The Influence of U.S. DOD Service Culture on Critical and Creative Thinking

Submitted by

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Abstract

The purpose of this study was to explore the influence of service culture on the critical and creative thinking performance of members of the U.S. DOD. While the need to increase performance in areas such as innovative, creative, and critical thinking continues to grow, little practical study has been undertaken to assess the influence of service culture on these processes. The study followed a phenomenological methodology to investigate the experiences and perspectives of 22 U.S. DOD employees assigned to organizations headquartered in the National Capital Region of the United States. Detailed narratives provided insight into the phenomenon, and unveiled elements of cognitive influence from the employee’s point of view. The competing values framework, the self-actualization theory, and the three-part theory of critical thinking, frame the research. The findings suggest that the cognitive influence of service culture is pervasive, and several service cues appear to affect critical and creative thinking. Dominant ideologies such as dedication to the mission, the concept that failure is not an option, and strict adherence to hierarchal decision-making evolved as factors influencing the efficacy and frequency of employee critical and creative thinking. The researcher posits that U.S. DOD leaders could use this information to strategically adjust service cues and aspects of internal service culture to improve the performance of their personnel.

*Keywords*: creative thinking, critical thinking, service culture, service cues, innovation, autocratic leadership, hierarchal culture, DOD, cognitive influence
Dedication

I would like to dedicate this dissertation to my father, Roger Seiler, my daughter Lynette Johnson, and my husband, Major Robert Gable.

Dad, you have been a constant, steady presence all my life. I never worried about leaping into the unknown, because I knew you would be there to catch me if I fell. While I sometimes wondered if I could possibly achieve what you expected of me, you believed I could, and so I did.

Lynette, your humor, commiseration, and enthusiasm is a ray of sunshine that lights my life and gives me hope when I might otherwise falter in the dark. Your beautiful spirit inspires me to be a better human, and regardless of the academic credentials I aspire to, you will always remain my greatest work.

Last, but not least, I dedicate this work to my husband. Rob, you are the finest example of an officer and a gentleman I have ever known. It is your example that inspired me to conduct this research and your encouragement and support that helped me get through it. While I cannot hope to match your bravery and sacrifice, it is my hope that this body of work will, in some small way, help ensure that you and your troops always get home safely.
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I would like to acknowledge Ms. Janice Glover-Jones, who, despite holding the highest role in her organization, made time to mentor me during this process. Thank you. Your thoughtful input, recommendations, and pointed questions held me steady in this endeavor, and helped me maintain optimism that the results will be of sufficient caliber to affect real change.

To my supportive friends and colleagues, who continued to express interest in my progress, despite my inexhaustible ability to bore with details, I thank you.

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## Summary of the Study

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Chapter 1: Introduction to the Study

The critical nature of national defense makes exploration of Department of Defense (DOD) service culture particularly compelling. In recent years scholars have examined psychological and cognitive implications of DOD service in areas such as resilience, depression, decision-making, leadership, team formation and problem solving (Bosarte & Kemp, 2012; Britt & Sinclair, 2013; Carter, 2013; McAdams, 2013; McNally, 2012; Negrusa & Negrusa, 2014). These researchers have produced empirical data supporting the theory that the experience of serving in a military institution influences employee cognition and behavior, but much remains unknown about the phenomenon. This relatively unexplored area of study has the potential to affect multiple areas of mental health, behavior and cognition and merits deeper exploration.

Military institutions throughout the world share fundamental commonalities in the mission of war and the requirement to establish an effective fighting force. The perpetuation and reinforcement of military service cues support the formation of a cohesive military and serve to meet this requirement (Chiu & Tu, 2014). In this context, service cues refer to the cultural differences that establish military institutional identity, emphasizing unique areas of mission focus, behavioral norms, ethos, and ideals within military organizations (Redmond et al., 2015).

In U.S. DOD institutions, immersive programming is provided to develop desired traits and eradicate undesirable behaviors (Cappiopo, Reise & Zautra, 2011; Mariano, 2014). The training is conducted with the intent to holistically alter both employee behavior and cognitive performance (Morgan & Simonetti, 2014). Collectively, the service cues and immersive programming frame the U.S. DOD service culture. The
objective of this study was to explore how the service culture of the U.S. DOD, and the service cues existent within, influence the critical and creative thinking performance of its personnel.

This study’s research expanded upon quantitative research conducted by Chiu and Tu in 2014 which provided empirical data demonstrating linkages between service cues and creative and critical thinking performance within Taiwan’s Army and Air Force. Within the context of the study, the scholars recommended further exploration of other government or military institutions (Chiu & Tu, 2014). To date, little, if any, research has been conducted on this phenomenon in the United States, and none within the U.S. DOD. The objective of this research was to expand upon the 2014 study, utilizing qualitative phenomenological inquiry to examine the phenomenon as it exists within the U.S. DOD. Through data analysis, the researcher sought to identify specific elements and factors existent within the U.S. DOD service culture that influence employee creative and critical thinking performance.

This chapter contains an overview of the research focus, its purpose, scientific contribution, significance, and implications. The background of the problem, phenomenon, problem statement, and affected population is defined as well as the nature of the research design, the rationale for the research methodology, research questions, sample information and the process used to collect the data. Additionally, the chapter contains definitions of terms, assumptions, limitations, and delimitations, and concludes with a chapter summary.
Background of the Study

The U.S. DOD is the largest employer in the United States, supported by approximately 2,000,000 civilian and military employees. Its organizational culture of honor, discipline, and order is highly respected, but its current pace of innovation is not (Waller, 2015). Adversaries are rapidly innovating new disruptive technologies that pose a significant threat to national security (U.S. Department of Defense, 2015) while the U.S. DOD continues to follow its traditional processes and methodologies (Tyson, 2014). The need to develop new disruptive technologies, create new strategies, and stay well ahead of threats to national security is intense. The increase in innovation, however, has been slow in coming, and the high level of creative and critical thinking required for its production is not yet evident. In 2015 President Obama renewed the charge for increased use of critical thinking and innovation, and U.S. DOD leadership put forth strategies to support the requirement (The White House, Office of the Press Secretary, 2015; U.S. Department of Defense, 2015).

Currently, the high level of creative and critical thinking required to outpace external innovation is not apparent in the rate and volume of U.S. DOD innovative output (Tyson, 2014; Collier, 2013). While technology has enabled the speed of innovation to increase significantly throughout the world, the pace within the DOD has been notably slower (Waller, 2015; Tyson, 2014). Despite generous funding, world-class training, disciplined and dedicated personnel, something in the U.S. DOD environment appears to be inhibiting the necessary growth, causing the organization to maintain status quo rather than reflecting the increased levels of innovation that the civilian population is experiencing.
While the need to increase the rate of innovation is clear, the reasons for the existing deficit and the means to correct it are not. Organizationally, the components for rapid innovation are present, but not the execution. In addition to consideration of tangible factors such as fiscal and staffing constraints, the examination of intangible elements such as the influence of service culture and service cues on cognitive performance is an important avenue of exploration. The U.S. DOD must gain an understanding of this phenomenon if it is to adapt to the challenges of the evolving technological environment and prevent future attacks.

The researcher could find no studies focused on the influence of U.S. DOD service culture on the creative and critical thinking performance of its employees. However, scholarly literature exists relative to the topic in military institutions outside of the United States. Cultural differences may exist between the country of origin, branch, unit or operational specialty, but all military institutions have the primary mission of warfighting and the requirement to form a unified fighting force capable of responding in a cohesive manner during times of crisis (Redmond et al., 2015). Service cues support this requirement by underscoring distinctions between military institutions and cultures, emphasizing areas of niche mission focus to create a shared identity. In this context, service cues refer to the cultural differences that establish military institutional identity, underscoring unique areas of mission focus, behavioral norms, ethos, and ideals within different military cultures.

Within the U.S. DOD, multiple unique service culture environments exist and service cultures differ between institutions. For example, the oldest U.S. military institution is the U.S. Army. Its service culture is traditional and emphasizes service
cues for seven core values: loyalty, duty, respect, selfless-service, honor, integrity and personal courage (U.S. Army, 2017). The youngest U.S. military branch is the U.S. Air Force. Its service culture emphasizes cues for continuous improvement, integrity, service before self, and excellence in performance (U.S. Air Force, 2017). As researchers argue that cultural influences can have a significant impact on both critical and creative thinking performance (Cohen, 2000; Maslow, 2014; Ritola, 2012) exploring the influence of service cues within U.S. DOD institutions was particularly relevant to this study.

The inculcation of service cues serves to shape the thoughts and actions of the service member and creates a sense of belonging and commitment to the mission. In a recent study, the Taiwanese DOD conducted research to determine whether service culture influenced the creative and critical thinking of its military. Comparative analysis revealed that creative thinking scores were higher in the Air Force than in the Army, and critical thinking scores were higher in the Army than in the Air Force. The researchers concluded that the variances were due to the differences in service cues within each branch and recommended further exploration of the phenomenon in other military institutions (Chiu & Tu, 2014). Exploring this phenomenon within the U.S. DOD will expand existing knowledge and potentially provide new information to leverage in the effort to improve employee creative and critical thinking performance.

**Problem Statement**

Scholars have explored the cognitive and psychological effects of service culture and service cues in areas such as psychological and cognitive resilience (Cacioppo, Reis, & Zautra, 2011; Marino, 2014), decision-making (Horowitz & Stam 2014, Cunningham, 2012), readiness to change, (Carver, 2012), critical and creative thinking (Chiu & Tu,
Researchers recently found that differences in service cues between the Army and Air Force in Taiwan positively correlate with differences in critical and creative thinking performance between the two branches (Chiu & Tu, 2014). Absent from the literature is research data relative to the phenomenon in the U.S. DOD.

In addition to the gap in the literature, the need to understand how service culture influences the cognitive performance stems from the requirement to anticipate and prevent external attacks (U.S. Department of Defense, 2015). Due to the rapid increase in terrorist and cyber threats worldwide, it is imperative that U.S. DOD personnel become more innovative. For the prevalence and pace of innovation to increase, the supporting mechanisms of creative and critical thinking must also increase, but the precise method of achieving this goal remains elusive.

With 2,000,000 employees, the human resource population is large enough to contain numerous individuals with the skills necessary to innovate. The 2016 national defense budget of 609.6 billion dollars (United States Department of Defense, Office of the Comptroller, 2016) has sufficient bandwidth to fund innovation, and the call from President of the United States has mandated its execution (The White House, Office of the Press Secretary, 2015). Despite the aforementioned support, the pace of innovation remains inequitable to that of its civilian counterparts. Something in the organizational environment appears to be inhibiting the needed growth in creative and critical thinking performance (Tyson, 2014). This study will contribute to scientific knowledge by providing insight into the phenomenon occurring within the U.S. DOD.
Purpose of the Study

The purpose of this qualitative phenomenological study was to explore how the service culture of the U.S. DOD influences the critical and creative thinking performance of its personnel. Multiple researchers have produced data supporting the theory that the experience of serving in the DOD influences psychological and cognitive performance (Allen Gerras, & Wong, 2008; Arial, Hiatt, & Quinet, 2013; Arnaud & Tinoco, 2013; Cacioppo et al., 2011; Carver, 2012; Chiu & Tu, 2014, Chiu & Yau, 2010; Cunningham, 2012; Horowitz & Stam, 2014; Koldtiz, 2009; Marino, 2014; Morgan & Simonetti, 2014; Negrusa & Negrusa, 2014). Recently, scholars analyzed the influence of service cues on the critical and creative thinking performance of service members in Taiwan (Chiu & Tu, 2014). The results demonstrated that a correlation exists, but provided no insight into how or why the phenomenon occurs.

The researcher designed this study to explore the lived experiences of U.S. DOD personnel through phenomenological inquiry. In-depth narratives provided insight into how the experience of serving in the U.S. DOD influenced the creative and critical thinking of its employees. Identifying the specific service cues that influence critical and creative thinking provided key information necessary to improve performance.

The study was conducted in the United States National Capital Region (NCR), encompassing sites located on the Joint Base Anacostia-Bolling, in Arlington, VA, Marine Corps Base Quantico, in Quantico, VA, Fort George Mead Army Post, in Fort Meade, MD, and the Pentagon, in Washington D.C. The population of the U.S. DOD encompassed approximately 1.3 million active duty military and 742 thousand civilian personnel (U.S. Department of Defense, 2016). The target population consisted of 1,284
employees who utilized LinkedIn.com and identified employment with the Defense Intelligence Agency (DIA), headquartered in Washington D.C. The DIA is a joint duty location employing civilian and active duty personnel from all U.S. military branches. The study sample consisted of 22 U.S. DOD employees who held the civilian rank of GG13 through senior executive (SES) or the military rank of Non-Commissioned Officer, E-7-E10 or Commissioned Officer, O4 through O7. The rank criteria served as a filter to ensure all participants held mid- to senior-level professional positions in the DOD.

Research Questions

Three research questions guided this study:

RQ1: How do U.S. DOD employees describe their service culture?

RQ2: How does the experience of working in the U.S. DOD service culture influence its personnel’s critical thinking performance?

RQ3: How does the experience of working in the U.S. DOD service culture influence its personnel’s creative thinking performance?

The researcher focused on the lived experience and perceptions of U.S. DOD employees. A rich understanding of the service culture emerged through insight gleaned from participant narratives. Exploring the unique perceptions of the phenomenon from the employees’ point of view identified the complex, nuanced elements of service culture that quantitative inquiry cannot capture.

Advancing Scientific Knowledge

While rapid advances in technology necessitate paradigm shifts in the role of innovation in the defense industry, very little research exists on the influence of service cues on cognitive performance. Service cues are the spoken and unspoken messages that
emphasize differences between military institutions, shaping service member focus, values, and behaviors to form a cohesive unit and establish military institutional identity (Chiu & Tu, 2014; Redmond et al., 2015). Extensive research revealed only one study focused specifically on this phenomenon (Chiu & Tu, 2014). While the presence of service cues is common to all military institutions, its influence on cognition may manifest dissimilarly within different entities. There is enormous opportunity to advance scientific knowledge in this area as there are numerous military institutions throughout the world, and very little data relative this phenomenon.

Service culture is unique in the pervasiveness of its influence. In the U.S. DOD, mottos such as “Rangers lead the way” and “The few, the proud, the Marines” are more than slogans – they are a way of life and a legacy that members fight to maintain. Unlike civilian organizations, U.S. DOD training begins on the first day of employment with a sworn oath of obedience, and a pledge to sacrifice one’s life if called to do so. Personnel receive immersive training aimed at shaping the performance, attitudes, and morals of the individual throughout his or her career. Continuous priming serves to shape the character of the individual to ensure that conduct is exemplary on and off duty, and the lessons learned are life-long (Kolditz, 2009, Redmond et al., 2015).

The researcher utilized three foundational theories to frame the study. Maslow’s self-actualization theory (2014) provided a framework for understanding the components of creative thought and provided guidance on the environmental and psychological conditions that should be present to support creative thinking. According to Maslow, a critical component of creativity is the ability to execute without fear of ridicule or strangulation of ideas. The presence of such fear or suppression within the culture of an
organization could result in a lack of creative thinking and, therefore, a lack of innovation. The self-actualization concept arises from Maslow’s hierarchy of needs theory that divides human needs into five stages of a pyramid. The most basic physiological requirements are at the base of the pyramid, followed by safety, love, esteem and finally self-actualization. According to Maslow, the conditions necessary for creative thinking exist within the self-actualization phase. Therefore, optimal levels of creative thinking only occur after meeting basic needs such as food, shelter, and safety.

Cohen’s three-part theory of critical thinking (2000) further framed the study. The theory defines critical thinking as a cognitive skill that utilizes an open-minded approach to recognize a problem, consider existing knowledge, evaluate the accuracy of new information, and analyze the composite of information to render a logic-based decision (Cohen, 2000). The theory was relevant to understanding the phenomenon as it provided guidance on the cognitive processes and behaviors that must be present for critical thinking to occur.

The competing values framework (Cameron & Quinn, 2011), provided a guideline for assessing the cultural focus of an organization. The model demonstrates 39 effectiveness indicators to determine an organization’s placement within four dominant categories across two dimensions. The framework supports the ability to define an organization’s underlying assumptions, and it deepened the understanding of the phenomenon.

This study built upon prior quantitative research and contributed to scientific knowledge by providing a deeper understanding of the phenomenon. Earlier researchers have produced empirical data that established that the immersive inculcation of service
cues could influence employee behavioral and cognitive performance. Understanding the complexities of the phenomenon and identifying key elements that influenced creative and critical thinking provided insight to leverage in the effort to improve performance in the U.S. DOD.

**Significance of the Study**

Little empirical research could be located on the influence of U.S. DOD service cues on creative and critical thinking performance. To date, only one study has been conducted on the topic, but the results were compelling, and the opportunities for advancing scientific knowledge in this area are broad. The significance of practical applicability is clear, as the success of the U.S. DOD mission is paramount to the survival and well-being of the American people and directly contributes to the stability of the world economy. This mission is currently at risk because U.S. adversaries are innovating new methods of attack faster than the U.S. DOD’s current rate of defense innovation (Waller, 2015, Tyson, 2014). The results of this study provided insight into unexplored phenomena that influence the creative and critical thinking of U.S. DOD personnel. The information may be leveraged in future efforts to improve employee creative, critical and innovative performance in military institutions.

According to Chiu and Tu (2014), the service cues of individual military branches influence the creative and critical thinking performance of its personnel. While their study provided evidence of correlation, it did not specifically identify the factors that were of greatest influence, nor did it explore other military organizations outside of Taiwan. Exploring this phenomenon in the U.S. DOD built upon existing research and
contributed new information to the theories on service culture, service cues, creative and critical thinking.

Insight generated by the study group’s narratives increased scientific knowledge on the influence of service culture and service cues on creative and critical thinking performance to provide a greater understanding of the far-reaching influence of organizational culture. This information can be used operationally to adjust aspects of internal service culture and priming to improve the cognitive performance of DOD personnel and increase the rate of DOD defensive innovation.

**Rationale for Methodology**

Analysis of multiple research methods led to the selection of a qualitative phenomenological methodology to frame this study. The researcher addressed a gap in scientific knowledge by exploring phenomena identified in a recent quantitative study. Chiu and Tu (2014) identified a statistical relationship between service culture and creative and critical thinking, but did not explore the phenomenon in depth, nor did they explain how the influence occurred.

In the context of the research questions in this study, the variables driving the phenomenon were not known. Qualitative research methods are focused on capturing elements of a problem that are not easily or effectively quantified and utilize a narrative style to explain the meaning and context of a particular problem. According to Creswell (2013)

Qualitative research begins with assumptions and the use of interpretive/theoretical frameworks that inform the study of research problems addressing the meaning individuals or groups ascribe to a social or human
problem. To study this problem, qualitative researchers use an emerging qualitative approach to inquiry, the collection of data in a natural setting sensitive to the people and places under study, and data analysis that is both inductive and deductive and establishes patterns or themes. The final written report or presentation includes the voices of participants, the reflexivity of the researcher, a complex description and interpretation of the problem, and its contribution to the literature or calls for change (p.44).

The scholar chose the qualitative methodology and explored the research questions through phenomenological inquiry. According to Cronbach (1975), statistical analysis cannot adequately capture the full spectrum of experience that occurs in a social setting. Service culture is an area of social interaction filled with nuances of personal experience. When experiences are important in understanding the phenomenon, a qualitative methodology is most appropriate (Cooper & Schindler, 2011; Creswell, 2013; Green & Thorogood, 2009). The methodology captured valuable first-hand recollections of the lived experiences and provided a depth of experiential insight that cannot be obtained by other methodologies.

Accurately documenting and analyzing the lived experience of a social phenomenon relies upon understanding the perceptions and emotions of the participant. The depth and complexity of the information generated through phenomenological inquiry helped identify specific elements existent within the service culture that appear to influence creative and critical thinking performance. This information provided insight into potential opportunities to enhance cognitive performance.
Nature of the Research Design for the Study

Phenomenology reached prominence through the work of Edmund Husserl (1859-1938), who theorized that information about objects was unreliable outside of the context of personal experience. In Husserl’s view, the only absolute data comes from what is perceived and experienced (Groenewald, 2004; Eagleton, 1983). While other designs, such as grounded theory, could produce reasonably good results, the flexibility of the phenomenological approach and its ability to capture nuances of personal experience make it best for this study. The use of phenomenological inquiry facilitated the exploration of the influence of U.S. DOD service culture on the critical and creative thinking of its personnel. Analysis of the participant’s narratives captured the essence and meaning of the lived experiences to expand understanding of the phenomenon, which is what a phenomenological design is intended to do.

The researcher developed a series of open-ended questions designed to encourage participants to document their experiences and perceptions surrounding the phenomenon in a detailed narrative. Use of an online platform to present the questions provided the participants with greater convenience and anonymity. The increased feelings of privacy afforded through this delivery method encouraged participants to feel safer when sharing their experiences, especially if they perceived such experiences to be embarrassing (Deakin & Wakefield, 2014; Burns, 2010). Additionally, the online format had an advantage over traditional face-to-face interactions in that it afforded greater amounts of time for the participant to respond with thoughtful answers and for the researcher to review the data and ask follow-up questions (Ratislavova & Ratislav, 2014; Opdenakker, 2006). The primary disadvantage of the online format was the inability to observe body
language and verbal tone, which necessitated additional follow-up questions to ensure that the researcher captured the nuances of the participants lived experience (Opdenakker, 2006). Given the well-known concern for anonymity and fear of reprisal that DOD personnel have, the merits of the online format outweighed the disadvantages.

