for the organization.

Finally, senior leadership should persistently identify and position itself within the *adaptive space* between the *entrepreneurial* and *administrative systems*. Senior leadership's role in the *adaptive space* is to provide *enabling* leadership. The purpose of such leadership is less positional or authoritative, but more aimed at *catalyzing* and *linking-up* emerging ideas and then *sponsoring* them through the administrative barrier for *aligning*, *scaling*, and *execution*.

Positioning itself in the *adaptive space* forces leadership to continuously attempt to understand and balance external pressures with internal tensions, while *enabling* connections between individuals and groups that facilitate adaptation. *Enabling* leadership forms, leverages, or *sponsors* adapting agents, such as the MCS, small innovation groups (formal or informal), or the MCA, to link critical resources, innovators (e.g. Ellis, McCutcheon, Krulak), and brokers.

Enabling the strength and frequency of such rich interconnections across the service produces the best response to complex operating environments and reflects a legacy of Marine leadership.

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