The target population consisted of 1,284 employees who utilized LinkedIn.com and identified employment with the Defense Intelligence Agency, headquartered in Washington D.C. The study sample consisted of 22 U.S. DOD employees who held the civilian rank of GG13 through SES or the military rank of Non-Commissioned Officer, E-7-E10 or Commissioned Officer, O4 through O7. The rank criteria served as a filter to ensure all participants held mid- to senior-level professional positions in the DOD.

The critical case sampling rationale supported the selection of a sample size goal of 20-30 (Guetterman, 2015). U.S. DOD employees holding civilian positions ranked GG13 through SES or the equivalent military range from full-performance to expert and are expected to utilize creative and critical thinking in the execution of their duties. These positions have standard requirements for education levels and experience. The standardization of the participant group allowed for logical generalization and maximum application of information to the larger population.

Definition of Terms

Several terms and phrases are used operationally that have a distinct meaning relative to the phenomenon studied in this research. The following definitions serve to provide clarity and consistency of interpretation of the research.
**Authentic leadership.** A form of leadership characterized by relational transparency, self-awareness, internalized moral perspective and balanced processing (Avolio, Hannah, & Walumbwa, 2014).

**Centralization.** The degree to which employees participate in the decision-making surrounding organizational policies and procedures (Jaskyte, 2013).

**Creative thinking.** Multiple conflicting definitions of creative thinking exist. For this study, the term creative thinking refers to the process by which the individual integrates primary and secondary thought processes to generate new ideas (Maslow, 2014).

**Critical thinking.** A cognitive skill that requires the thinker to utilize an open-minded approach to recognizing problems, consider existing knowledge, evaluate the accuracy of new information, and analyze the composite of information to render a logic-based decision (Cohen, 2000).

**Command Team.** A team of individuals assigned to specific functions or roles to work towards a common goal, mission or objective. Generally located within the same hierarchal organizational structure, although ranks typically vary within the team construct (Aitken, 2011).

**Department of Defense (DOD).** The component of the Executive Branch of the United States Government responsible for providing military force, strategy, and technology to deter war and protect the Nation’s interests. The DOD employs approximately two million people and consists of 4 Branches, 17 Defense Agencies, 9 Combatant Commands, and 8 Field Activities (U.S. Department of Defense, 2016).
**Formalization.** The extent of emphasis placed on organizational procedures and rules (Jaskyte, 2013).

**Innovation.** The process by which creative and critical thinking are combined to generate new ideas and produce useful products or solutions (Heart, Maoz & Pliskin, 2010).

**Service culture.** The social and psychological environment within the DOD. Service culture is formed from the behaviors, values, and beliefs of individuals and groups within a Branch or Agency of the DOD (Chiu & Tu, 2014).

**Service priming.** The immersive service training that is focused on the adoption of codes of honor, morality, and duty, combined with the influence of stereotypes, attributes and behavioral expectations commonly associated with the DOD (Chiu & Tu, 2014).

**Organizational culture.** The combination of beliefs, values, and expectations held by individuals and groups within an organization that creates its social and psychological environment and heavily influence the actions they take (Arial et al., 2013; Chatman, 1989; Schneider, 1987; Terborg, 1981).

**Transformational leadership.** A set of practices deployed to strengthen relationships between employees and their leaders (Kouzes & Posner, 1993).

**Assumptions, Limitations, Delimitations**

The following assumptions were present in this study:

- It was assumed that study participants provided truthful information about their perceptions of the U.S. DOD service culture and its influence on their creative and critical thinking performance. Participation in the study was
voluntary and confidential and presented no need to purposefully obfuscate information.

- Based on the critical case sampling rationale (Creswell, 2013), the number and selection of study participants were sufficient to produce an accurate result for a phenomenological study. The positions held by the participant group had standardized education and experience requirements, which allowed for logical generalization of the findings to the larger population.

The researcher submits the following delimitations for consideration.

- Participation was limited to U.S. DOD employees who were members of the social networking site LinkedIn, who had self-identified as being on assignment in the NCR, and held the rank of GG12 through SES, or the military equivalent. This delimitation was necessary to narrow the population to a sample size appropriate for a qualitative phenomenological study.

- The results of the study were limited to the present time and did not contain long-term analysis.

The researcher submits the following limitations to qualifying results and identifying shortcomings.

- The study was limited to the perceptions of the participants. An individual’s description of an experience is relative to personal perception. The nuanced interactions that occur within social situations are subjective in nature and interpreted through the psychological filter of those experiencing them.
The online delivery of questions did not capture nonverbal cues such as facial expressions, posture, and tone of voice. Clarification of ambiguous responses occurred through email correspondence.

Accurate capture of a phenomenological narrative has a dependency on the articulation skills of the participants. Additionally, the participants’ experiences were time bound, and descriptions of events that led up to the experience were not analyzed (Finlay, 2012; Opdenakker, 2006).

**Summary and Organization of the Remainder of the Study**

New technological advancements have opened up access to sophisticated tools and technologies throughout the world. Terrorists, cyber-criminals, and political adversaries have displayed increasing levels of agility and expertise in the rapid innovation of disruptive technologies, while the pace of innovation within the DOD remains unchanged. The disparity in innovation growth has resulted in a critical need for the U.S. DOD to improve performance if it is to continue to deter war and protect national security (Waller, 2015; Tyson, 2014).

A recent study conducted by the Taiwanese DOD produced empirical evidence that the influence of service cues affected the critical and creative thinking performance of its service members. According to Chiu and Tu (2014), Service cues emphasize differences between military cultures and represent distinct variances in areas such as service identity, ideology, values, ethos, and mission focus. There are gaps in scientific knowledge relative to the applicability of the correlation to other military institutions, and the specific elements within service priming that contribute to the phenomenon.
While service cultures differ between countries, military institutions and career specialties, they share a fundamental commonality in the mission of warfighting. Formation of unified fighting forces occurs through service cue inculcation of warfighters within each military specialty. The service priming process establishes unity of thought, commitment and shared identity to maximize rapid offensive and defensive execution in times of crisis (Redmond et al., 2015). Identification of specific service cues that influence creative and critical thinking could contribute to the improvement of cognitive performance in the defense industry.

The phenomenological inquiry focused on developing an understanding of how the service culture within the U.S. DOD influences the creative and critical thinking performance of its personnel. As the process of innovation requires high levels of both types of thinking to occur, studying factors that influence cognitive performance was relevant to determining what needs to change. The process of thematic analysis and coding facilitated exploration of primary themes and enhanced synthesis of information.

Chapter 2 will establish a framework for the research by providing a synthesis of current literature on the primary themes relating to the dissertation topic. The chapter defines the procedures for the study, the research design, and methodology. Chapter 4 contains a detailed description of the data analysis methodology, provides an in-depth outline of the data analysis and conclusions. Chapter 5 contains a conclusion of the study, a discussion on the research results and a synthesis of findings and recommendations.
Chapter 2: Literature Review

While 50 years of technological advances have driven significant changes throughout the world, the majority of U.S. DOD cultural traditions remain unchanged (Arnaud & Tinoco, 2013). With the advent of global access to sophisticated technology, the prevalence of terrorism and cyber-attacks has increased exponentially (U.S. DOD, 2015; Waller, 2015). The call to increase the pace of defensive innovation has arrived, but the U.S. DOD has been unable to meet the challenge (Waller, 2015; The White House, Office of the Press Secretary, 2015). The purpose of this study was to gain an understanding of how the U.S. DOD service culture influences the creative and critical thinking of its personnel.

This chapter provides a synthesis of published research relating to the research questions. The narrative includes a description of the theoretical framework underpinning the study, the background of the problem, and a synopsis of the gaps in the research to frame the research within the context of the most current knowledge available. The intent of this section is to provide a comprehensive review and analysis of the current body of literature and demonstrate the importance of the research topic.

The thematic organization serves to organize the literature review. The chapter includes the themes deemed most relevant to the study, and contributory subthemes provide a depth of coverage to the existing literature on the topic. The dominant themes relating to the research questions are service culture, creative thinking, critical thinking, and innovation. Exploring subthemes within the literature review extended the breadth of the analysis and led to the consideration of additional areas of empirical research relating to the research topic.
The researcher used multiple tools to find scientific literature for this study. The Defense Intelligence Agency library was the source of the initial data that inspired the focus of this study. The literature was retrieved from multiple academic and scientific databases, including ProQuest ABI/INFORM Complete, ProQuest Dissertations & Theses Full Text: The Humanities and Social Sciences Collection, Academic OneFile, EBSCOhost Academic Search Complete, EBSCOhost Business Source Complete, EBSCOhost International Security & Counter Terrorism Reference Center, Researchgate, Wiley Online Library, Cambridge University Database, APA PsycNET, and Google Scholar. Search terms and keywords used to locate recent and relevant research literature included organizational culture, military work experience, Department of Defense, military, be know do, military leadership, creative thinking theory, critical thinking theory, innovation theory, competing values framework, service priming, organizational culture, DOD culture, workplace culture, military resilience, social fitness, decision-making, creativity models, divergent thinking, authentic leadership, intrinsic motivation, extrinsic motivation, cultural influence on creativity, innovation and millennials, military problem solving styles, DOD strategy, and cyber strategy.

**Theoretical Foundations and Conceptual Framework**

The research questions have three primary focus areas that scholars must examine separately and collectively to capture the true essence of the phenomenon. Three foundational theories provided the basis for understanding and interpreting the nuanced data captured through this phenomenological inquiry: the self-actualization theory (Malsow, 1968), the three-part theory of critical thinking (Cohen, 2000), and the competing values framework (Cameron & Quinn, 2011).
Maslow’s self-actualization theory served as a framework for understanding the components of creative thought and provided guidance on the environmental and psychological conditions that should be present to support creative thinking (Maslow, 2014). Researchers have used the self-actualization theory as the theoretical foundation for numerous scientific studies, including several studies relevant to service cultures, such as employee performance, management models, human resources, and organization culture (Botana & de Oliveira Costa Neto, 2014; Jerome, 2013; Yamona Thevey, 2014). The foundational premise is that a critical component of creativity is the ability to execute without fear of ridicule or strangulation of ideas. The presence of such fear or suppression within the culture of an organization could result in a lack of creative thinking and, therefore, a lack of innovation. The self-actualization theory arises from the hierarchy of needs concept that divides human needs into five stages of a pyramid (Maslow, 1943). The most basic physiological requirements are at the base of the pyramid, followed by safety, love, esteem, and self-actualization. According to Maslow, the conditions necessary for creative thinking exist within the self-actualization phase. Therefore, optimal levels of creative thinking occur after individuals meet the most basic needs such as food, shelter, and safety.

The focus of the study was on understanding how service culture influences creative and critical thinking. Building on empirical data that indicate a correlation exists, researchers must determine how the phenomenon occurs. Within the self-actualization framework, there exists an argument that an individual’s ability to think creatively is not optimal until he or she is self-actualized. Maslow indicated that creative thought naturally
occurs when a person is free from overt suppression from external sources and able to exercise self-expression.

Of particular interest in the self-actualization theory is the role of safety in creative thinking. Notwithstanding the immediate risk of physical harm during wartime, psychological safety considerations are relevant both on and off the battlefield. Within a team environment, for example, the level of perceived safety for interpersonal risk-taking affects an individual’s cognitive performance (Edmondson, 1999). In practice, people often associate safety with job and financial security. In the private sector, an individual may be reluctant to take risks because the fear of job and income loss is significant. Failure may result in lost opportunities for advancement, and potential social ramifications such as loss of respect. In the U.S. DOD environment, failure has harsher consequences. Failure may result in a dishonorable discharge from the military, which has lifetime implications. In such circumstances, a service member would lose his or her position, benefits, and income and could not work for any organization with government affiliation, nor hold any government contract for the rest of their life. More common is the loss of career advancement. For a military member, failure to advance can mean a premature end to a military career or a forced retirement at a significantly lower pay rate than desired. For U.S. DOD civilian personnel, the risks are not as dire, but the negative implications are still significant. For these reasons, the element of fear was an important factor to consider when exploring the influence of the U.S. DOD service culture.

Cohen’s three-part theory of critical thinking (Cohen, 2000) also framed the study. Scholars discuss the concept of critical thinking extensively in academia. A single keyword search in the EBCOhost ABI/INFORM Complete research database yielded
354,830 results, and the same search in Google Scholar produced over 3.5 million results. The three-part theory had a particularly apropos foundation for this study, as it afforded a clear definition and delineation of critical thinking and its applicability to the U.S. DOD organizational construct. Cohen defines critical thinking as a cognitive skill that uses an open-minded approach to recognize a problem, consider existing knowledge, evaluate the accuracy of new information, and analyze the composite of information to render a logic-based decision (Cohen, 2000).

Cohen’s theory has served as a foundational framework for scholars of military phenomena, including critical thinking education, training, and human resource performance (Burke, Grossman, Salas, Shuffler & Thayer, 2015; Boury-Brisset & Irandoust, 2005; McKinley, 2005). The three-part theory of critical thinking enhanced the analysis of a phenomenon, as it provided guidance on the cognitive processes and behaviors that must be present for critical thinking to occur. Analysis of the framework relative to U.S. DOD service culture enabled a consideration of whether the service culture optimizes, suppresses, or does not influence the conditions established by the theory.

Critical thinking is fundamentally the consideration of alternative possibilities to meet an objective (Cohen, 2000). Based on the theory, if the optimization of critical thinking is to occur, the service culture and its supporting organizational structure must support and reward the act of questioning existing paradigms and standard solutions. Using this theory as a foundational premise pointed the lens of inquiry at the influence of service culture in the operational environment that establishes implications for questioning the status quo. Within this context, a phenomenological design was
particularly appropriate, as it provided insight into the perceived consequences for employees engaging in critical thinking.

The competing values framework (Cameron & Quinn, 2011) served as a guideline for assessing the cultural focus of an organization. Researchers use the framework widely and discuss it frequently. A simple Google query produced 37,600 entries referencing the principals associated with competing values, while a narrowed search in an academic database located 4,880 additional studies. The model uses 39 effectiveness indicators to determine an organization’s placement within four dominant categories across two dimensions. The framework includes organization-specific data to determine underlying assumptions and to identify the dominant culture type.

The dominant categories include the clan culture, characterized by a high degree of flexibility and concern for individuals; theadhocracy culture, characterized by a risk-taking innovative environment; the market culture, characterized by a competitive, results-driven focus; and the hierarchy culture, characterized by a formalized structure with highly defined roles and dependable service. The four categories include competencies that serve to frame the focus of the organization. The 39 effectiveness indicators contribute to the primary category and identify specific attributes viewed positively within the organizational culture. The theory holds that congruence exists between an organization’s competencies and its organizational culture. Individuals who demonstrate competencies in line with the dominant culture tend to be successful and are rewarded for their work, which in turn reinforces the dominant culture.

The framework provided a foundational understanding of the as-is condition of organizational culture. Understanding how employees perceive the service culture of the
U.S. DOD was a key component of this research. The study involved applying the data gathered to the competing values framework to identify the dominant culture and competencies that align with the U.S. DOD service culture. The description of attributes required for success within each culture provided insight into implicit reward and punishment factors that may contribute to the suppression of creative and critical thinking and ultimately point to cultural areas that organizational leaders can alter to improve innovative performance.

**Review of the Literature**

The purpose of this study was to understand how service culture influences the creative and critical thinking performance of its employees. This chapter includes a review of the themes derived from the literature related to service culture, creative, critical, and innovative thinking. Correlations exist between Taiwan’s DOD service culture and its employees’ creative and critical thinking performance (Chiu & Tu, 2014). These two cognitive processes are a fundamental component of innovative production, and the newly discovered correlation includes numerous opportunities for the expansion of scientific knowledge.

An awareness of the critical need for the employees of the DOD to increase the pace of innovation was the driver for this study, and a gap exists in the literature regarding the reasons for their inability to do so. An examination of the literature indicated that several important research issues relating to the central themes of this study remain ambiguous, unexplored, or conceptually vague. Addressing two central tensions served to facilitate the exploration of the relationships between these topics.
Intra-individual versus interindividual cognition

The first tension relates to whether critical and creative thinking performance and the innovative production resulting therefrom, manifests at the individual or organizational level (Hennesy, 2014; Wang, 2012). Critical and creative thinking researchers usually describe an individual’s ability to manifest optimal levels of cognitive performance, while innovation theory researchers more often describe organizational mechanisms to enable innovation (Anderson, Potočnik, & Zhou, 2014; Frese, Pace, & Rank, 2004). Organizational mechanisms may be necessary to enable innovation at the individual level while optimization of critical and creative thinking at the group level may be vital to the usefulness of the organizational mechanisms.

Scientists and scholars have focused considerable attention on creative and critical cognition, as well as on innovative production. Although the processes manifest differently, scholars have indicated that the boundaries between the concepts are unclear (Anderson et al., 2014; Frese et al., 2004; Kurt & Yahyagil, 2015). Understanding how service culture influences these aspects of cognitive performance required a concrete grasp of the synthesis of intra-individual cognition and interindividual performance.

Service culture versus organizational culture

The second tension relates to ambiguity between the concepts of service culture and organizational culture. In the majority of literature, researchers have positioned the two aspects of cultural phenomenon as the same concept, with service culture viewed through the broad lens of organizational culture theory. For the purposes of this study, service culture served as a theoretical concept distinct from organizational culture theory.
Organizational culture is a broad field of study that encompasses a combination of beliefs, values, and expectations held by individuals and groups that create its social and psychological environment and heavily influence the actions they take (Chatman, 1989; Jaskyte, 2010; Schneider, 1987; Terborg, 1981). Service culture differs from organizational culture in the uniqueness of the environment and the complete immersion of the individuals within (Arnaud & Tinoco, 2013; Kolditz, 2009). The inclusion of service priming is an important distinction between organizational culture and service culture. Service priming is the continuous focus on the whole-person adoption of codes of honor, morality, and duty, combined with the influence of stereotypes, attributes, and behavioral expectations commonly associated with the DOD (Chiu & Tu, 2014). Service priming is immersive and life changing, begins on the first day of indoctrination, and continues until retirement (Kolditz, 2009; U.S. Army, 2004).

Researchers have studied organizational culture and theory broadly in business contexts, but much less within the DOD environment. The majority of organizational culture studies take place in the private sector, and the models developed from such studies are often not effective when carried over into nonprofit organizations (Jaskyte, 2011). The disparity in focus is problematic, as the need for creative, critical, and innovate thinking has gone unmet under this approach and bear reassessment using theory targeted to the uniqueness of the DOD’s immersive environment. The literature provides little, if any, resolution to the pervasive and consistent inapplicability of the transference of many organizational constructs and practices from the private sector into DOD organizations.
Organizational culture

The broad concept of organizational culture and its definitions, scope, and theories provided a stable platform from which to explore the more focused area of service culture. The literature is rich with research in this area, as scholars have sought to create meaningful frameworks from which to understand the influence of the values, beliefs, and norms held by an organization (Denison & Mirsah, 1995), and the degree to which individuals share or adopt them (Jaskyte, 2010; Jaskyte & Dressler, 2004).

Culture is a complicated concept to define, as it has many different meanings in multiple disciplines (Dingwall & Strangleman, 2007). Organizational culture scholars have applied multiple variations of meaning, but there is little agreement on a single definition (Arnaud & Tinoco, 2013; Bruno-Faria & Fonseca, 2014; Cameron & Quinn, 2011; Denison & Mishra, 1995; Ghasemi, Keshavarzi, Tabriz, & Zandhessami, 2014; Marino, 2014; Monteiro, Pissarra, Sousa, & Walton, 2014; Yamona Thevey, 2014). Early theorists defined organizational culture as a collection of commonly accepted beliefs and values held by a group of people at a particular time (Buckley, 1967; Burns & Stalker, 1961; Likert, 1961; Lawrence & Lorsch, 1967). More recently, Schein (2010) theorized that organizational culture was a pattern of shared basic assumptions learned by a group as it solved its external adaptation and internal integration problems that worked well enough for leaders to consider them valid and therefore taught them to new members.

Although the definitions are not universal, certain elements appear with relative consistency throughout the literature. A recurring theme is that individuals tend to classify themselves into categories such as race, ethnicity, gender, and organizational
affiliation (Caldwell, Chatman, & O’Reilly, 1991; Carver, 2012). The combination of beliefs, values, and expectations held by individuals and groups within these categories creates an organization’s social and psychological environment and heavily influences the actions its members take (Arial et al., 2013; Cameron & Quinn, 2011; Jerome, 2013; Su & Zhou, 2010).

Scholars from multiple disciplines have examined organizational culture in individuals and groups from the perspective of society, government, public, and private institutions. Many of the dominant themes and theories underpinning the research share similar elements, but differ in the degree of importance and influence assigned. The differences in perspective emerge in the lack of consensus on the definition, the nature of the influence of organizational culture on performance and best practices for research design.

At the inception of academic research in organizational theory, and for many years thereafter, quantitative inquiry gained acceptance as the optimal approach for studying organizational culture. Since that time, qualitative scholars have challenged this theory by arguing that using quantitative research reduces the scope of variables too much and ignores pertinent information in the interpretation of the data (Frost & Martin, 2011). No consensus currently exists on the best methodology for analyzing organizational culture. Examples of both quantitative and qualitative models are prevalent in the literature, but neither approach has emerged as dominant.

Cameron and Quinn (2011) contended that quantitative methodology is most suitable for capturing and analyzing the elements of organizational culture. The scholars developed the competing values framework as a diagnostic tool for analyzing
Researchers have deployed the framework broadly in organizational studies in general and more narrowly in the military context (Allen et al., 2008; Cameron & Quinn, 2011). Cameron and Quinn purported that researchers can analyze the culture of an organization by using spectrum modeling. In the framework, analysts chart 39 measures of performance graphically across four organizational dimensions to determine the strength of an organization’s focus on areas such as flexibility, stability, internal focus integration, external focus, and differentiation. Categories with the highest scores indicate the areas most valued by its members. The researcher uses the assessment scores to place the organization into one of four categories: clan, hierarchy, market, and adhocracy. Each category has a description of dominant features that influence organizational behavior and outcomes. The Organizational Culture Assessment Instrument (OCAI), which is a diagnostic tool that captures data quantitatively, and relates the data to a comprehensive description of the environmental drivers of the culture, complements the competing values framework.

Theorists have addressed the criticism levied against quantitative research methods by experimenting with hybrid models that qualitatively capture the nuances of organizational culture and convert the data into quantifiable information. Staadt (2015) explored the use of an integrated theoretical problem-solving model that combined the soft systems methodology with the configuration model of organizational culture. Researchers use the configuration model of organizational culture to examine the relationships between strategy, structure, operations, and social dynamics from a theoretical standpoint. The soft systems methodology includes a three-tier analytic method to examine an organizational problem, conduct social system and political
analysis, and generate a solution. Staadt collected data between 2007 and 2013 and analyzed the data both manually and through the data visualization ATLAS.ti tool. Staadt observed that applying the soft systems methodology to problem-solving has challenges due to the power structure of an organization. An organization’s leadership often generates the intervention required to execute problem-solving, which can be problematic if the leadership is part of the problem.

Staadt (2015) concluded that the examination of individual power gleaned from the soft systems approach further enhances the analysis that the configuration model of organizational culture produces. The scholar recommends using the constructs simultaneously as an amalgamated theoretical model. Use of a nuanced framework for organizational assessment may be particularly applicable for identifying elements within an organization’s culture that may be influential on employee performance.

Scholars have sought to understand the influence of culture on organizational outcomes by organizing the values, beliefs, and norms into analytic frameworks (Denison & Mishra, 1995). Schein (2011), a proponent of qualitative analysis, designed a conceptual model of organizational culture in the form of a multitier pyramid. At the top of the pyramid are the observable artifacts of organizational culture. In this context, the term *artifact* means the manifestations of culture that are observable through qualitative research, such as stories and jargon, rewards and punishment, the formality of dress, and physical arrangement of organizational space. The middle layers contain the norms and values of the organization. Norms are the unwritten rules that serve to guide members in knowing the expectations and how to behave within the organizational construct. The bottom layer contains the underlying assumptions that support the norms and values of
the organization. According to Schein, to affect change in the tangible manifestations of an organization’s culture, leadership must identify and address the intangible motivators at its foundation.

Chatman (1989) studied organizational constructs to determine whether a model could predict person–organization fit. The researcher focused on integrating the personal behavioral characteristics with a predictive model for situational application to determine whether an individual would be the best fit for a particular role within an organization. The researcher used the Q-sort method and combined it with the Organizational Culture Profile (OCP) tool to develop an integrated predictive framework. Chatman noted that a major purpose of the tool is to identify candidates who have values that are compatible with the organization, as well as to identify those who do not. Using this model, according to Chatman, helps identify discrepancies in value systems that leadership could focus on to improve the person–organization fit.

One of the most intriguing ideas in organizational science is the concept that targeted manipulation of cultural elements within an organizational environment could result in correlating changes in organizational performance. The potential within this concept has led academics, scientists, and business leaders to expend considerable energy on trying to determine how to engineer cultural change and influence employee behaviors (Findler, MorBarak & Wind, 2007; Sikorska-Simmons, 2006). Despite the increasing interest in this area, researchers have not yet substantiated the concept in scientific literature, although it has been the focus of numerous inquiries and the topic of many modern business and managerial books.
Early attempts to manipulate organizational culture came into prominence in the 1950s with the introduction of value engineering. The value engineering methodology involves using creative techniques to locate and address gaps and inefficiencies within an organization. According to Peters and Waterman (1982), an effective manager can apply value engineering to shape organizational culture by using jargon, policies, and rituals. Proponents of the methodology contend that a successful endeavor will result in a unified organization in which all employees enthusiastically embrace the culture as their own (Deal & Kennedy, 1982; Ghasemi et al., 2014; Peters & Waterman, 1982).

Ghasemi et al. (2014) conducted a study on using value engineering in conjunction with Six Sigma techniques to determine whether a superior approach existed to affect change. Six Sigma is an analytic approach to process improvements that came into prominence in 1987, and its use in businesses has become common. The researchers analyzed the processes of an industrial food company by first using value engineering and Six Sigma independently and then by conducting a separate analysis by merging the two methodologies in areas where techniques from one discipline were missing in the other. The combined methodology produced superior results by reducing costs by $154.20 per cycle and reducing cycle time by 294.5 minutes. Ghasemi concluded that the optimal methodology for improving productivity and performance was to assess and alter aspects of the organizational culture in parallel with process optimization efforts.

A complementary theory to value engineering emerged in the form of the integration perspective. Theorists who support this conceptual framework view organizational culture as a unified concept with little ambiguity. If subcultures exist within an organization, or if individuals do not share the views, values, and norms of the
organization, they attribute them to individual divergence or anomalies and not as part of the culture. As with value engineering, integration theory theorists purport that an organizational leader can deliberately modify an organization’s culture in accordance with his or her values, so employees adopt it as their own (Frost & Martin, 2011).

The differentiation perspective evolved in parallel to the integration theory and shared a similar ideological view of organizational culture but diverges significantly on how to study, analyze, and manipulate it. Unlike integration theory, the differentiation perspective views nonunified aspects of culture to be normal, rather than singular anomalous occurrences of divergent or maladjusted behavior. Advocates of differentiation theory support the in-depth analysis of organizational subcultures, the exploration and discovery of areas of public agreement and private disagreement, and the reality of cultural experiences and practices versus written policies (Alvesson, 2016; Birkinshaw, Probst, Raisch, & Tushman, 2009; Jansen, Tempelaar, Van den Bosch, & Volberda, 2009; Young, 1989). According to differentiation theory, occupational subcultures outside of the firm can influence functional subcultures within an organization, as in the case of certain professions exhibiting similar behavior patterns unrelated to group affiliation (Gregory, 1983; Patel, 2015). This concept was relevant to the study of DOD service culture, in which numerous subcultures exist, segregated by branch, agency, unit, and career specialty, but are still under the influence of the greater organizational culture and construct.

The relationships between job satisfaction, performance, and organizational culture have generated a significant amount of scholarly interest. The potential to make significant productivity and monetary contributions through organizational change has
driven industry leaders to fund multiple studies. Researchers have determined a positive relationship exists between specific organizational concerns such as human resource selection and retention and the fit between personal values and corporate culture. Adewale and Adeniji (2013) conducted a study to examine the influence of organizational culture on human resource policies and practices. Two hundred thirty-seven university employees completed structured questionnaires exploring their perception of personal value to organizational culture fit, recruitment practices, compensation, and performance management. Results of the data analysis revealed positive correlations between recruitment and organizational values, beliefs, and practices. The scholars observed that the relationships might exist because potential employees deliberately aligned themselves with the corporate culture after recruitment. Adewale and Adeniji did not rule out the possibility that the organizational culture evolved based on the values, beliefs, and norms of the employees, rather than those of the management.

Researchers have positively correlated the concepts of empowerment and performance with employee perceptions of organizational culture. Ditchburn and Hames (2014) surveyed 119 participants from multiple organizations to explore the relationships between affective commitment, work engagement, and exit. The scholars used the concepts of organizational voice, which refers to communication, and voice climate, which refers to the perceptions about practices relating to communication within the organization. Employee perceptions of safety, encouragement, and efficacy served as the measures of voice climate. Statistical analysis revealed positive correlations between organizational commitment and voice climate. Safety and encouragement had a negative
The perception of efficacy did not produce significant correlations with any of the factors. The scholars noted that a positive perception of voice climate might indicate that leaders routinely seek the opinions and input of employees. Negative perceptions of voice climate relate to issues with fear of reprisal or frustration with communication barriers. The scholars concluded leaders could maximize retention and employee productivity by ensuring that organizational culture supports behaviors and practices that make employees feel like they are making a positive contribution.

The influence of leadership on organizational culture is a topic that generates ongoing study. Behaviors such as employee disengagement and negative attitudes can result in significant organizational expenses. Barbour, Biggs, and Brough (2014) studied the efficacy of a leadership development intervention programs for increasing employee well-being. The program involved an extensive 360-degree review, followed by participatory intervention from subordinates to supervisors monitored and coached by a facilitator. Eight hundred fifty-three employees from Queensland Police Service participated in the study, which involved evaluating perceptions of job demands, strategic alignment, work-culture support, organizational leadership, job satisfaction, work engagement, turnover intention, and psychological strain. Data collection occurred before and after the intervention programming. There were no statistically significant correlations between job demands, strategic alignment, job satisfaction, and work engagement. There were significant differences in the variables’ supportive leadership, $F(1, 366) = 4.46, p = .04; \text{partial } \eta^2 = .01$, and work-culture support, $F(1, 366) = 4.46, p = .04; \text{partial } \eta^2 = .01$. Barbour et al. observed that the perceptions surrounding leadership efficacy significantly improved after the programmatic intervention. The significantly
different employee satisfaction scores generated by improvements in leadership
performance may be a significant factor in understanding the service culture of the DOD.

Researchers have studied organizational culture broadly over the past 70 years,
but the nuanced nature of the phenomenon is highly complex, and researchers continue to
discover new avenues for exploration. Variances in definition, best practice research
methodology, and the level of potential influence on employee performance remain a
matter of debate. The ability to affect performance change by altering organizational
culture is a common theme among scholars and scientists, though the best practices for
doing so remain undecided.

**Service culture**

The DOD has profoundly different influences and motivators than its private
sector counterparts that scholars must take into consideration to understand the influence
of service culture on employee cognitive performance (Carver, 2012; Chiu & Tu, 2014).
Organizational theory does not capture key fundamental dimensions of influence within
service culture, such as the commitment to duty. Within this context, the term *sense of
duty* means “the degree to which an organization feels a profound obligation and
allegiance to support a mission or cause” (Arnaud & Tinoco, 2013, p.38).

Chiu studied service culture and coined the term *service priming* to describe the
unique influence of the immersive training and stereotype adoption prevalent in the
DOD. Chiu and Yau (2010) observed that the DOD stereotypes perpetuate service cues
that affect the cognitive performance and behavior of DOD employees.

In 2014, Chiu and Tu produced seminal work on the effects of service priming on
the creative and critical thinking performance of officers in the Taiwanese military. The
researchers used the Chinese Remote Associates Test (CRAT) to evaluate creative and critical thinking performance in separate branches of the Taiwanese military. Chiu and Tu created the separation to explore individual service branch performance within the totality of the DOD service culture to determine whether the variations of service priming between branches had any effect on employee cognition. The scholars hypothesized that employees of the Taiwanese Army and Air Force perform differently in these cognitive areas, not because of actual ability, but because of the differences in the service priming of each branch.

The data from a one-way analysis of variance (ANOVA) reflected a significant effect for service priming, $F(2, 65) = 4.76, \ p = .01$. The mean of the three conditions was neutral, $M = 15$ ($SD = 4.89$); Air Force priming, $M = 20.09$ ($SD = 1.78$); and Army Priming, $M = 17.42$ ($SD = 3.7$). The results support the hypothesis that Air Force priming improved creativity scores, while Army priming neither improved nor degraded them. Chiu and Tu (2014) conducted additional experiments to explore the specific effect of service priming on critical thinking performance to test the hypothesis that Army priming increased and Air Force priming decreased critical thinking. The results indicated that critical thinking performance improved in the Army priming condition but not in the Air Force priming condition. The researchers observed that the priming between the two branches was sufficiently different to have a distinct effect on cognitive construction and recommended further exploration of the nuances of service culture within other government organizations (Chiu & Tu, 2014).

Lockheed Martin, a company that counts the DOD as one of its primary customers, sponsored a qualitative study to explore the influence of service culture on
private sector organizations in the defense industry. Through observation, interviews, and discussion groups, Arnaud and Tinoco (2013) determined that the sense of duty dimension permeated all other U.S. DOD cultural dimensions due to the grave significance of the mission it supports. The researchers concluded that the defense of the free world, the protection of U.S. citizens, the preservation of the American way of life, and the protection of the lives of U.S. service members is a mission of such profound importance that it fundamentally changes the way members of the defense industry think.

Winn (2014) disagreed with the premise that the U.S. DOD is significantly different from its civilian counterparts, contending that private sector organizations depend on the commitment from all levels of the organization, just as U.S. DOD organizations do. Winn hypothesized that personal motivators were the strongest predictor of the U.S. DOD employee’s code of ethics and behavior, rather than organizational constructs. In support of this premise, Winn sought areas of complementary best practices garnered from published military research to apply directly to the private sector. Winn was unable to validate his hypothesis, as his exploratory efforts found insufficient data and a lack of published DOD research to support his supposition.

Despite Winn’s proposition that there is scant research on the U.S. DOD, a review of the literature revealed several studies, articles, and theoretical models focusing on exploring the DOD. Allen et al. (2008) used the competing values framework as part of a hybrid model to analyze U.S. DOD service culture. The authors noted that the U.S. DOD includes multiple subcultures that its members strongly identify with, which can result in in-group collectivism. Pervasive elements within the subcultures enhance the dominant
values of the overall organizational culture, as well as others that deny the values, leading to areas requiring intervention. Prominent artifacts of DOD subcultures include the jargon, slogans, and creeds of different specialties, such as the U.S. Army special forces mantra, “Rangers lead the way,” the U.S. Marines slogan, “The few, the proud, the Marines,” or the U.S. Army warrior ethos, “I will always place the mission first. I will never accept defeat. I will never quit. I will never leave a fallen comrade.” According to Allen et al., the phenomenon of in-group collectivism can become a detriment to success if the individual members become excessively absorbed in their subculture and become close-minded to outside information and ideas.

Cacioppo et al. (2011) hypothesized that the service culture of the DOD forms a social network for its members comprised of small units with internal dynamics that encourage or discourage trust, acceptance, and diversity. The scholars purported that these small units have the potential to affect the mental health of the service member and could institute positive changes. In 2011, the scholars conducted a translational research study to explore potential methods for improving social resilience in the U.S. DOD. They defined social resilience as a trait that both enables individuals and groups to foster positive interpersonal relationships in high-pressure situations and facilitates endurance and recovery from trauma and stressors. After analyzing the data, the scholars proposed nine techniques integrated into an immersive group-training program to improve social resilience within targeted components of the U.S. DOD environment and concluded that the integration of these techniques could alter the dynamics extant in the service environment and improve the performance of its members.
Studies on second- and third-order effects of DOD experiences have produced results that indicate that DOD service may influence certain cognitive functions, such as decision-making. Horowitz and Stam (2014) conducted a metadata study on the decision-making records of 2,500 heads of state from 1875 to 2004 to analyze the tendency of government leaders to choose aggressive responses when making decisions. The researchers found that prior service members without combat exposure were 43% more likely than were those with combat experience to initiate decisions advocating aggression. Although the researchers identified a narrow effect of the influence of combat service, it may have the potential for broader implications as this type of lived experience is common within the U.S. DOD and is, therefore, likely to form some of the norms and values of its service culture.

Negrusa and Negrusa (2014) examined the long-term effects of deployment on U.S. DOD service members. The life-changing nature of deployment during wartime has resulted in a significant portion of the service members experiencing posttraumatic stress disorder. The complete list of long-term psychological effects of this phenomenon is unknown, but the likelihood that its presence influences U.S. DOD service culture is high. The scholars examined the data on the post-deployment mental health of service members and service member divorces and found statistically significant correlations between the two. Additionally, statistical data indicated that approximately 32% of enlisted service members and 19% of officers experienced depression after returning from deployment, and 27% of enlisted and 14% of officers had psychological screenings indicating positive results for mental health concerns. As the DOD has actively served in
13 consecutive years of war, the relevance of this study and the potential influence of mental health issues on the service culture of the DOD are clear.

According to Jaskyte (2010), the beliefs, values, and norms commonly held by members of an organization heavily influence the actions they take. Cunningham (2012) conducted a phenomenological study on U.S. DOD leadership’s use of intuition in decision-making to determine whether it was a pervasive element of service culture. Cunningham noted that senior DOD leaders believed that intuition was a reliable decision-making tool, and in some cases, preferable to critical thinking, evidence-based, or data-driven problem-solving. The leaders identified factors such as large organizational size, hierarchical structural complexity, and resource and time limitations as rationales for the reliance on intuition over research and analysis and believed that using intuition aligned with the DOD goal of achieving greater agility and innovative capability.

Morgan and Simonetti (2014) noted that a key component of service culture is the intensive immersion training aimed at shaping the personality traits, habits, and ethos of service members. Combat veteran Lieutenant Colonel Daniel Morgan observed that 13 consecutive years of war resulted in the inclusion of service members who were not necessarily well suited to the stressors of war. According to Morgan and Simonetti, DOD leaders must conduct continuous monitoring to mitigate this issue.

Morgan and Simonetti (2014) explored the viability of using the Soldier Risk Tool (SRT) as a means to track and manage employee risk indicators. Researchers use the SRT to gather a member’s background information, including risk-taking behaviors, family composition, marital issues, and personal friendships. The data are used to create
a psychological assessment to tailor the program to provide tailored training to shape desirable behaviors and increase resiliency levels. Collecting medical, psychological, and personal information is standard in the DOD. Morgan and Simonetti concluded that leaders could use the data to tailor training, evaluation, and personal behavior accountability to build an immersive experience deliberately constructed to evoke maximum influence on employee cognition. The SRT facilitates service priming manipulation adapted to individual needs to alter cognitive performance. The SRT may be relevant in deepening the understanding of how service culture influences cognition in general and creative, critical, and innovative performance in particular.

Carver (2012) conducted a quantitative study on a population of DOD members stationed in Japan to explore the relationship between DOD service culture and readiness to change. Forty-five military officers completed surveys on attitudes relating to consistency, adaptability, organizational culture, involvement, readiness to change, and mission. Carver found a statistically significant correlation (all $p < .01$) between attributes of service culture and a service member’s readiness to change and concluded that DOD leaders could increase an employee’s readiness to change by altering elements within the DOD environment to facilitate the necessary growth.

Marino (2014) conducted a quantitative study on the relationship between resiliency levels, problem-solving styles, and implicit beliefs in U.S. service members. The sample consisted of 100 West Point cadets. Evaluating resilience involved using the Connor-Davidson Resilience Scale, assessing problem-solving styles involved using the VIEW methodology, and evaluating the implicit beliefs of the cadets involved using a hybrid model of techniques created by the researcher. Multiple regression analysis
revealed that implicit beliefs about cognition and emotion affected resilience at a .05 level of statistical significance. The influence of service priming on the current cognitive state of the sample was unclear. Marino posited that leaders could use service priming to affect the implicit beliefs of service members positively, with the expectation that there would be a positive correlation to increasing resiliency.

The aim of service priming is to holistically shape the individual into an ideal composition. According to Koldtiz (2009), the fundamental focus of psychological aspects of military training is codes of honor, duty, and selfless service. These elements permeate the culture of the entire U.S. DOD and have a particular impact on its leadership. The adoption and execution of this cultural ideation by military leadership have a particularly high level of gravity, as leaders expect service members to follow lawful orders without question (U.S. Army, 2004). Due to the life-and-death nature of the mission, leaders must consistently demonstrate these attributes. Failure to do so results in ineffective leadership as members will not easily follow the mistrusted leader.

Arial et al. (2013) conducted an interview with Lt. General Helmly, a U.S. Army Officer Candidate School Hall of Fame member, to gain insight into the influence of leadership in the DOD. Lt. General Helmly observed that failures in leadership seldom take place in a vacuum. He noted that there is a common DOD practice of continually reassigning, rather than relieving, failed leaders. This practice, according to Helmly, is a failure of not only the leader but also the DOD organizational construct that validates and perpetuates the bad leadership in an endless cycle. Helmly purported that successful leaders, particularly those at higher levels, must be innovative, courageous, insightful, and energetic in sensing and defining problems before they occur and in developing
solutions to mitigate them. He explained that senior civilian officials inside the DOD who do not wish to acknowledge a problem, particularly if they believe it will make them look bad, often do not practice these management skills.

Understanding the role of DOD leadership is a critical component of the service culture environment. Due to the life-and-death nature of the decisions DOD leaders make, the gravity and importance assigned to leadership are particularly high. Exploring how the actions of leadership contribute to the service culture was an important element of this study.

Within U.S. DOD leadership, certain roles are technical rather than tactical. The influence held by these roles is an important factor within the U.S. DOD construct, as the decisions made by these individuals further shape the organizational environment. Khallaf and Majdalawieh (2012) explored CIO competencies within U.S. federal agencies. Certain technical and managerial elements of the CIO role are common to both public and private sectors, while others are not. Unique factors include higher levels of regulation, frequent changes in mission, frequent changes in senior leadership, less flexibility and conflicting priorities due to multiple administrative oversight agencies. The scholars used quantitative analysis to evaluate key measurable elements of IT performance. The results indicated that there was a positive correlation between the challenges faced by private and public CIOs, but the level of importance of the challenges was significantly different. Khallaf and Majdalawieh observed that the organizational distance between the CIO and the director was significant in determining the amount of strategic influence that the CIO would have. With the shifting role of technology, the influence of the CIO within the U.S. DOD is an important consideration.
The CIO can affect cultural attitudes relative to innovation, technology, and processes that can be pivotal in shaping the organization.

Researchers have approached the analysis of DOD service culture from multiple vantage points. Industry analysts have sought to identify best practices to apply to the private sector (Arial, Hiatt, & Quinet, 2013; Koldtiz, 2009), psychologists have endeavored to determine areas of influence that could help to improve mental health and resiliency (Morgan & Simonetti, 2014; Negrusa & Negrusa, 2014). Academics have studied the efficacy of immersive training techniques to understand its application in other areas (Morgan & Simonetti, 2014). Unlike the broader study of organizational culture, the researcher could find no studies demonstrating that the DOD service culture had no influence on employee cognition. Allen et al. (2008) noted that although there are larger organizational values and ethos that are common in the DOD, there are also multiple divisions with unique subcultures. Despite the distinctive subcultures, mission criticality and immersive training appeared to be common in all areas of the DOD and served to form a foundational premise for this study.

Innovation

With rapid global and technological changes, interest in innovation has been steadily growing, but the lack of clarity and commonality of definitions may be part of the reason that organization leaders, including in the DOD, often struggle with its implementation. Within the literature, researchers often confuse the terms innovation and innovative thinking with the terms creativity and creative thinking. Although the terms have certain cognitive processes and outcomes in common, they are not the same thing. A careful examination of the literature revealed multiple scholarly attempts to define the
terms, but no consensus on a universally accepted definition. The notable discrepancy in the assumption that creative and innovative thinking are the same thing is the omission of the critical thinking component that is fundamental to the innovation process. Innovation includes the processes of critical and creative thinking to develop new ideas and solutions that are viable and fact based. Innovation pairs creative thought with facts, logic, and questioning of the status quo (critical thinking) to produce useful results.

The concept of innovation is complex, as it is both a process and a result comprised of equally complex cognitive behaviors such as creative and critical thinking, as well as environmental factors (Dyer & Gregersen, 2011). The literature includes many articles, commentaries, policies, and press releases on the need for greater innovation in the U.S. DOD (Tyson, 2014; Waller, 2015, The White House, Office of the Press Secretary, 2015; Wong, 2002). Scientific and business literature contain numerous studies conducted for the sole purpose of determining the optimal model for creating and supporting an innovation culture, but no one has provided a definitive answer to the question. Although the dearth of innovative production has received widespread attention, a clear roadmap for creating an innovative culture within the U.S. DOD remains elusive.

Waller (2015) conducted multiple in-depth interviews with U.S. service members to gain an understanding of the reasons for the lack of innovation in the DOD. He observed that many service members held a limited belief that leaders would use their innovative ideas due to a lack of trust in senior leadership and the bureaucratic nature of the organization. Waller concluded that if the service culture and environment in which these individuals work can be effectively altered to remove unnecessary barriers and
support the innovation process, then the potential to create sustainable new solutions will substantially increase. The issue of trust is a recurring theme within the literature. According to Bruno-Faria and Fonseca (2014), a trusting relationship between managers and employees is critical to nurturing an environment conducive to innovation. Employees need to feel emotionally secure and empowered to exercise flexibility within the bounds of their mission requirements to test out new ideas and processes.

Adams, Ives, and Junglas (2013) studied the phenomenon of grass roots innovation efforts in the U.S. Army by conducting a case study of deployed soldiers in Afghanistan who developed their own technology in the field rather than wait for an eventual solution to mitigate their immediate danger. Despite the fact that the innovative tool that the soldiers created was highly useful in the field, the DOD neither rewarded nor acknowledged the contribution. The scholars noted that the bureaucracy in the DOD does not encourage innovation.

Without a working solution in place, some DOD members have attempted to remedy the situation on their own. According to Adams et al. (2013), a younger generation of military and DOD civilians who are entering the forces with greater technical skills than prior generations are circumventing the organizational constructs of large bureaucratic organizations in the DOD to some extent. These individuals often grow impatient with slow and cumbersome processes and use their personal devices, smart phones, and other easily accessible technologies to create personalized, innovative solutions. Concurrently, DOD service culture is experiencing internal challenges as organizational leaders retire and the portion of the DOD population comprised of millennials grows larger in comparison to prior generations. High-ranking military
leaders have noted that the influx of millennials may be an avenue to increase strategic agility, but caveat that leaders must fully incorporate the creative power of the millennial generation into DOD culture (Hinote & Sundvall, 2015). The implementation of this acceptance has been difficult to execute due to traditional cultural barriers negating bottom-up efforts (Waller, 2015).

According to Anderson and Potočnik (2012), encouraging and cultivating innovative individual performance may be somewhat hindered by the fact that organizations do not widely use performance measurements and objectives for innovation. Anderson and Potočnik explored the use of a 360-degree review as a mechanism for feedback on individual competence in this area. Two hundred ninety-six individuals from the fields of human resources, finance, marketing, management, and operations participated in the study. Anderson and Potočnik observed that there were significant variances between scores from different sources. Target individuals rated their innovation competency significantly higher compared to peers, direct reports, and supervisors, $t(31216) = -11.71; p < .01; d = -.59$. The scholars noted that researchers collect much of the current research on innovation through self-reporting mechanisms. Based on the broad discrepancy between self-assessment and observer ratings, researchers may base many studies upon false assumptions. Anderson and Potočnik concluded that the development of an accurate assessment tool might be beneficial to identifying and developing an individual’s core competencies in this area.

Aerts, Isaksen, and Isaksen (2009) purported that creative thinking and innovative performance required a fit between individual preferences and working environments. The scholars studied the perceptions of 213 individuals drawn from a mixture of private
organizations and educational institutions and conducted a climate assessment. Analysis of information on participant perceptions of the worst and best climates for creative and innovative work led to a delineation of 426 different types of organizational climates. Assessment of problem-solving styles of the participants using the VIEW assessment tool prompted Aerts et al. to note that individuals with explorer problem-solving types preferred significantly more freedom and less direction in their ideal environments, whereas people with developer problem-solving styles preferred greater levels of oversight and guidelines. The scholars concluded that due to the significantly divergent problem-solving styles and climate preferences indicated by employees, conducting climate and problem-solving style assessments and adjusting the atmosphere according to the results could improve innovative and creative performance.

Beyond the consideration of ideal organizational constructs, scholars have sought to determine whether a prevalence exists for certain kinds of personalities in innovative organizations. Christensen, Dyer, and Gregersen (2013) surveyed 5,500 employees and CIOs within 100 leading innovative companies to discover what, if any, patterns existed in employee and organizational behavior. The basis of the study was the theory that creative and innovative thinking is not a genetic predisposition but the culmination of several learned behaviors supported by personal motivators and organizational culture. The researchers identified five specific skills or behaviors found across the companies:

- **Associational thinking.** The cognitive process of considering and connecting disparate ideas not previously connected.
- **Questioning.** When paired with creative thinking, new ideas form in executable ways.
Observe. Observation as a component of critical thinking provides the foundational layer of facts from which to base a judgment.

Networking.

Experimenting.

Additionally, Christensen et al. (2013) observed that these behaviors could be present at the individual employee level, but if they were not also present at the leadership level, then innovation did not occur routinely in the organization. The scholars concluded that in nonprofit organizations, leaders could not delegate innovation; rather, the leaders must also engage in innovative thinking and behavior. Based on the conclusions of this study, the level of participatory leadership may be an important element to consider when assessing the influence of DOD service culture on innovation.

The participation of DOD leaders in the innovation process may be limited, as delegating the innovation process is in keeping with a hierarchal organizational structure.

Identifying and understanding the factors that influence creative and critical thinking within the DOD is a fundamental step toward increasing its rate of innovation. There is a consensus within scientific literature that organizational constructs and culture affect innovation performance, but researchers have conducted the majority of studies on innovation on private sector companies rather than DOD or nonprofit organizations. Far fewer researchers have isolated the predictors of innovation and effectiveness of models in DOD and nonprofit organizations. Studies based on organizations with fundamentally different paradigms and constructs are not easily transferable, and gaps in applicability can be costly and time-consuming (Jaskyte, 2011).
Studies on innovation in nonprofit organizations may shed further light on areas of influence within DOD service culture. Although the organizational environments are still quite dissimilar, bureaucratic constructs often hinder both DOD and nonprofits, and both have some of the same motivating factors, such as altruistic motivations. A notable pioneer in the field of nonprofit research, Jaskyte (2011) conducted a quantitative study to examine the effects of human and structural process factors on technological and administrative innovation in nonprofit organizations. Jaskyte used the OCP diagnostic tool to conduct a cultural assessment on 79 nonprofit organizations and then followed with interviews and surveys. The author noted that differing types of innovation occur at individual, organizational, and environmental levels and the factors that influence performance differed depending upon the level at which it manifests.

Within the study, the factors of centralization, transformational leadership, and higher lengths of an executive director’s tenure emerged as having a strengthening influence on administrative innovation (Jaskyte, 2011). Among the variables tested, only transformational leadership reflected a positive correlation to the amount of technological innovation produced. Jaskyte (2011) found that proportionately, nonprofit organizations produce more technological innovations than administrative innovations, with a mean of 10.51 for technology and 5.94 for administrative innovations. This result is logical, given that nonprofits typically have less flexibility in areas of compensation and tend to be more highly regulated and bureaucratic than their private counterparts.

Recently, Jaskyte continued her exploration with the same sample. In a study on the influence of organizational size on innovation in nonprofits, Jaskyte (2013) used a controlled experiment to isolate formalizations, specialization, board size, organization’s
age, and centralization and found that board size and organizational age were the only significant predictors of innovation volume in general and technological innovations in particular. Board size accounted for 27-28.1% of the variance in volume, which led the researcher to conclude that nonprofit organizations with larger boards, tend to produce more innovations than those with small boards, and younger organizations tended to produce a greater volume of both types of innovation.

Gajendran and Joshi (2012) studied innovation in globally distributed teams by examining the role of communication and member influence on team decisions on innovative performance. The scholars surveyed 167 employees from 40 teams working for a Fortune 500 software company. Researchers assessed measures of participative decision-making, quality, and frequency of leadership exchange using a scaled survey and assessed innovation as a process and an outcome through a supervisory survey. The data revealed that team dispersion negatively affected the innovation process, but not necessarily the outcome, as higher levels of communication had a mitigating effect on the outcome. In particular, correlations between higher team-level influence on team decisions and higher levels of innovation were positive, both as a process ($\beta = .28, p < .05$) and as an outcome ($\beta = .23, p < .05$). Global dispersion is a pervasive element within the DOD service culture, and its influence on cognitive performance was particularly relevant to this study.

The highly-nuanced nature of organizational culture, which has strong individualistic social experiences that make it difficult to isolate the phenomenon and produce a definitive solution, compounds the difficulty in obtaining conclusive empirical evidence of the ideal organizational construct. The number of cultural variables for
consideration has led to a fragmented understanding and lack of consensus on what the ideal organizational culture for innovation should be (Balkin, Bausch, & Büschgens, 2013).

Balkin et al. (2013) conducted a meta-analysis of 43 studies with a combined sample size of 6,341 organizations using the competing values framework and concluded that it provided a highly meaningful foundation for assessing the ideational aspects of corporate culture. Balkin et al. noted that the leaders of the most innovative organizations had established congruence between management goals and the goals of the organizational culture. The study produced data that revealed that within innovative cultures, individuals who internalized the values and goals of the organization tended to apply them independently and thus were more successful in flexible environments. The researchers concluded that organizations with developmental cultures performed more innovatively, whereas those with traditional hierarchal constructs performed significantly less so. As with earlier research, the metadata study fragmented when approaching the multiple layers of cultural and organizational variables, and the competing values framework did not separate the nuances present in each organization to isolate further the precise formula for an innovative environment.

Interest in increasing organizational effectiveness has led scholars to explore the role of performance expectations in driving innovative behavior. A study conducted by Woodman and Yuan (2010) used the efficiency-oriented perspective and the social-political perspective to try to understand why employees innovate in the workplace. Four hundred twenty-five employees within four companies participated in a survey to ascertain their expectations of positive performance outcomes and expected image gains.
The researchers hypothesized that expected positive performance outcomes positively correlated to innovative behavior, as did expected image gains. Conversely, the researchers hypothesized that expected image risks negatively related to innovative behavior. The researchers evaluated 17 variables related to the primary three hypotheses and found that positive correlations supported two of the three hypotheses and 11 of the 17 variables. A significant negative correlation emerged on expected image gains and subsequent actual innovative behavior. In situations where a perceived increase in image or social standing was the primary motivation for employees, rather than expectations of improved performance, innovation was significantly lower.

Monteiro et al. (2014) explored new methodologies for decreasing the time needed for teams to generate and implement new ideas. The researchers focused on adapting creative problem-solving processes to an organizational context to determine if shortening the standard creative problem-solving methodology could make it more effective in an organizational setting. Monteiro et al. conducted experiments on six groups of individuals and tested the quality and efficacy of a six-step group problem-solving process over the course of multiple days versus a four-step process limited to 4 hours. The researchers found that the longer process was no more effective than the shorter process, and in some cases, it was significantly less so. Issues prevalent in longer processes included time commitment, duplication and stagnation of ideas, loss of interest, and lack of consensus. The shorter, more pressing timeline of the four-step process had the effect of increasing engagement and collaboration, and the teams appeared to be more effective in removing barriers to communication in favor of achieving a resolution in the time-constrained environment. The researchers noted that the longer sessions seemed to
have greater benefits in personal growth for the participants, but often lacked buy-in due to the difficulty in keeping all participants present and engaged for the entirety of the sessions, but the shorter sessions were more operationally efficient and included the subject matter experts from start to finish.

The study of innovation is a rapidly growing field. Scholars have approached the topic from a variety of perspectives, with some examining innovation as an individual phenomenon while others combine innovation with other types of cognitive functioning. The demand for rapid innovation within the DOD has been increasing over time, and the gap in knowledge remains significant in this area. Continued empirical research is necessary to arrive at a consensus on the definition, origin, and manner of cultivation.

Critical thinking

One result of the post 9/11 analysis is the recognition of the need for increased levels of critical thinking in the U.S. DOD in general and in the U.S. intelligence community in particular (Collier, 2013). Paired with the presidential call for increased innovation in government, it is clear that the factors within U.S. DOD service culture that influence the performance of critical thinking need a better understanding.

In a 2012 study, 1,709 global leaders ranked the skills of creativity, critical thinking, and flexibility as the most essential in a dynamic environment (IBM, 2012). A single definition of critical thinking, however, remains a matter of some debate, and a thorough review of the literature found little consensus in this area. Critical thinking is not a new concept. Collier (2013) noted that critical thinking emerged in the literature as early as 1605 with notable theologians such as Sir Francis Bacon. More recently, Cohen (2000) defined critical thinking as a cognitive skill that requires the thinker to use an
open-minded approach to recognize problems, consider existing knowledge, evaluate the accuracy of new information, and analyze the composite of information to render a logic-based decision. Andreou, Papastavrou, and Merkouris (2014) elaborated further, purporting that data become knowledge as an outcome of consideration and justification through the act of critical thinking and decision making.

The literature includes conflicting views on the role of critical thinking in decision-making. Research supports using credulity over critical thought if the preponderance of guidance is from a reliable source (Huemer, 2005). This concept is particularly relevant in a militaristic organization, where the expectation is to follow commands without question. Conversely, research also supports using critical thought over credulity with a claim that critical thought, analysis, and opinion formation are necessary components of credulity (Ritola, 2012). The diverging views are useful when exploring the service culture of the DOD, as they provide perspective into the rationale that may be behind its current levels of performance.

Cohen (2000) provided a framework for understanding critical thinking that gives a complimentary layer of depth to the exploration of critical thinking in the U.S. DoD. Through his three-part theory of critical thinking, the theorist identified three primary cognitive processes and behaviors that support critical thinking. The thinker must assess the reliability of the information based upon the source of the information and against that which is currently known, form mental models of alternative possibilities, engage in critical dialogue that confirms, denies or clarifies the information, and arrive at a logic based decision. Cohen aligned the three identified components within the context of a
hierarchal military structure, and argued that the application of critical thinking within the military construct was most appropriate within the senior ranks of the organization.

In many cases, researchers do not consider critical thinking a singular activity. Many scientists have combined critical thinking with other cognitive processes to gain a deeper understanding of how critical thinking affects other types of cognition. Jing and Yang (2015) explored the role of critical thinking on employee creativity. The scholars purported that critical thinking occurs when an individual continuously reconstructs knowledge based upon new information, which in turn generates new ideas. Four hundred forty-two participants from two Chinese software companies and 47 teams from a Chinese insurance company received a critical thinking survey. Each participant provided a self-ranking and received a ranking from his or her direct supervisor and one coworker. The variables were employee creativity, creative process engagement, and leader–member exchange (the relative quality of the relationship between supervisor and subordinate). The results demonstrated positive correlations existed between levels of critical thinking and creative process engagement. Further, the relationship between critical thinking and creative process engagement was lower when the leader–member exchange was high. Jing and Yang proposed that this correlation may be due to the tendency of employees who feel highly connected to their leaders to refrain from challenging their authority by questioning ideas or offering alternative solutions. Although the study revealed correlations between critical and creative thinking, it was also particularly relevant to the exploration of the influence of cultural attitudes and norms on creative and critical thinking.
Bunting, Hogan, and Noone (2016) examined the influence of practicing mindfulness on critical thinking performance. One hundred seventy-six University students participated in a battery of executive functioning tests and took both the Halpern Critical Thinking Assessment and the Five Factor Mindfulness Questionnaire. Bunting et al. tested the results through a multiple mediation model and assessed them using the structural equation method. The scholars described mindfulness as present-moment focus and nonreactivity, which refers to the deliberate early suppression of emotional responses. These two elements are components of self-regulation and support memory processes. The mindfulness trait of observing demonstrated no direct effect on critical thinking, but did demonstrate a positive indirect effect. The mindfulness trait of inhibition mediated the indirect effect, which negated the influence. The mindfulness trait of nonreactivity had a significant negative correlation with critical thinking. The mindfulness trait of observation had a positive correlation with inhibition. Within the context of the study, inhibition referred to the suppression of dominant or biased thoughts. Inhibition positively correlated with critical thinking. Bunting et al. concluded the correlations between inhibition and critical thinking were weak, but the practice of mindfulness either presented no effect or produced a negative result overall.

Burke et al. (2015) hypothesized that some aspects of thinking occur within complex social situations that differ from those conducted in isolation. The scholars developed the concept of critical social thinking as a model for understanding the cognitive processes that influence critical thinking in social situations. The model describes a four-part evaluative process in which the thinker scans, assesses, interprets, and interacts. Burke et al. concluded that these four skills are necessary to execute
critical social thinking in complex social environments successfully and can be taught within a corporate training environment.

The need for employees to execute critical thinking is a widely accepted concept. Testing for aptitude and critical thinking competency gaps, however, is not yet a standard practice. Dubrie and Kit Fai (2013) developed a progressive model for critical thinking assessment. Seven graduates of the Masters’ Program in Project Management at the University of West Indies participated in the study using the comprehensive evaluation model created by Dubrie and Kit Fai. The scholars and participants assumed that the project managers would score highly in critical thinking levels. Study results revealed average scores at a Level 3, or mid-range, with slightly higher scores in leadership, conflict resolution, and control management. The scholars noted weaknesses in planning, decision-making, engagement, and meeting objectives. Dubrie and Kit Fai concluded that the model would provide useful insight into job competency areas requiring further development.

Clark, McCormick, and Raines (2015) explored environments best suited for increasing critical thinking performance. The researchers observed that team environments in which individuals interacted with others and engaged in the active exchange, evaluation, and clarification of ideas enhanced critical thinking performance. Clark et al. drew no conclusions about optimal group size or structure, but concluded that there were clear benefits to critical thinking performance in a dynamic group environment.

Mahalingam, Molino, and Schaefer (2008) examined the critical thinking performance of students in an interactive group setting versus the critical thinking
performance during lecture attendance to determine whether there was an optimal format for the presentation of the data. The scholars experimented with altering the student composition of classes, as well as the duration of participatory versus nonparticipatory time, and evaluated scores based on information retention and comprehension. The data revealed that students achieved significantly higher critical thinking scores when presented with coursework in collaborative learning environments than when facilitators provided the same information in an independent learning environment. The researchers concluded that collaboration promotes growth in critical thinking and enhanced problem-solving capabilities.

Pear and Svenninghsen (2011) further explored optimal techniques for increasing critical thinking performance. Three hundred sixty-five students from the University of Manitoba participated in a study that involved comparing computer-aided personalized system of instruction (CAPSI) efficacy against more traditional methods for increasing critical thinking capabilities and found that this type of instruction outperformed lecture. Overall test scores for students taught with CAPSI were higher than for those who did not. The CAPSI score mean was 69.18 ($SD = 6.46$) and the non-CAPSI score mean was 65.95 ($SD = 6.35$). The overall effect was statistically minimal. Scores specifically relating to critical thinking also reflected higher performance from the CAPSI group (mean 28.25, $SD = 6.46$) versus the non-CAPSI group (mean 26.74, $SD = 6.35$). The results were small, though statistically significant at the .05 level. A second experiment with modified conditions involved repeating tests on the two groups and resulted in very similar results. The scholars concluded that the CAPSI method of instruction was a viable method in general, especially for increasing critical thinking.
Further exploring the use of critical thinking training, Jefferson and Wallace (2013) tested the efficacy of working with a critical thinking workbook for one semester. Seventy-six students participated; 26 received the workbook, and 50 did not. The students were tested using the iCritical Thinking Skills Test. Analysis revealed that 20% of all participants received a passing score. Thirty-six percent of those who had used the workbook received a passing score, compared to 12% of those who did not use the workbook. Chi-square test results indicated a statistically significant correlation ($\chi^2(1) = 6.22, p < .05$). Jefferson and Wallace concluded that the workbook methodology was an effective tool for improving critical thinking performance.

The concept of critical thinking has garnered significant attention from scientific and scholarly experts. Consensus on a precise definition of critical thinking does not exist, but there is agreement that it is a valuable cognitive activity. Scholars have produced multiple theories on the psychological, cognitive, and organizational drivers of critical thinking, but have not yet captured all of the areas of influence, nor established all of the relationships between critical thinking and other forms of cognition. A thorough review of the literature revealed that there are multiple areas remaining for exploration, and continued research is warranted.

**Creative thinking**

Creative thinking is a cognitive process that entails evaluating data and considering new possibilities and solutions. A significant amount of literature is available on creative thinking, although opinions on its cultivation vary widely. Many researchers support the premise that cultivation or suppression of creative thinking occurs through environmental manipulation, but the consideration of whether creative thinking
performance stems from genetic predisposition or organizational manipulation is an ongoing topic of scientific and scholarly debate.

Experts from Harvard Business School contended that genetic predisposition does not limit creativity. Rather, creative output results from the application of skills and behaviors that individuals can learn (Christiansen, Cliff, & Gregersen, 2013). According to the researchers, genetics account for only 30-35% of an individual’s ability to produce new or innovative ideas, whereas the remainder comprises learned skills and behaviors. Su and Zhou (2010) explored the influence of cross-cultural differences on creative thinking output and observed that cross-cultural differences appear to influence creative performance less than social and interpersonal relationships at work, leadership behavior, and organizational constructs do.

In a recent study, Kurt and Yaghyagil (2015) explored the association between employees’ values, creative thinking performance, and leadership interactions to determine whether leadership had a mediating effect on employees’ creative thinking performance. The researchers used the Rice nine-item inventory, the Multifactor Leadership Questionnaire, and the Schwartz Value Survey to build a conceptual model based on Schwartz’s ten individual-level values as a theoretical framework. The scholars sought to determine what the individual values were that influenced employee creative behavior and to understand whether leadership behavior mediated this influence. The findings of both the multiple regression analysis and the Sobel test supported a partial mediating effect of leadership on individual values and employee creative behavior. The data indicated that transformational leadership had a significant effect on employee creative behavior and decreased the effect of individual values from $\beta = .271 \ (p < .01)$ to
\[ \beta = .199 \ (p < .01) \]. Additionally, transactional leadership was also found to affect employee creative behavior and decreased the effect of individual values from \[ \beta = .271 \ (p < .01) \) to \[ \beta = .213 \ (p < .01) \). The scholars concluded that a positive relationship existed between universal individual values and employee creative behavior and demonstrated that interaction with leadership can positively influence creative thinking performance.

Choi, Sung, and Yoon (2015) combined the concepts of genetic predisposition, motivation, and rewards to gain an understanding of how performance rewards influence creative performance. The scholars surveyed 241 participants from 41 organizations and found that the correlation between employees identified as intrinsically motivated and those with elevated creative thinking performance was positive. The level of commitment to creative performance among intrinsically motivated individuals appeared to be the variable that compelled higher performance, rather than rewards. Participants who were extrinsically motivated did not demonstrate a positive correlation to creative performance, but could be positively influenced by external rewards if the individual perceived the reward to be important \( (\beta = .56, p = .0003) \), but not if the individual deemed the reward unimportant \( (\beta = -.17, \text{ns}) \). Choi et al. concluded that rewards specifically tailored to creative performance, rather than general performance, could have a beneficial effect on some, but not all, employees.

Baas, Roskes, Sligte, Nijstad, & De Dreu (2013) contended that creativity is an inherently genetic trait. The scholars conducted a metadata study using the Dual-Pathway to Creativity Model (DPCM) to explore the creative process. The scholars hypothesized that individuals achieve creative output through one of two pathways: persistence (duration of time on task) or cognitive flexibility (the ease with which an
individual considers different, new, or unusual viewpoints). Based on the data collected, Baas et al. noted that inherent personality traits such as extraversion and openness to new experiences have a positive correlation to creative output, as they increase cognitive flexibility, whereas the trait of neuroticism may also increase creative output because it can increase persistence to the task. The scholars concluded that their research supported their hypothesis that genetic drivers, rather than environmental constructs, primarily influence creative output.

Hennesy (2014) explored the theory of innate talent by studying gifted individuals within the Macarthur Fellowship program. The participants were chosen based upon their status as successful, highly innovative individuals who had founded successful organizations. Hennesy explored the participants’ decision-making experiences and processes to gain a deeper understanding of how their cognitive habits influenced their creative outcomes. The interviews were separated between participants from profit versus nonprofit organizations to determine whether there were any differences in cognitive preferences. Hennesy found that nearly all the participants had incorporated elements of both business types in uncommon ways, such that the distinctions were rendered invalid. The study results were inconclusive, and the researcher found no clear linkages between decision-making and creativity based on the responses to the phenomenological inquiry.

Wang (2012) explored the relationship between extensive practice in reading and writing and high creative thinking performance. One hundred ninety-six University students participated in a study comprised of a survey and a creative thinking test. Wang found that individuals who spent higher than average amounts of time reading and
writing tended to have high scores in creative thinking. Students who reported negative attitudes toward reading and writing had a significant correlation with low creativity performance. The scholar concluded that the hypothesis that reading improves creative performance was supported and indicated that there is potential for improving the performance of creative thinking by increasing the amount of time spent reading and writing.

Gheibi and Zhang (2015) contended that creative thinking is neither purely genetic nor purely environmental. The scholars developed a theoretical model comprised of intrinsic motivation, creativity, and knowledge integration to exemplify the creative thinking process. The model relies upon the theory that a balance must exist between the genetic traits of intellect (knowledge), creativity, and intrinsic motivation and the external condition of team psychological safety. The researchers theorized that individual team members must be intrinsically motivated and hold the implicit belief that interpersonal risk-taking is safe before they will be able to optimize their creative and critical thinking. Gheibi and Zhang hypothesized that creative thinking occurs when there is a three-way interaction between knowledge integration, intrinsic motivation, and team psychological safety and purported that high levels of all three elements optimize creative thinking performance.

The hierarchy of needs theory and the self-actualization theory (Maslow, 1943, 2014) define the psychological requirements necessary for an individual to engage in creative thinking. A foundational premise of these theories is that physical, psychological, and social safety must be present before creative thinking can routinely occur. According to Maslow, the presence of fear or suppression within the culture of an
organization could result in a lack of creative thinking and, therefore, a lack of innovation.

Liao, Liu, and Loi (2012) examined the relationship between abusive leadership and employees’ creative and innovative performance. The scholars conducted a quantitative study on 1,392 employees and department heads of a large manufacturing firm. Aspects of abusive supervision involved public criticism, derogatory comments, belittling, rudeness, loud or angry tantrums, and inconsiderate treatment of the employee. The researchers captured employee perceptions of the prevalence of abuse, employee perceptions of the motivations for the abuse (intent to elevate performance versus intent to inflict injury), and leadership perceptions of employees’ creative thinking performance. Liao et al (2012) assessed and evaluated variables such as age, gender, education level, and task performance within the context of the amount of time spent within the current employee–leadership dynamic. The scholar found that employees responded differently to abusive behavior, depending upon the perceived motivation. The negative effect of the abuse on creative thinking performance was somewhat mitigated, though not eliminated, by the perception of the motivation that team members held. If the perception was that an attempt to improve performance was the driver of the abusive behavior, an employee’s creative output was less likely to be suppressed than if the employee believed the abuse to be a personal attack \( (y = .15, p < .05) \) versus \( (y = .3, p < .05) \).

Liao et al. (2012) noted that team leaders tended to mimic the behavior of their leadership, which caused a trickle-down effect that permeated the entire hierarchal chain. The results demonstrated a negative relationship between abusive supervision and
employee creative performance ($y = -.53, p < .01$), which further revealed creative thinking suppression in environments where abusive supervision occurs. The scholars concluded that the practical implications of the data indicated that organizational leaders should take abusive leadership from top management particularly seriously, as the potential for wide-ranging negative repercussions is significant.

Amabile, Conti, Coon, Lazenby, and Herron (1996) examined managerial belief systems and techniques that hindered creativity in the workplace. Using the KEYS quantitative survey instrument, the scholar interviewed employees from a broad cross-section of industries and compared data generated from organizations considered highly innovative against data from those viewed as lacking in innovation. The scholars identified themes within work assignment descriptions that employees described as either highly creative or least creative and found that the recurring themes of challenge, freedom, autonomy, resources, and time pressure all contributed to creative output. Managerial and organizational issues were implicated in reducing creative performance, as were artificially tight deadlines, lack of autonomy, lack of challenge, and teams comprised of uninterested participants or those who do not respect the skills or contributions of the other members. Amabile et al. concluded that managerial decisions have a strong correlation to creative performance and could be adapted to maximize productivity.

Erdil, Muceldili, and Turan (2013) explored the correlation between authentic leadership and creative thinking performance. Relational transparency, self-awareness, internalized moral perspective, and balanced processing characterizes authentic leadership (Avolio et al., 2014). The scholars surveyed 142 employees from service and
manufacturing firms in Turkey to determine whether a positive correlation existed between authentic leadership and innovative performance. The data revealed positive correlations between authentic leadership and innovation ($\beta = .223, p = .034$), as well as positive correlations between authentic leadership and creativity ($\beta = .630, p = .000$) and between creativity and innovation ($\beta = .237, p = .013$). The influence of mediation did not indicate a statistically significant correlation with innovation or creativity in the workplace. Erdil et al. concluded that organizations could have a higher potential for innovative performance in their workforce if leaders had higher levels of authenticity.

The origins and drivers of creative thinking are a matter of debate within the scientific and scholarly community. Some scholars contend that creative thinking is a teachable skill, whereas many others purport that the trait is inherent to the individual’s genetic makeup and not to the environment. Studies on the influence of leadership, organizational culture and constructs, team composition, and interpersonal dynamics provide insight to the phenomenon while making it clear that the amount of research needed in this area is significant. The identification of areas of potential influence on employees’ creative thinking performance was of value when exploring the phenomenon of this study.

**Summary**

The purpose of this research was to study how the DOD service culture influences its’ employees creative and critical thinking. Chapter 2 included an exploration of the current and foundational research relating to theoretical frameworks for organizational culture, creative and critical thinking, and provided a synthesis of the literature related to the research topic.
Analysis of the scientific literature revealed that most of the models and frameworks for analyzing organizational culture were designed and tested in private industry. According to Jaskyte (2011), such models are often not effective when carried over into nonprofit organizations. Exploration of the distinctions between organizational culture and service culture identified some of the elements unique to DOD service culture. Insufficient detail exists in this area, however, as the elements identified in the literature do not comprise an all-encompassing list and much is yet unknown.

The intersection between intra-individual and inter-individual cognitive manifestations is addressed indirectly throughout scholarly literature. Researchers have produced numerous studies hypothesizing that creative and critical thinking tend to manifest at the intra-individual level (at the individual level) while innovate performance tends to manifest at the inter-individual level (group level). Within the study of creative and critical thinking, scholars have identified elements that influence optimal cognitive performance. A synthesis of the literature revealed that manifestation of creative, critical and innovative thinking repeatedly intersect in areas such as psychological safety (intra-individual), team safety (inter-individual), organizational-person fit (intra-individual), and organizational structure (inter-individual). The scientific literature lacks empirical data on how the experience of service in the DOD influences employee critical and creative thinking on an individual level. The literature is also lacking data on how the DOD service culture influences the performance of innovation on an intra-individual, or team level.

The scholar found variances of opinion on the most effective research methodology throughout the literature on creative, critical and innovative thinking,
organizational and service culture. Using phenomenological inquiry to frame and conduct research for this study is supported by the scholarly literature (Cunningham, 2012; Finlay, 2012; Green & Thorogood, 2009; Groenewald, 2004). An exploration of studies focusing on the influence of leadership, organizational culture, team composition, and interpersonal dynamics on creative and critical thinking provided insight into some of the factors relevant to this study. A thorough review of the literature failed to reveal any research identifying the specific elements within DOD service culture that influence cognitive performance. Identification of areas of influence on employees’ cognitive performance was of value when exploring the phenomenon of this study.

In chapter 3, the researcher provides descriptive detail on the methodology used for this study. Provision an explanation of the instrumentation, sample population, data collection, and analysis will enable reviewers and future scholars to consider the validity of the research and appropriateness of approach. The chapter concludes with ethical considerations, mitigations, and precautions.
Chapter 3: Methodology

This qualitative study explored the phenomenon of service culture influence on the critical and creative thinking of U.S. DOD personnel. Use of a qualitative methodology enhanced exploration of the research problems. The research contributes scientific knowledge of the phenomenon for use in improving critical, creative, and innovative thinking performance within the U.S. DOD.

Due to the rapid pace of global innovation and growing threats to national security, U.S. DOD leaders are seeking to increase the pace and volume of innovative performance. Despite ongoing efforts, success in the endeavor has not yet occurred (Tyson, 2014; U.S. DOD, 2015). Two primary mechanisms supporting the cognitive process of innovation are creative and critical thinking. By exploring the influence of service culture on these processes, the researcher hoped to provide insight capable of enhancing performance.

Chapter 3 includes a restatement of the problem and a justification for the research design and methodology, sample selection, and instrumentation. Chapter 3 also includes a description of the online survey instrument, the data collection process, and the analytic methodology. The chapter concludes with an explanation of ethical considerations and mitigations.

Statement of the Problem

Knowledge concerning the influence of U.S. DOD service culture on critical and creative thinking performance is lacking. A significant amount of literature on creative and critical thinking exists, and there are noteworthy works in which researchers have
examined DOD service culture, but the relationship between the three factors remains unexplored.

U.S. DOD leaders have been ordered to increase the pace and volume of innovation but lack understanding of the reasons why their innovative performance is at its current levels (U.S. DOD, 2015). Although the pace and volume of innovation have increased exponentially in the private sector, correlating increases within the DOD are not evident (Tyson, 2014; U.S. DOD, 2015; Waller, 2015). As the combined execution of creative and critical thinking drives innovation, examination of the influence of service culture on these two cognitive behaviors may provide critical insight into the problem.

With more than 2 million employees and an annual budget of $609.6 billion (U.S. DOD, Office of the Comptroller, 2016), fiscal constraints and human resource limitations are unlikely to be the primary cause for the dearth of innovation in the DOD. Significant differences exist between the organizational culture of private industry and the service culture of the DOD. An exploration of the differences between the two revealed elements that are contributing to an increase in innovative performance in the private sector as well as aspects that may be contributing to its suppression in the U.S. DOD. Exploration of the gaps in the literature served to increase understanding of the influence of DOD service culture on service members’ creative and critical thinking.

**Research Questions**

The focus of this study was on understanding how working in the U.S. DOD service influences the creative and critical thinking performance of its employees. The researcher used phenomenological inquiry to explore the points of view of the participants, and investigate the constructed reality that embodies their experiences.
Exploration of the phenomenon encompassed questions framed around the need to derive meaning from the employee’s perspective, as follows:

RQ1: How do U.S. DOD employees describe their service culture?

RQ2: How does the experience of working with the U.S. DOD service culture influence its personnel’s critical thinking performance?

RQ3: How does the experience of working with the U.S. DOD service culture influence its personnel’s creative thinking performance?

The method of data collection was a prominent concern. U.S. DOD employees are often reluctant to participate in interviews due to concerns over confidentiality and fears of reprisal from superiors. To mitigate this issue, the researcher carefully considered the limitations and benefits of in-person versus online interaction. While face to face interviews are the most common method for qualitative research (Deakin & Wakefield, 2014), the internet is no longer a new technological development, and online social intercourse is a mainstream phenomenon. Multiple benefits exist for an online methodology (Bowden & Galindo-Gonzalez, 2015), including streamlined documentation, logistical and time convenience for both participant and researcher, and the ability to achieve heightened privacy and anonymity. This later consideration weighed prominently in the decision to utilize an online delivery method.

The researcher delivered a series of open-ended questions to the participants through an online platform. The design of the questions encouraged participants to document their experiences and perceptions surrounding the phenomenon in a detailed narrative, while carefully avoiding prescriptive or directive guidance that would influence the responses. In this way, the chronicles captured the experiences from the aperture of
the employee, rather than through the bias or preconceived notions of the researcher. Participants did not provide names, but did provide basic demographic information, such as rank and DOD affiliation, as well as an email address for follow-up questions. This methodology was similar to interviews conducted strictly by e-mail, but provided greater assurance of anonymity for the participants, as hyperlink access omits direct traceability, thus ensuring that the researcher had no knowledge of the names of the participants. The online format included easy access, and participants responded at their convenience, taking as long as necessary to provide thoughtful, detailed accounts. The responses were in writing, which improved the validity of the study, as it prevented the researcher from inaccurately documenting a participant’s responses through personal bias or communication error.

**Research Methodology**

The purpose of this research was exploratory, in that it sought to investigate how service culture, and the service cues within, influence U.S. DOD employee cognition. Because more information relating to the phenomenon was unknown than known, there was insufficient data about the complexities of the phenomenon to formulate a hypothesis regarding correlational variables. Investigation through qualitative means facilitated the capture of additional details relative to the phenomenon, which may provide quantifiable variables to test in future studies.

For the selection of a study methodology, the researcher relied upon the recommendations of scholarly experts, who held that quantitative research could reduce the scope of variables too much and potentially lead researchers to ignore pertinent information in the interpretation of the data (Frost & Martin, 2011). Service culture
encompasses social interactions filled with nuances of personal experience. According to Cronbach (1975), statistical analysis cannot adequately capture the full spectrum of experience that occurs in a social setting. Cronbach stated that when experiences are important in understanding a phenomenon, a qualitative methodology is most appropriate.

Qualitative research is often wide-ranging and intentionally exploratory in nature. This study’s approach took into consideration the intricate web of institutional structures, internal relationships, and power differentials to understand the subjective meanings that individuals applied to their experiences. While the qualitative methodology is exacting and somewhat laborious, it enables interpretation of points of view that are not otherwise quantifiable.

Within the study’s qualitative framework, a phenomenological design supported the delivery of open-ended questions designed to garner insight into the lived experience. The depth and complexity of the information generated through this methodology helped illuminate the point of view of the participants, and identified specific elements existent within the service culture that appear to influence creative and critical thinking performance.

**Research Design**

Service cues are a complex phenomenon involving nuances of social interaction, including inter-individual and intra-individual cognition and internal and external influences. Unlike organizational culture, there is a paucity of research on service cues, and the factors that contribute to its influence on employee cognition remain mostly unknown. While a qualitative methodology appeared to be a relatively obvious choice to
explore the study’s research question, the best design was not apparent. Comparison of the multiple variations preceded the selection of a phenomenological design. Ultimately, the nature of the population created constraints and preferences that made certain choices less desirable than others, and led to the selection of a phenomenological design.

Ethnography posed numerous benefits for this research, but concern for bias risk rendered it undesirable for this particular study. Ethnography requires researcher immersion into the environment over a significant period (Creswell, 2013). As the phenomenon under review involved inculcated messaging and training aimed at changing cognitive and psychological attributes, such immersion presented the potential to render the researcher incapable of observing without bias. Similarly, consideration of the complicated nature of the phenomenon rendered the narrative approach complimentary, but not superior to phenomenological inquiry. According to Yin (2010), a narrative approach seeks to develop a conceptual understanding of a single persona. The belief that the phenomenon likely presented differently between the multiple subcultures in the U.S. DOD made the narrative approach less desirable for capturing the essence of the lived experience for more than a small subset of the total population.

To properly study a phenomenon, researchers must explore the quintessence of lived experiences, which is precisely what a phenomenological study is designed to do (Groenewald, 2004; Opdenakker, 2006). Although other designs such as grounded theory or case study might have produced adequate results, both methods would have introduced boundaries that could limit potential areas of insight (Yin, 2014). The large size of the U.S. DOD and the numerous subcultures that exist within it necessitated a highly flexible, broad avenue of exploration. The fluidity of the phenomenological
approach enhanced the ability to capture shades of personal experience and made it an optimal choice for this study.

Recruitment of three pilot participants enabled a test of the research questions before commencement of the study. The researcher selected participants through social media, based on their military affiliation and interest in the study. Use of the online platform for all three tests ensured consistency of results. Review for leading questions, clarity of presentation and usability resulted in minor corrections in phraseology prior to the study’s launch. The results of the pilot helped improve question clarity and aided in the development of follow-up questions.

The researcher presented the participants with a series of open-ended questions through an online platform. Use of this delivery method provided convenience and heightened anonymity for the participant, to increase the likelihood of receiving well thought out, authentic responses. The questions used were the same online as they would have been in person, and encouraged a detailed recounting of participant experiences without directive or prescriptive overtones. The primary difference in the manner of delivery was in the online interface rather than face-to-face delivery. Based on participant responses, the researcher emailed the participants follow-up questions as necessary to provide clarity in areas of ambiguity.

**Population and Sample Selection**

The study population encompassed approximately 2 million DOD employees. The location for this study was the National Capital Region, which encompassed the areas contained within the inner loop of Highway 265 in Virginia, Maryland, and Washington DC. The target population consisted of 1,284 employees who utilized
LinkedIn.com and identified employment with the Defense Intelligence Agency. The study sample consisted of 22 U.S. DOD employees who held the civilian rank of GG13 through SES or the military rank of Non-Commissioned Officer, E-7 through E10 or Commissioned Officer, O4 through O7. The rank criteria served as a filter to ensure all participants held mid- to senior-level professional positions in the DOD.

The critical case sampling rationale supported the selection of a sample size goal of 20-30 (Guetterman, 2015). U.S. DOD employees holding civilian positions ranked GG12 through SES or the equivalent military range from full-performance to expert and are expected to utilize creative and critical thinking in the execution of their duties. These positions have standard requirements for education levels and experience. The normalization of the target population allowed for logical generalization and maximum application of information to the larger population.

The researcher used search tools within the LinkedIn platform to identify and contact members of the sample population. Use of the advanced filter functionality platform identified 1,284 potential participants. Transmittal of 120 invitations resulted in 22 respondents who met the criteria for inclusion and were amenable to participating in the study. Two participants provided rank and grade criteria out of scope for this research, resulting in exclusion from the study.

The invitation provided a hyperlink to direct respondents to the online platform, and gave detailed information on the nature of the research and selection criteria to ensure that the study followed proper ethics protocol. The hyperlink routed respondents to an introductory screen, which displayed facts about the study and an explanation of the participant’s rights. Participants acknowledged the informed consent form by
electronically clicking the ‘acknowledge’ button before proceeding to the first question. Refusal to acknowledge the informed consent resulted in cessation of the online session.

**Sources of Data**

The primary source of new data came from participant responses to open-ended questions. The researcher derived the questions from current literature as well as from the knowledge gap relating to the research topic. The focus of the questions pertained to the experience of serving in a military institution, and the experience of creative and critical thinking in the U.S. DOD. The chosen method entailed exploration of the phenomenon through the detailed narratives chronicled from the employees’ perspective.

Internet usage is a mainstream method for communication, and no longer considered an exception to societal intercourse. According to Bowden & Galindo-Gonzalez (2015), online platforms offer multiple benefits, such as prioritization of participant comfort, reduction of distance and time constraints, reduced research costs, streamlined transcription and encouragement of iterative reflection between question, response receipt and clarification. The scholars add that there are limitations to the method as well. Academic perception issues were concerning, as future use of the research is dependent upon the perception that the methods are valid. Scholarly opinion has traditionally held the face to face interview as the optimal practice for qualitative research. New techniques enabled by technology have yet to receive equal recognition (Deakin & Wakefield, 2014). Additionally, Bowden and Galindo-Gonzales noted that a lack of physical cues such as facial expression, voice intonation, and body language might pose the risk of ambiguity in response analysis.
Careful evaluation of the limitations of an online format versus the benefits led the researcher to conclude that the risks were not greater than those existent in traditional face to face formats. Ambiguity in question and response is possible in both face to face and online delivery. Interpretation of body language and verbal intonation is reliant on both the interviewer and respondent’s internal perceptions and emotional intelligence. Errors in communication occur as a normal part of the social discourse and are not limited to online intercourse. Consideration of the benefits offered to the population in terms of comfort, convenience, and heightened anonymity led to the selection of online delivery.

Validity

There are conflicting viewpoints regarding the meaning and applicability of validity in qualitative research. Various stances exist, ranging from those who believe it is impossible to confirm validity to those who purport that researchers should use a quantitative methodology to confirm the validity of a qualitative study (Azham & Hamidah, 2011). To ensure validity, researchers must remove personal bias from the research process. The use of bracketing served to ensure validity by removing personal bias from the research. To facilitate bracketing, the researcher used reflexivity throughout the research process. Reflexivity refers to the mental exercise of conducting introspective analysis to identify and eliminate areas of personal bias (Chan, Chien, & Fung, 2013).

Care to ensure that the reporting and assessment of the research included testing to validate assumptions and verify that the questions were clear and unbiased. Modifications to the questions took place as needed, based on the feedback provided by
the pilot group. Additionally, qualitative scholars purport that a rich and nuanced
description of the data provides validity confirmation of qualitative research (Marshall &
Rossman, 2011). The phenomenological inquiry conducted within this study provided an
in-depth exploration and description of the lived experiences of U.S. DOD employees;
therefore, the phenomenological research method helped confirm the validity of this
research by generating intrinsic descriptions of the phenomenon.

Reliability

Some researchers have argued that reliability is inapplicable to qualitative
research, as the focus is not on quantifiable data (Golafshani, 2003). Reliability in
quantitative research involves the surety that if another researcher replicated the study
using the same dataset or addressing the same issue, the result would be the same. In
phenomenology, repeatability does not confirm reliability. The details of human
experiences are unique to individual perceptions, and no two are precisely alike. In the
context of a phenomenological study, the representation of the authentic lived experience,
free of the researcher’s biases, confirms its reliability.

According to Azam and Hamidah (2011), researchers have applied the concept of
trustworthiness in research to confirm reliability in qualitative research. In this context,
trustworthiness entails the transparency of methodology, data collection, and sample
selection. Additionally, engagement in bracketing to facilitate removal of bias reinforces
trustworthiness in the research process.

A thorough and detailed description of the research process further confirmed the
reliability of this study. Documentation of the sample selection methodology, rationale
and recruitment results establish credibility and repeatability to the extent possible within
a qualitative study. The basis for the delivery method, questions used and subsequent thematic analysis provides insight into the researcher’s process and provides context for critical review.

**Data Collection Procedures**

Exploration of the study’s phenomena necessitated the selection of a core group of individuals from a broad spectrum of sub-organizations with a commonality of organizational affiliation, professional education, and experience levels. Advocates of the critical case sampling method purport that this type of composition is suitable for standardization of key attributes, which may contribute to a logical generalization for maximum applicability to a population (Suri, 2011). Based on this technique, the operational definition of the target population included U.S. DOD employees ranked GG13 through SES, and their military equivalents.

While the rank and grade criteria narrowed the scope and size of the population, the numbers remained too large for a phenomenological study. While many military institutions focus on a single branch of service, certain U.S. DOD agencies encompass civilian and military employees from multiple military branches. Headquartered in the National Capital Region, the Defense Intelligence Agency (DIA), the National Security Agency (NSA), and the Defense Information Systems Agency each employ a broad cross section of the military community. NSA is approximately two to three times the size of DIA, and DIA is approximately three times the size of DISA. While both NSA and DISA have missions primarily focused on information technology and defense communications, DIA has a broader mission encompassing diverse aspects of national
defense. The selection of DIA narrowed the aperture of participants while preserving a broad cross-section of organizational subcultures and military affiliations.

The researcher submitted an IRB application to Columbia Southern University that documented the specific details related to this study. Upon receipt of approval, the researcher initiated the data collection process. In keeping with the standards of the Belmont Report, all participants were over the age of 18, and none were members of protected groups such as minors, prisoners, or individuals with mental impairments. The data collection design ensured the protection of participant privacy. Access to the online platform deployed anonymously from a hyperlink provided to each participant and did not capture or correlate participant names with responses. Selection of participants occurred at random intervals from a list filtered by employment affiliation. Gender, race, sexual orientation, economic status, or any other form of diversity was not a consideration for participation. No harm came to the participants as a result of the study, and participants received no material gain in exchange for study participation. The research did not involve participants from groups unlikely to be among the beneficiaries of subsequent applications of the research.

Achieving participation entailed recruitment through the social network LinkedIn. The researcher used tools within the LinkedIn platform to identify and contact members of the sample population. Use of the advanced filter functionality platform identified LinkedIn members who belonged to the target population. Entry of the term “Defense Intelligence Agency” and “Washington D.C.” in the advanced search bar of the LinkedIn platform listed 1,284 members who self-identified as DIA employees assigned to the NCR.
Purchase of a LinkedIn recruiter membership provided the capability to send 150 InMail message per month to members who were not personal connections. The researcher chose a random starting location in the population list and sent invitations out four times over the course of two weeks, in increments of thirty. The contents of the message provided a hyperlink to direct respondents to the SurveyMonkey platform, and gave detailed information on the nature of the study and selection criteria to ensure that the study methodology followed proper ethics protocol. Participants provided an electronic acknowledgment of informed consent prior to participation in the survey. Failure to provide the acknowledgment resulted in a termination of the session.

Twenty-four individuals responded to the invitation. Exclusion of two respondents occurred due to rank and grade demographics outside of the parameters of the study. The remaining participants provided their personal recollections for the study.

**Data Analysis Procedures**

As a preliminary step to the analysis of the data, the researcher engaged in reflective bracketing (Chan et al., 2013). The process involved deliberately considering whether any attitudes, opinions, or preconceived notions might influence the analysis of the data. Recognizing and removing areas of bias prior to engaging in the analysis improved the validity of the research and ensured it is trustworthy. The researcher engaged in personal introspection and documented expectations, anticipated results and known biases prior to commencing analysis. Thereafter, iterative review of these known elements served to prevent personal bias from influencing analytic conclusions.

The researcher sought answers to three principal questions, each closely related to the other. In response to the 14 primary phenomenological questions, participants related
personal experiences filled with detail and nuances of social intercourse. Questions 1, 1a, 2, 2a, 3, 3a, 4, 4a, and 5 focused on understanding how employees perceived their service culture. Questions 3a, 4a, 5, 7, 7a, 8, 8a, 9, 10, 10a, and 10b focused on capturing the influence of service cues on critical thinking. Questions 4, 4a, 5, 6, 6a, 6b, 7a, 11, 11a, 11b, 12, 12a, 12b, 13, 13a, 13b and 14 focused on capturing the influence of service cues on creative thinking. Analysis of the data revealed that experiential descriptions of service culture appeared throughout the responses, unrestricted to a single sequence of questions. Similarly, elements influencing creative thinking and critical thinking appeared in multiple responses, and not limited to the originally designated questions. Therefore, analysis of the phenomenon occurred holistically, with attention given first to the constructed reality used by each individual to understand their unique experiences, and then to the specific elements within that reality that influenced their creative and critical thinking performance.

The researcher used thematic analysis to aid in the interpretation of the results. This technique assisted in the transition from the broad consideration of the data to a narrow and nuanced comprehension of the individual’s point of view. The distillation process provided analytic rigor and enhanced the ability to discover patterns and commonalities within participant experiences (Boyatzis, 1998; Fereday & Muir-Cochrane, 2008).

As an initial step, the researcher developed a preliminary coding manual based on the theoretical framework and applied it to the data produced in the pilot study. The coding proceeded iteratively, changing to reflect new ideas and concepts that emerged from the data. Thereafter, continuous refinement of the manual occurred, until the codes
consistently captured the richness of the phenomenon. The researcher incorporated validation into the process by engaging an active duty military member from the researcher’s social network to review the codes to help minimize bias.

After determining that the initial manual was as bias-free as possible, the researcher carefully coded the participant’s transcripts. Such coding necessitated full immersion into the data and line by line evaluation to check for consistency of interpretation. The manual facilitated the data analysis, enabling identification of recurring themes within the raw data.

Upon completion of the initial manual coding, the researcher incorporated a secondary validation step to challenge personal assumptions and identify areas warranting deeper review. The NVivo 11 text analysis platform served as an objective tool to validate the coding manual and the thematic coding process. The NVivo 11 scan produced a list of frequently occurring words for comparison against the list of manually identified themes. Analysis of this list pinpointed nuances within the themes missed during the manual review, and revealed potential bias-driven significance placed on experiences that were not commensurate with their prevalence within the body of data. Additional mental bracketing and manual review continued iteratively thereafter.

Organization of key words, codes, and themes within an Excel spreadsheet added additional rigor to the analytic process. The researcher found it necessary to notate the frequency of quotes supporting the themes, to ensure that the narrative accurately reflected the point of view of the participants, and not the personal assumptions and preconceived opinions of the researcher. Counting the frequency of quotes aligned to the themes led to the observation that the subcultures within the participant population were
relatively consistent with their responses, but evolved into three dominant points of view. Not all themes were different between the three subsections, but in certain areas, such as perception of the hierarchal structure and the role of leadership, the emphasis was distinctly different.

Analysis of each participant narrative in its entirety, as well as by individual question response enabled a broad to narrow consideration of the phenomenon. Download of each transcript into Microsoft Word provided a flowing transcript from each participant. Read in its entirety, the personal phraseology, tone, and colloquialisms were easier to understand, and potential ambiguities dispelled when placed in context to the entire dialogue.

Analysis of responses to each question individually enabled a narrow, comparative view of the study group. Download of each transcript into Microsoft Excel enabled consideration of the combined responses to each question. Creation of a separate worksheet for each question enabled contextual comparison of the participant responses. This method was especially useful for highlighting emerging themes, and identifying areas of divergence between senior versus mid-career, and military versus civilian.

The objective of the inquiry was to understand the essence of the lived experience. In addition to coding, the researcher dwelled in the minutia of the dialogue to consider layers of meaning not previously known or perceived (Finlay, 2014). This information revealed additional codes, and added additional nuances of meaning to the lived experiences. The researcher studied the information carefully and assimilated it into a narrative to synthesize the points of view.
Ethical Considerations

Potential ethical risks received consideration in the construction of this study. In accordance with the standards outlined in the *Belmont Report on Ethical Principles and Guidelines for the Protection of Human Subjects of Research*, produced by the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research in 1979, the researcher incorporated multiple precautions into the study to ensure ethical compliance. All participants were over the age of 18, and none were members of protected groups such as minors, prisoners, or individuals with mental impairments. The data collection and analysis process included strict confidentiality. Participants received detailed information about the nature of the research, its uses, and its implications. The record retention plan consists of the storage of participant consent forms in a secure file at the researcher's residence, and destruction of the documents after June 1, 2019. No harm came to the participants because of the research, and they received no material gain in exchange for study participation. Neither Race, sexual orientation, gender, economic status, nor any other form of diversity was a consideration for participation. The applicability of the research topic and the exclusion of vulnerable subjects were the basis for selecting the target population. The research did not involve participants from groups unlikely to be among the beneficiaries of subsequent applications of the research.

Limitations

The researcher set delimitations on the sample population to encompass only individuals serving in the U.S. DOD who were members of LinkedIn, on assignment to the DIA in the NCR. The results of the study may not fully reflect the experiences of the
larger population, as members of the LinkedIn social media site may share a common characteristic that the rest of the U.S. DOD population does not.

Data collection was limited to the articulate communication of the participants. Input gathered from individuals who were inarticulate or who were unwilling to explain their perceptions in detail could have inadvertently skewed the overall analysis. Finally, the researcher limited the study to the present time and did not offer long-term analysis.

**Summary**

Chapter 3 included a restatement of the purpose of the study and the problem statement; a description of the research methodology and design; and an explanation of the data collection and data analysis processes. The chapter also included the sources of data, sample, rationale, and ethical considerations, as well as a description of the measures the researcher has undertaken to ensure validity and reliability.

From a practical applicability standpoint, the research may increase understanding of the specific elements of service culture that have the greatest influence on the creative and critical thinking performance of DOD personnel. Leaders might be able to use this information to adjust aspects of the prevailing service culture to improve performance and increase innovative capabilities within the U.S. DOD as well as other similarly structured organizations. In Chapter 4, the researcher will execute the practices described and present the findings.
Chapter 4: Data Analysis and Results

The purpose of this study was to gain an understanding of how the experience of working in the U.S. DOD service culture influences the creative and critical thinking of its personnel. The exploratory questions elicited rich and nuanced responses, which deepened the understanding of the experience of working within a military institution. The use of phenomenological inquiry uncovered commonalities within the employee experience and explored underlying structures that influence the cognitive performance of DOD personnel. The participant’s recollections provided insight into the following research questions:

RQ1: How do U.S. DOD employees describe their service culture?

RQ2: How does the experience of working in the U.S. DOD service culture influence its personnel’s critical thinking performance?

RQ3: How does the experience of working in the U.S. DOD service culture influence its personnel’s creative thinking performance?

This chapter contains a summary of the characteristics and demographics of the sample population. The researcher presents the data according to the themes that arose in the research to increase the clarity of the results. Graphic representations along with contextual narrative further illustrate the results.

**Descriptive Data**

The population for this study consisted of mid- to senior-level DOD employees, both civilian and active duty military, who were members of the social networking site LinkedIn. Positions at the mid to senior level in the DOD have standardized requirements for education levels and years of experience and require utilization of
creative and critical thinking in the execution of job-related duties. This standardization allows for logical generalization and maximum application of information to the larger population (Guetterman, 2015). Military members identify primary affiliation with their branch of service, and secondarily with institutional assignment, as they may also partner with DOD institutions outside of their branch in accordance with national defense requirements. Table 1 depicts the affiliation identified by the participants.

Table 1.

*Study Group Composition*

<table>
<thead>
<tr>
<th>Coded ID</th>
<th>DOD Affiliation</th>
<th>Rank/Grade</th>
</tr>
</thead>
<tbody>
<tr>
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<td>DoD Civilian</td>
<td>GG13</td>
</tr>
<tr>
<td>C03</td>
<td>DoD Civilian</td>
<td>GG15</td>
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<tr>
<td>C03</td>
<td>DoD Civilian</td>
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<td>DoD Civilian</td>
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<tr>
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<tr>
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<td>DoD Civilian</td>
<td>GG13</td>
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<tr>
<td>C11</td>
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<tr>
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<tr>
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<td>Airforce</td>
<td>O6</td>
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<tr>
<td>M11</td>
<td>Navy</td>
<td>O5</td>
</tr>
</tbody>
</table>

*Note.* DTS = declined to specify.
Data Analysis Procedures

The researcher used the phenomenological inquiry method to uncover the common truths that underpin participants’ intersubjective experience and to reveal the structures that shape participants lived experience (Lin, 2013; Sanders, 1982). The use of the epoche, eidetic reduction, and imaginative variation processes facilitated the data analysis. More specifically, before commencing analysis, the researcher utilized the epoche process to document opinions, assumptions, and areas of potential bias related to the research phenomenon. By bracketing this information and removing it from consideration, the focus of the analysis remained on the data contained within the narratives without interjection of personal preconceived notions (Sanders, 1982). The use of an online platform for response entry further ensured accuracy of data capture, preventing unconscious bias and human error from resulting in translation errors or the misrepresentation of participant responses.

In terms of data analysis, the researcher first organized the transcripts in Microsoft Excel. The researcher then coded participants M1–M11 for military personnel and C1–C11 for civilians to facilitate the analytic process by distinguishing between the two primary types of permanent DOD employees. Next, the researcher used eidetic reduction to conduct immersive, repetitive reviews of the transcripts (Moustakas, 1994; Sanders, 1982). The application of thematic analysis guided the grouping of statements based on similarity and repetition to identify patterns and themes (Green & Thorogood, 2009). The employment of open coding enabled the identification of concepts from the data, rather than from preconceived ideas, and served to reduce complexities by segmenting the data into smaller units and distilling the information into distinct facets of
the phenomenon. As coding advanced, the researcher added new key terms and codes based upon nuances in the data, while eliminating others due to inapplicability or redundancy.

An external review of the coding ensured the trustworthiness of the codes, themes, and subsequent data analysis; and that the researcher’s personal views did not bias the analysis. Experts on the researcher’s university dissertation committee peer reviewed the research throughout the dissertation process, providing an additional measure of quality. To achieve further validation, the researcher exported the narratives into Microsoft Word and Microsoft Excel formats, and imported the data into the NVivo 11 qualitative data analysis software. Comparison of word frequency data to the researcher’s manually identified themes identified unconscious biases, revealing some themes such as communication and problem solving had infrequent or nonexistent occurrences in the actual narratives. While both concepts occur naturally within an organization, the nuanced descriptions did not provide emphasis on these areas. This comparison stimulated further bracketing, resulting in an additional intensive review of the data to ensure that the final themes accurately represented the essence of participants’ lived experience.

The utilization of imaginative variation provided additional perspectives on and implications of the phenomenon. To facilitate this process, the researcher arranged the codes and their descriptions in tabular format for comparison between groups. Division of the participants into subpopulations based upon DOD affiliation, service branch, and career level provided a basis for comparison of hidden frames of reference and common and divergent meaning structures. The researcher considered the data from different
angles, roles, and frames of reference to identify the underlying and precipitating factors that contributed to participants’ lived experiences (Lin, 2013; Moustakas, 1994).

Results

The results of the study are divided into three sections based on the research questions.

RQ1: Description of Service Culture

The first research question related to how do U.S. DOD employees describe their service culture. To explore this issue, the researcher asked respondents to describe their personal experiences and perceptions of working within the U.S. DOD. Five findings were derived from the responses:

- Service cues relating to dedication to the mission and the ideology that failure is not an option heavily influenced the experiences, motivations, and perceptions of the participants.
- Participants believed that their service culture followed a hierarchal construct.
- Within the subject organization’s U.S. headquarters, the hierarchal culture supported a risk-adverse environment, in which decision-making was a slow, laborious process controlled by the senior levels of the organization.
- The emphasis on the relevant service cues depended on the participants’ proximity to the mission area.
- Significantly different emphases on service cues exist within the same organization based on physical proximity to the mission area. In general, all ranks are encouraged to execute critical thinking and autonomous decision-
making in the field. Further from the field, these types of activities are often
discouraged in subordinates.

Dedication to the mission. Within the narratives, a sense of duty to the mission
was a pervasive theme. Regardless of whether respondents felt positively or negatively
about their working conditions, organizational constructs, leaders, or colleagues, concern
for the success of the mission was clear. The ideology that failure is not an option is a
dominant service cue. Within the context of this study, participants most frequently
described experiences relating to perceptions and fears of mission failure.

The roles held by employees of the U.S. DOD are varied and highly specialized,
making interdependent units with shared priorities necessary for mission success.
Regardless of the role the employee plays, the criticality of the mission underpins the
formation of the U.S. DOD mindset. Missions that have the potential to protect lives or
facilitate the freedom of vulnerable people are particularly influential in emphasizing the
importance of mission success. Participant M05 described his perception of the national
defense mission as a black and white, win or lose proposition:

Success is like a team sport. Your success as win or your failure as lose. When
innocent people no longer have to live and fear Daesh it is a win. When we bring
the Iraqis up a couple notches in all of the staff functions that is a win. When we
do not do these things, we lose, and therefore we are not successful in our
mission.

Respondents expressed a shared personal commitment to meeting mission
objectives successfully, even when the barriers to success were internal rather than
external. Several participants shared feelings of frustration and failure, describing
experiences where they did not meet the mission goals as effectively or efficiently as they felt they should. Participant C03 related that he struggled with feelings of failure when political barriers and divergent internal priorities hindered his efforts to achieve mission success:

I felt unsuccessful when I was working with another agency to implement a desktop solution. The politics made it almost impossible to get anything done and I could only see the failure of the project, not what had actually been accomplished. It took multiple other people telling me a lot of progress had been made, but I still could only see failure because of all the things I wanted to change to make the project run way more efficiently and wasn’t able to implement the ideas/changes.

Participant C04 related an experience in which his desire to achieve mission success was hampered by those in his organization. Recalling positive actions leading to success, he noted that key success factors were tenacity, negotiating skills, and a willingness to modify goals to ensure a win-win situation:

Mission was at risk due to organizational indecision, inability of people to step out and drive accountability on items of critical importance, and the general lack of urgency to tasks until they become so late that crises ensue. I was able to achieve mission success by pushing past the delay and indecision of our organizational structure to obtain approval for a very important and time critical task.

Reflecting on his desire to achieve, Participant C07 stated, “I felt like a failure when the things I am passionate about were not important to leadership and I was not
given the resources I needed to make a difference.” He explained that his ability to succeed was often thwarted by diverging internal priorities, leading to his feelings of frustration and failure.

Internal procedures within large organizations are sometimes inefficient and not conducive to mission success. Participant M04 reflected that the methods used by his organization make him worry about missing mission objectives: “My current organization relies on other centers for coordination and action when budget, personnel, and other priorities conflict. The delay tactics or ‘ninja moves’ as one of my peers calls them, makes a person wonder how anything gets accomplished.”

The shared experiences reflected a deep-seated desire to contribute to the success of the mission. When faced with internal barriers, emotional turmoil often resulted. Emotions ranged from frustration and anger with organizational leadership to internal feelings of shame and failure.

**The hierarchal construct.** Participants described the service culture within the hierarchal construct as a risk adverse environment not conducive to efficient decision-making. Strict adherence to hierarchal decision-making and limited autonomy influenced participant perceptions of their service culture. Participant C03 related that she felt overly restricted within her role and could not recall feeling successful in her current organization. Instead, she reflected on a more positive experience in her prior assignment, with a different military institution: “The last time I truly felt successful I managed my whole program, in charge of my budget, and able to make decisions about my program without having to get any type of approval from leadership.”
The hierarchal construct featured prominently in the experiences and perceptions of Participant C04. She described a chaotic environment with rapidly changing priorities. Frequent changes in leadership directives prevented planned execution of mission objectives, while the hierarchal construct restricted the ability to express alternative points of view that might have otherwise improved operational performance. She noted:

Ideas go bottom up. Decisions go top down. Daily drive by crisis distribution occurs such that the branch leaders each have something to work other than the plan made the day before. This then delays other urgent issues which makes snap decisions, driven by near deadlines, the norm. I used to brainstorm the direction when there were clearly alternate methods to achieve that may be more direct and more apolitical. This is a behavior rarely viewed favorably. It’s very top down – “Do as I say, when I say to do it.”, with little tolerance for differing viewpoints. Alternatively, when seniors disagree with the method, but are willing to let it be attempted, my experience is I get very little top cover. If successful, they ride the wave of success; if anything less than successful, I absorb the full wrath of those above with no top cover.

Participant C06 related that there are multiple decision points within their hierarchal structure that culminate in a slow, cumbersome process for making decisions. He recalled that each leader within the hierarchy required a uniquely tailored version of a single presentation, adding additional time to make the decision, and further delaying the process:

People are reluctant to make a decision because it may fail. For example, in a division, there are eight layers of management to make situationally aware; the
briefing has to be ‘tweaked’ for leadership (so they can make an informed decision). If you clocked when someone had a recommendation to the time of decision, it could be 6 or more months. In some cases, these recommendations may never make it out of branch level.

Participant M04 recalled his persistence in the face of repeated delays and rework. He believed that his tenacity to ensure mission success overcame burdensome requirements driven by leaders who were reluctant to make a decision:

Decision briefs are created, vetted by leaders at multiple levels, adjusted, presented, and then told to come back with more info by the senior leader. There was a time when I pushed to incorporate the analyst community in the testing of capability prior to deployment to production. Meeting after meeting the decision was pushed off until finally the management team gave in and allowed it. It could have easily been forgotten but seeing the bugs and hearing the analyst concerns made me push for resolution.

Contrasting experiences in which she felt successful versus those she did not, C10 recalled an assignment outside of organizational headquarters in which decision-making was at lower levels, enabling her to have autonomy within her area of responsibility. She compared this experience to her current assignment, where the influence of organizational headquarters emphasized the hierarchal construct, which made her feel marginalized and ignored:

In the past I felt really successful when my leadership gave me free rein to pursue projects to resolution without interference. They stood ready to back-me up and provide top cover, but they did not direct every effort. Most recently (working for
this organization) was when I took ownership of a problem no one wanted to spend time or energy contemplating because they felt there was no political significance in resolving an issue that did not directly affect the NCR. Because of that indifference to anything outside of the beltway, I was able to interact and operate freely and make decisions with far-reaching impacts without interference from those who had no direct information, interest or involvement with the local customer organization. I was punching beyond my weight. Skip forward and now my every effort is either ignored, minimized or stymied because what I’m doing bears directly on NCR-concerns.

According to Cameron and Quinn (2011), traditional hierarchal decision-making constructs place the burden of responsibility and the potential repercussions on the decision-maker. The experiences described by this study’s respondents conveyed that the opposite effect more commonly occurs. Participant M01 explained the phenomenon from a military point of view:

When a senior leader executes a decision, that leader bases the decision on the input from subordinates. If the senior leader makes a bad decision, he or she was misinformed. On the other hand, if a subordinate makes a bad decision, the subordinate did not apply the appropriate quantity and quality of critical thinking required for the task.

Respondents provided multiple examples of experiences in which leaders allocated disparate repercussions for bad decisions made by management, versus those made by subordinates. Participant C04 related that the organizational leaders were rarely accountable for mistakes: “When bad decisions are made by our leadership, it is very
infrequent when discernible repercussions or corrective action occurs. When subordinates make bad decisions, corrective action is much more immediate and consistent.”

Participant C06 observed multiple inconsistencies in the allocation of repercussions for failure. He shared that accountability for leadership errors is lacking, while repercussions for lower level employees appears to be dependent upon the strength of their internal network:

There is no consequence for a bad decision made at the highest level, and leadership has amnesia when it fails. When a subordinate makes a bad decision, Impact depends on whether they in the club or not. If they were, then it was not a bad decision. For the others, they quietly atrophy and blend into the masses (C06).

Commenting on the lack of leadership accountability, Participant C07 described witnessing the results of an enterprise-wide poor decision over the course of several years:

There was a time when bad decisions were made, and the consulting contractors were let go, but the leadership was not released. The situation would have been handled much differently if subordinates or staff made the bad decisions. Many staff and managers have experienced being sidelined in the wake of making bad decisions, which fostered a risk-averse culture rather than a learning, self-analyzing, adjusting organization.
Reflecting on the internal tolerance for autocratic leadership behavior, Participant M06 observed that his leadership ignored him, so he feels disinclined to propose new ideas in the future:

Senior leadership has zero accountability for bad decisions. It’s the “I’m in charge so we’re doing it my way” mentality. Workforce feels unheard, so offers few solutions because they know nobody is really listening.

**Proximity to mission.** A differentiation perspective arose in participant experiences based on the vicinity of the mission area. The terms *in the field* and *in the fight* repeatedly appeared within the dialogue to distinguish duty locations near mission areas, often with eminent risk, or special assignments physically distant from routine stateside operations.

Both U.S. DOD civilian and military respondents described a clear focus of intent and purpose when assigned to the field. Subordinates and leaders consistently described trust in leadership and their command and indicated a climate supportive of candid communication, healthy competition, and job satisfaction. All groups identified a high level of critical and creative thinking to solve immediate strategic and tactical problems with whatever resources were at hand. Participant C06 described feeling very focused and clear on the mission intent when in the field:

As an OIC (Officer in Charge) in Afghanistan, the mission mattered, the work I and my team did mattered, and lives were held in the balance. It was real. Traits exhibited were a sense of urgency, mission orientated, service orientated, empathy and pride for the military. There were definitely attitudes and we may have disagreed on the methods but not the outcome.
However, when assigned to positions further away from the field, the focus on the mission became less clear for some. Highlighting the divergence in mission approach and emphasis, participant M04 commented:

I have been in my current division for 8 months and have yet to feel successful given a mission of red tape, politics, and roadblocks. My previous division revolved around being in the fight. I felt successful dealing with real-world events, briefing senior leaders, making things happen and having awareness that my efforts benefit the warfighter.

Echoing this sentiment, participant M09 shared:

I currently feel unsuccessful at this unit and others do as well. Part of it comes from micromanagement and a lack of trust up and down the chain of command, but that’s not always the case in the military, it’s just way things are where I am stationed right now.

Within the same context, participants observed confusion over mission prioritization, a lack of urgency, and disjointed mission execution in work locations away from the field.

Participant C04 identified multiple internal barriers, noting:

Issues are caused by organizational indecision, the inability of people to step out and drive accountability on items of critical importance, and the general lack of urgency to tasks until they become so late that crises ensue. Daily drive-by crisis distribution forces branch leaders to work on different things than the plan made the day before. This then delays other urgent issues, which makes snap decisions, driven by near deadlines, the norm.
Due to issues with focus and prioritization, the ability to achieve mission objectives away from the field often requires additional skills to navigate internal bureaucracy and political barriers. Participant C04 shared an experience in which he overcame internal roadblocks by employing soft skills:

I was able to push past the delay and indecision of our organizational structure to obtain approval for a very important, time critical task by exhibiting tenacity, negotiating skills, and a willingness to modify goal to ensure a win-win situation.

No participant described their environment as completely devoid of mission focus, but several related experiences in which personal priorities took precedence over mission objectives. Participant C03 shared that he could not overcome a sense of failure due to his inability to circumvent political impediments:

When I was working with another agency to implement a desktop solution the politics made it almost impossible to get anything done and I could only see the failure of the project because of all the things I wanted to change to make the project run more efficiently.

All respondents communicated their experiences from a mission-focused perspective. While participants repeatedly described experiencing frustration with both leaders and colleagues, none of the participants described losing focus themselves.

Underscoring this separation of perception, Participant C07 noted:

What stands out most to me is that there is no groundswell of innovation across the agency. There is no sense of urgency by many to move forward with game-changing technologies that can really make a difference in our work performance. Too much speculation about the future at the change of the administration is
causing us to hesitate rather than accelerate forward. In the face of skepticism, leaders and staff do not hunger for objective facts to work through our necessary changes.

The participants described their service culture differently depending upon the location of their assignment. While the study group self-identified as members of a U.S. DOD agency headquartered in the NCR, several respondents described deployment environments, in addition to those located in the United States. This aspect is notable, as the participants experienced different levels of service cue influences depending upon their proximity to field locations. Regardless of location, dedication to the national defense mission dominated the lived experiences of the participant group. The descriptions of successes, challenges, fears, and frustrations consistently centered on the shared goal of mission success.

**RQ2: Service Culture Influence on Critical Thinking Performance**

The second research question focused on exploring how the experience of working in the U.S. DOD service culture influences the critical thinking performance of its personnel. In response to the questions, participants provided a rich description of their experiences of critical thinking within the DOD service culture, detailing service cues that influenced their critical thinking performance, including leadership and decision-making constructs, mission imperatives, and physical proximity to the field. Respondents described organizational expectations and norms influencing their frequency and efficacy of critical thinking, as well as the implications for questioning existing paradigms and status quo practices within the DOD environment. Four findings were derived from the study group’s responses:
Almost all of the civilian respondents expressed negativity, distrust, or both, towards autocratic leadership.

Many participants believed that DOD leadership discouraged critical thinking in their subordinates.

The hierarchal structure of the U.S. DOD positions primary decision-making authority at the leadership level.

Service cues convey the notion that questioning leaders’ decisions or exhibiting skepticism toward leaders’ stratagem are undesirable actions.

**Autocratic leadership.** The relational paradigm of an autocratic leader establishes absolute dominance over subordinates (De Hoogh, Greer, & Den Hartog, 2015). While the practice has fallen out of favor in modern business practices, the concept of overt dominion is pervasive in the U.S. DOD service culture (Wong, 2002). The Uniform Code of Military Justice (UCMJ) established a law requiring military members to follow lawful orders issued by superior officers. Failure of a military member to follow orders is punishable as a criminal act (Redmond et al., 2015). While this legal requisite does not extend to civilian members of the U.S. DOD, all of the civilian participants in this study described experiences influenced by autocratic leaders.

More specifically, most of the civilian respondents described feelings of negativity toward leadership autocracy within the U.S. DOD leadership construct. Conversely, the military respondents did not focus on the element of autocracy within their service culture, appearing to accept it without significant concern. Participant M01 described the disparity as a standard part of military service culture:
Within the Army culture, we are initially taught to receive orders and execute. As a leader progresses upward through the rank structure, the weight scale between reception/execution of orders and the creation/issuance of orders begins tipping toward the latter. The appropriate quantity of “questionability” applicable by the executor of the order is dependent on your rank. As a field grade officer, I am supposed to question everything and recommend the appropriate fix-action or appropriate course correction. Again, rank determines the ability to question orders as well as how the questioning will be received by higher leadership.

Participants shared several experiences relating to fear and punishment for challenging leaders’ orders and strategies. Respondents described negative repercussions when their leaders perceived the acts of questioning, exhibiting skepticism, or disagreeing with a leadership decision as challenges to the leaders’ authority. Several respondents described demoralizing experiences when the service cue to follow orders conflicted with the service cue to execute the mission successfully. Participants further conveyed feelings of anger and anxiety when leadership directives posed the potential to impede mission success. Participant M03 explained:

I felt ineffective when my ideas were stifled by senior leaders and discounted outright. In the military you support your higher, but when your higher is a controlling micromanager, you execute solely on their ideas. I felt unsuccessful because I did not think my senior leaders’ ideas were helpful to the cause.

Participant M07 believed that her critical thinking performance has decreased since commencing work within the U.S. DOD service culture:
I think the frequency has changed. At times I feel like we aren’t expected to think but just to do. I attribute this to the environment created by my supervisor. If we do something outside his realm of thinking or that isn’t in a preplanned sequence then it is considered wrong or going against guidance.

Analysis of the data revealed that service cues relating to leadership autocracy permeate U.S. DOD service culture far beyond the duty to follow orders. The participants felt that there is an expectation that subordinates not only follow orders, but adjust their thinking to align with their leader’s opinions. Respondent C07, a senior executive, described an experience in which he achieved significant career success by conspicuously aligning his thinking to mirror that of his superiors. “To move forward, I exhibited traits of being on my boss’ agenda, and aligning the program proposals to my boss’ and Director’s agendas”. Failure to adhere to this particular service may result in negative ramifications. Participant C03 observed:

There is very little trust in our organization. As soon as a decision is made by someone (who the organization claims to have the autonomy to do so), if senior leadership does not like it, all decisions around that topic are either taken away or micro-managed. My organization talks about not having to follow the chain of command, but as soon as a subordinate does not follow it, or they give an answer that is not in line with current strategy, your leadership skills are questioned because that person works for you.

Participant C07 recalled several instances of career impeding repercussions for mistakes. It is his perception that the current environment is shaped by the fear that these experiences inspire. He observed:
Many staff and managers have experienced being sidelined in the wake of making bad decisions, which fostered a risk-averse culture rather than a learning, self-analyzing, adjusting organization. Critical analysis is not fostered in this environment; too many employees and managers wait to be told what to do rather than proposing data-driven proposals to make things better (C07).

Reflecting on a traumatic incident with an autocratic leader, Participant C08 recalled feelings of humiliation and embarrassment:

I received direction to change the way I was doing business with my section in front of several people. I recommended a different solution. The senior leader put their hand in my face to stop me from speaking and said it “will be done”.

Now when I’m with this individual I take notes in the meeting and keep my thoughts to myself.

The service culture does not appear to be supportive of subordinates who express divergence with leadership thinking. Participant C10 experienced a rapid career regression and public reprimands after failing to align with her leaders’ strategy and style:

A while ago, I was a star in the organization where I was working. Unfortunately, my boss had different ideas on how I should develop my leadership style and, when it became clear that I had a different approach that he did not agree with, he began to publicly berate me and assigned me to lesser duties. It was crushing to be so embarrassed by somebody I had respected up until that point.

**Decision making.** Due to the life-and-death nature of many of the decisions U.S. DOD leaders make, the gravity and importance assigned to leadership roles are
particularly high. From the battlefield to the boardroom, and everywhere in between, the decision-making authority rests with its leaders. Eight of the 11 civilians and two of the 11 military participants described their perception of success and failure in terms of decision-making autonomy. In general, the higher the career level of the participant, the greater the autonomy and perceived success described. The three highest-ranking participants, holding ranks of SES, O7 (General), and O6 (Colonel), related that they currently felt successful and empowered to operate autonomously in their working environment. The remaining seven civilian respondents expressed dissatisfaction and frustration with their inability to make decisions independently.

Participant M02 noted that there are times when an expectation may exist for lower ranking decision making, but it coexists with negative ramifications if the decision is wrong:

In the Army, one has to be very careful when exercising critical thinking. As an NCO we are always expected to make decisions in the absence of orders however proceed with caution as this may backfire. Sadly this is only desirable if you yield positive results.

Participant M06 described feeling successful in his environment when allowed to operate independently. He recalled that his own leadership style reflected his belief that individuals performed best when given greater levels of autonomy:

While running my Branch I had the freedom to manage and execute my mission with limited HHQ oversight. I had the ability to organize, train and equip as I saw fit. I ran the organization with centralized control but decentralized execution. Section chiefs had the freedom to execute their specific day-to-day mission
without constant intervention. People understood the boundaries of their authority but knew they had leadership support. This helped to spur innovation and encouraged personnel to take responsible risks without fear of reprisal. People were generally excited to come to work and information flowed freely. People were proud of their accomplishments and were recognized appropriately. Further emphasizing the connection between autonomous decision-making and feelings of success, Participant C03 related:

The last time I truly felt successful was about 5 years ago when I was running a program all by myself. I was able to make decisions about my program without having to get any type of approval from leadership.

Similarly, Participant M03 experienced feelings of success when given the freedom to execute the mission without interference:

I felt most successful in the past when I was empowered to be a leader of my own organization and my higher headquarters has not encumbered us with staff work and my boss has given me the freedom to lead as I see fit.

The hierarchal structure within the U.S. DOD supports a decision-making process whereby subordinates provide the detail and information surrounding a given topic, and those in leadership positions evaluate the facts and make a decision. Employees who are intent on meeting the mission are often frustrated with their lack of operational autonomy and the additional steps required by their service culture’s decision-making construct. Several participants expressed disgust when describing experiences relating to the process within U.S. headquarters:
• Decision briefs are created, vetted by leaders at multiple levels, adjusted, presented, and then we are told to come back with more info by the senior leader (M06).

• When our civilian supervisor is not here, there is a collective sigh of relief and we can all do our jobs without feeling like we will be questioned numerous times after providing the same information to the boss (M07).

• Poor decision making, especially the time to make a decision, has a profound impact on morale. A leader has an obligation to simplify the decision-making process, set expectations on how long it should take to get a decision, and make it, don’t ignore it and hope it goes away (C03).

**Proximity to mission.** The description of environmental factors relating to critical thinking diverged depending upon proximity to the mission. When describing experiences located in the field, participants expressed trust in leadership and their command and described a climate supportive of candid communication, healthy competition, and job satisfaction. Both civilian and military respondents experienced a high level of critical and creative thinking to solve immediate strategic and tactical problems with whatever resources were at hand. Conversely, in nondeployed organizations, participants experienced resistance when attempting to conduct critical thinking at subordinate levels. Participant C07 noted, “Critical analysis is not fostered in this environment; too many employees and managers wait to be told what to do rather than proposing data-driven proposals to make things better.”
RQ3: Service Culture Influence on Creative Thinking Performance

The third research question explored how the experience of working in the U.S. DOD service culture influenced the creative thinking performance of its personnel. In response to the questions, participants described their creative thinking experiences within the U.S. DOD service culture and explained the implications of time, resources, interpersonal team dynamics, and leadership receptivity on creative thinking performance. The main findings are:

- Participants routinely engaged in creative thinking when the service cue to follow orders conflicted with the service cue to achieve mission success.
- Personal recognitions and rewards for creative or innovative contributions were relatively uncommon. In general, participants felt intrinsically motivated to find creative solutions to meet mission objectives.
- Both military and civilian respondents described collegial, supportive relationships that fostered creative thinking in team constructs.

Contradictory service cues. Service cues signaling the inadvisability of disagreeing with command guidance permeated the experiences of most of the participants, causing frustration and anxiety when respondents believed that the guidance inhibited mission success. Participant C04 described feelings of irritation with his inability to drive the mission to successful completion: “My daily work environment is driven by crisis management, with limited ability to plan my work and execute to plan without constantly being taken off task to address other issues.” In a similar context, when prevented from pursuing actions he considered necessary to succeed, participant M09 described the challenges inherent in meeting the U.S. DOD mission: “It is a
demanding environment in and of itself, compounded by the way we plan and communicate, or should I say the way we fail to do those important items in an organization like ours.”

Participants engaged in creative problem solving when they faced both internal and external barriers to successful mission execution, as well as when they felt fearful of challenging leaders’ orders. Despite participants’ skepticism and safety concerns relative to leaders’ poor decision making, participants took creative measures to meet mission requirements. Most of the participants expressed that they routinely exercised creativity to meet mission requirements. According to Participant C05, creative problem solving is required “every day, across multiple areas, against numerous problems, against numerous requirements.” Similarly, Participant M02 revealed, “it’s really hard to name a specific time because I use creative thinking every day. I feel like I get tasked because I do not know how to say no and I get the job done.”

**Personal commitment.** Participants related multiple creative thinking experiences, but few described receiving personal rewards for their contributions. Participant C01 noted that he neither received, nor expected to receive, recognition: “I implicated a new request for change process; I was not rewarded directly but was glad to make the contribution.” Similarly, participant C11 shared, “Many of my ideas have been implemented. Only once, was it ever rewarded or even acknowledged.”

Within the U.S. DOD service culture, the service cue to meet the mission appears to drive creative thinking, irrespective of extrinsic rewards. Participant M03 reflected that his motivation for creative problem solving drew from his desire to make the mission successful:
If my idea succeeded, the organization was better because of it. If my idea did not succeed, we moved past it and did not waste any additional time on it. I was never particularly rewarded for my contribution, as I was more a reflection of the entire unit rather than one idea.

Similarly, participant C03 explained,

I am currently talking with my deputy chief about implementing changes to our IT environment. Not sure if this will be rewarded, but for me that is not the point. The point is to try to move our organization forward with the way industry is doing it today.

Expressions of personal commitment to mission success appeared prominently throughout the responses. The internal motivation of the individual seemed to inspire tenacity and perseverance in pursuit of mission objectives, irrespective of extrinsic rewards.

**Team commitment.** Both military and civilian respondents described collegial, supportive team relationships. According to participant M09, strong peer relationships form based on the need to lean on each other in adverse circumstances. M01 noted:

It’s a team fight. The team is together in support of accomplishing the mission. If the necessary resources are not provided, or some other roadblock is hindering mission accomplishment, then the team will figure out an alternate solution. The closer-knit the team, the easier, quicker, more efficiently the solution is developed.

Participant C04 observed that creativity and problem-solving behaviors thrive at the team level in very challenging circumstances:
Thank God my team is awesome. We deal with the majority of our issues at our level. We work as a team, expressing our varying opinions and attacking issues as creatively as our boundaries allow. We allow for diversity of thought; we meet weekly to address the issues at hand and collaboratively work out how best to address the majority of them while I provide top cover. This has allowed us to accomplish quite a bit, within the environment provided, despite lack of timely decision-making by our and other interfacing organizations. We heavily rely on our personal networks to get things moving and completed while the political fray is at work above us.

Supportive team relationships reinforced positive aspects of the service culture. Team collaboration enhanced the commitment to mission success, and provided safe avenues for pursuing alternative solutions. The collegial environment appeared consistently in the participants’ descriptions, with no discernable variances related to proximity to mission, rank or military affiliation.

**Leadership influence.** The role of U.S. DOD leadership is pivotal in fostering an environment conducive to creative thinking. Respondents described service cultures in which creativity was stifled as well as others in which it flourished. Participant M01 explained that internal U.S. DOD environments have differing levels of openness to change, and the existence of adversity to change has a tendency to render creative ideas “null and void.” Participant C02 observed, “the frequency of my creative thinking has lessened due to task saturation and emphasis on meeting suspense regardless of relevance or mission impact of tasks.” Participant C03 described an environment supportive of creativity, relating, “I don’t feel stifled creatively in the workplace, in that I feel that I
have the freedom to try to solve problems. I am always looking for ways to solve problems so that people can do their job.” Participant M11 reflected on the changes in his creative thinking performance during two consecutive assignments with significantly different leadership influences:

On an overseas 14 month, unaccompanied tour, opportunity abounded for creativity and innovation in programming. My previous tour was a disaster with no creativity or innovation allowed. The difference – Command leadership (CO & XO). Previous was dictatorial and condescending. Follow-on tour was open, free for thought and creativity. On the follow-on tour I felt that they respected and understood what I brought to the table.

Recalling a time in which she felt highly creative, Participant C10 described an environment with leadership support, free of excess fear of repercussions, and sufficient autonomy to experiment:

When faced with staffing, training and funding shortfalls, my leadership gave me free run to 1) find free training 2) work manpower sharing arrangement 3) gave me the authority to determine work priorities over several supporting work-centers and 4) allowed me to pursue self-help solutions using existing resources to fulfill our basic IT requirements. It was a joy to be given such leadership backing to try new things. When it failed, I was not punished but given the opportunity to try again.

The influence of the U.S. DOD leader featured prominently in the participants’ experiences. When leaders communicated openness to creative problem solving, participants responded with increased levels of creative and innovative thinking.
Conversely, when leaders demonstrated a lack of respect for individual ideas, many participants responded by either reducing their creative activity, or declining to share their ideas outside of their peer group.

Summary

The purpose of this phenomenological study was to understand how the experience of serving in the U.S. DOD influences the critical and creative thinking of its employees. This study emerged from the need to examine how to increase the pace of innovation within the U.S. DOD, as well as the gaps in scientific literature relative to the influence of U.S. DOD service culture on the underpinning cognitive processes of its employees’ critical and creative thinking. In Chapter 4, the researcher addressed the qualitative findings that emerged from the data through thematic analysis. The researcher described how the findings built logically from the problem and how the phenomenological design addressed the research questions. Finally, the researcher discussed techniques and procedures followed to safeguard the accuracy and validity of the data.

Overall, the researcher found that the level of emphasis placed on service cues was significant to its influence on the individual. The service culture in field locations had less emphasis on adherence to hierarchal decision making, and greater emphasis on the urgency of the mission than the service culture within U.S. headquarters. Accordingly, participants recalled engaging in higher levels of critical thinking during field assignments. Service cues relating to personal dedication to mission, the unacceptability of failure, and adherence to hierarchal chain of command particularly influenced fostering a creative thinking environment. The presence of fear within the
service culture, relating to repercussions for poor decision-making or demonstrated skepticism of leadership decisions or stratagems, appeared to suppress critical thinking in lower-ranking employees. The same service cues created an opposite effect for creative problem-solving in pursuit of successful mission execution.

Chapter 5 contains a narrative of the summary, with related conclusions and recommendations. To facilitate critical analysis, the researcher provided a review of the research limitations, theoretical and practical implications for the reader’s consideration.
Chapter 5: Summary, Conclusions, and Recommendations

This phenomenological study unveiled the influence of service cues and service culture on U.S. DOD employees. The gap in the scientific literature is extensive in this area, and little research currently exists in the intersection between critical and creative thinking, service cues, and service culture. While service cues and service cultures differ between military institutions throughout the world, fundamental commonalities exist such as the mission of war and the need to form a unified fighting force. Understanding how service cues influence employee cognition may provide insight to leverage in the effort to improve critical and creative thinking performance in U.S. DOD personnel, which could contribute to the success of the U.S. national defense mission.

The lived experiences of the respondents contained nuances of meaning within their social and organizational context. The participants described their experiences in their own words, making it clear that the phenomenon is complex and contains unique meanings for each person. The use of a qualitative phenomenological design enabled individual participants to describe their feelings and perceptions of their environment freely, unencumbered by structured response requirements. The subsequent chronicles provided both a broad understanding of the service culture as well as a narrower focus on the distinct variations in individual experiences. The researcher analyzed the essential meanings of the phenomenon and integrated the descriptions of participant experiences into dominant themes: dedication to the mission, the hierarchal construct, proximity to the mission, autocratic leadership, decision making, personal commitment, team commitment, and leadership influence.
In Chapter 5, the researcher presents a summary, the conclusions, and recommendations for future study. After recapping the study findings in relation to the research questions, an examination of the results in conjunction with guiding theoretical frameworks and current scientific research provides clarity on the significance of the study. The chapter then concludes with a discussion of the effectiveness of the research methods, limitations, and recommendations for future scholarly and scientific research.

**Summary of the Study**

The purpose of this study was to gain insight into how service culture influences the critical and creative thinking of U.S. DOD employees. Three questions formed the inquiry focus: First, how do U.S. DOD employees describe their service culture; second, how does the U.S. DOD service culture influence the critical thinking of its employees; and third, how does the U.S. DOD service culture influence the creative thinking of its employees.

Capturing the essence of the phenomena required learning how employees perceived their service culture. The qualitative, phenomenological design enabled the study group to use their own words and focus on areas that were most meaningful to them. In this way, the employees explained how service culture shaped their motivations, molded their concepts of success and failure, and influenced their thinking. Carefully crafted, open-ended questions elicited detailed descriptions of employee experiences and facilitated the formation of a conceptual understanding of the phenomenon.

The design required time-intensive thematic analysis of the data, with the incremental refinement of codes and themes as comprehension of the phenomena increased. Synthesis of the results with scientific literature provided additional context.
and depth to the research narrative. Conclusions evolved based upon the frequency and emphasis placed by the participants. Notably, participants spent greater time and provided more nuanced descriptions of experiences that were emotionally charged, versus those that appeared to be routine. Memories described with intense focus provided insight into potentially influential service cues, while descriptions lacking detail and emotion suggested areas of limited influence.

While participants were selected based upon the common attributes of mid to expert-level DOD employees in a single military institution, distinct differences in responses emerged early in the analysis. Use of the critical case sampling method enabled maximum applicability to the larger population. Upon analysis, differences in vantage points and emotional reactions to the service culture emerged. For purposes of maximum applicability, the researcher synthesized the themes common to the majority of the participants in the following narrative. The analysis and recommendations for future research sections of this paper contain additional notations of instances where significant divergences appear within participant responses.

**Summary of Findings and Conclusions**

The purpose of this study was to explore how the service culture of the U.S. DOD and its inherent service cues influence the critical and creative thinking performance of its personnel. The findings built logically from the following: (a) the belief that there may be specific service cues that influence the cognitive performance of members of the U.S. DOD; (b) the belief that working within the service culture of the U.S. DOD may reinforce the effect of service cues, and (c) the belief that the psychological climate, organizational norms, and practices within the U.S. DOD may influence the frequency
and efficacy of its employees critical and creative thinking. Participant responses established that the influence of service culture is pervasive in the U.S. DOD working environment. Unlike civilian organizations, U.S. DOD personnel receive immersive training aimed at shaping their performance, attitudes, and morals throughout their careers. The nuanced responses the study group provided revealed that DOD value statements, such as those contained in the U.S. Army “warrior ethos” are neither mottos nor slogans—they are ways of thinking and behaving that members have integrated into their personae.

**Research Question 1**

The first research question was: How do U.S. DOD employees describe their service culture? In this aspect, participants shared perceptions of their operational environment, organizational construct, and command climate. It is important to note that the influence of service culture differs from that of corporate culture due to the criticality of the mission, the uniqueness of the environment and the complete immersion of the individuals within (Arnaud & Tinoco, 2013; Kolditz, 2009). While most organizational cultures integrate employees into an existing environment with shared values and norms, service cues inculcation is unique to military institutions (Chiu & Tu, 2014). The practice entails immersive training aimed at altering the psychological and cognitive processes of the individual. While certain service cues, such as those associated with the warrior ethos, are shared throughout the U.S. DOD, the emphasis differs between agencies, branches, and areas of specialization, thus creating service cultures that are unique to each institutional identity (Redmond et al., 2015).
Here, many participants contrasted their experiences within differing U.S. DOD service cultures, emphasizing areas of conflict that felt incongruous to the service cues with which they most strongly identified. This unprompted comparison provided insight into service cues such as the dedication to the mission and the unacceptability of failure that transcended location and mission, as well as those that were unique to a particular operation, such as the organizational construct or geographic location.

**Dedication to the mission.** All of the participants expressed the desire to meet the U.S. DOD mission. The unanimity of that response suggests that dedication to the mission is a foundational service cue for members of the U.S. DOD. This finding aligns with recent research, which posited that the sense of duty permeates all other U.S. DOD cultural dimensions due to the grave significance of the mission it supports (Arnaud & Tinoco, 2013). The experiences participants shared for this study support Arnaud and Tinoco’s (2013) theory that the duty to ensure mission success and the obligation to follow orders dominated employees’ experiences.

Service cues that emphasized participants’ commitment to the mission appeared to stimulate a consistent sense of purpose among the respondents. This fundamental value was evident in the consistent way in which participants described their efforts to achieve their mission, despite the often chaotic, confusing operating environment in which they worked. This finding resonates with the theory that the perpetuation of service cues helps to create unified, cohesive military units (Carver, 2012; Chiu & Tu, 2014; Kolditz, 2009). Within the participant group, the cognitive influence of duty manifested in intrinsically motivated members who continuously strove to meet their mission objectives.
The service cue relating to dedication to the mission appeared to have both positive and negative influences on employee critical thinking. While the study group’s dedication to the mission drove persistent focus, their need for success manifested in less positive behaviors. The fear of failure often delayed the decision-making process. While the exhibition of skepticism is a necessary component of critical thinking, many leaders engaged in repetitious questioning as an act of decision avoidance, rather than as a tool to render a logic based decision. Interestingly, one executive observed that personnel behave as if they are “paid to do, rather than paid to think” (C07). This senior leader’s perspective suggests that part of the rationale for the constricted decision process is a lack of trust in the competency of subordinate personnel. There was a persistent tendency for leaders to require multiple levels of approval, even for low-risk decisions, such as the formatting of internal briefs and repetitive administrative processes. Even in such scenarios, participants noted that decisions were not final until a senior leader concurred.

**The hierarchal construct.** Analysis of the data within the context of the competing values framework (Cameron & Quinn, 2011) suggested that the U.S. DOD service culture is hierarchal. The scholars described a hierarchy culture as one characterized by a formalized organizational construct with highly defined roles and structures. The description of attributes and competencies required for success within the hierarchal culture provided insight into implicit reward and punishment factors that may influence employees’ creative and critical thinking performance.

Due to the importance that U.S. DOD members place on rank, senior leaders have a significant amount of influence. When describing successes within their service culture, individuals described their tendencies to act in alignment with their leaders’
opinion and frame proposals to corroborate leaders’ concerns. Conversely, participants who deviated from established mores, traditions, and philosophies described both blatant and surreptitious negative repercussions, such as stalled career progression and lost credibility. This finding aligns with the competing values theory (Cameron & Quinn, 2011), which holds that individuals who demonstrate competencies in line with the dominant culture tend to be successful at work, which in turn reinforces the dominant culture. Participants shared several examples of leaders who rewarded sycophantic behavior and punished those holding divergent opinions. According to the study group, to attain leadership rank one must demonstrate adherence to the group think of the established authorities. This phenomenon makes increasing critical thinking throughout the organization challenging, as rewards trigger repetition.

The critical nature of the national defense mission imbues great significance on both mission success and mission failure. Participants described a risk-adverse culture requiring multiple levels of approval for most decisions. Accordingly, final decision-making responsibility was at the top echelon levels of leadership. Both senior and subordinate respondents intimated that there was an assumption that only leaders were competent to make decisions. This belief resulted in delayed or derailed decisions, thus increasing the risk of mission failure. In such cases, the participants believed that their leaders did not prioritize mission success over the fear of mission failure. For some, the requirement to execute on leadership decisions conflicted with their desire to achieve mission success. Nearly one-third of the study group defined success in terms of autonomous decision-making authority. These respondents reflected that they felt most
successful when they could determine their own course of action and make decisions without additional layers of approval.

When presented with roadblocks preventing mission success, participants described their performance in one of two ways: Either the individuals found creative ways to achieve their goals or they attempted to influence the outcome through leadership channels, and expressed frustration and feelings of failure when they were unable to do so. These negative emotions may be related to the service cues that reinforce the concept that failure is not an option. Indeed, this ideology permeated participant experiences and appeared to contribute to a phenomenon in which leaders exhibited reluctance to allow subordinate employees to make decisions autonomously. The fear of mission failure then reinforced the fear of reprisal. Individuals who directly or indirectly caused mission failure experienced both explicit and implicit repercussions in varying degrees of severity, depending on their rank and role in the organization.

Respondents consistently described a repercussion disparity phenomenon in which consequences for poor decisions allotted to subordinate employees were more severe and more immediate than those apportioned to leaders. The participants offered little insight into the rationale for this phenomenon, nor did the literature suggest the causes for such repercussions based on the service cues or military values communicated. Additionally, repercussions differed based on employment type. Active duty service members are subject to the Uniform Code of Military Justice (UCMJ), which establishes direct consequences for certain types of failure, insubordination, or criminal activity, ranging from loss of income, dishonorable discharge, incarceration, to loss of life. For civilian employees, repercussions are less severe but remain significant. Loss of status,
position, and termination of employment are all potential repercussions for failure in the U.S. DOD.

**Proximity to the mission.** Frequent changes to assignments are a normal component of the U.S. DOD construct, and the emphasis on service cues differ depending upon geographic location, civilian versus military leadership, and proximity to areas with inherent risk. Respondents described divergent cultural experiences depending on the physical location of their missions. When relating experiences located in U.S. headquarters, most participants described a very formal environment in which decision-making was a slow, laborious process controlled by senior levels of the organization. Many participants experienced excessive interference in their lower-level, operational decision-making, which reduced their need to execute critical thinking.

Additionally, participants expressed the notion that the sense of urgency to meet mission objectives felt stronger when deployed to field assignments than in organizational headquarters. Field assignments in proximity to areas of imminent risk presented conditions that altered the way that leaders prioritized and emphasized established service cues. While the hierarchal construct remained intact regardless of location, there were expectations of increased autonomous action in field locations and increased amounts of critical thinking expected from those in non-leadership positions. While dedication to the mission was a dominating influence in all locations, participants’ clarity of focus and unit cohesion in field locations was lacking in their U.S. headquarters experiences.

Mission focus and sense of urgency are service cues deliberately emphasized by field leadership to ensure critical mission success. Employee internalization of these
values exemplifies the strength of influence of the hierarchal leader, as described by Cameron and Quinn’s competing values framework (2011). Frost and Martin’s integration theory further supports this finding, as it purports that an organizational leader could modify and align culture according to their values, such that employees adopt them as their own (2011). These findings suggest that DOD leaders could execute calculated adjustments in the emphasis of specific service cues to elicit changes in employee cognition.

**Research Question 2**

The second research question was: How does the experience of working in the service culture of the U.S. DOD influence its personnel’s critical thinking performance? Cacioppo et al. (2011) hypothesized that service culture forms a social network for its members with internal dynamics that encourage or discourage trust, acceptance, and diversity. In response to exploratory questions, participants related experiences that revealed a profound sense of duty and commitment to mission success. The dedication to duty influenced participants’ motivation, perceptions, and emotions at both the individual intra-cognitive and organizational inter-cognitive levels. Several participants recalled the formation of family-like bonds during deployment, and expressed deep appreciation for their teammates. Conversely, descriptions of in-group collectivism and distrust between leaders and subordinates featured prominently in the interviews as well, and appeared to decrease the frequency of employee critical thinking.

When asked whether they believed that the experience of working within the U.S. DOD service culture influenced their critical thinking, very few felt that their performance was unaffected. Interestingly, half of the participants believed that the
service culture caused the frequency of their critical thinking to decrease, while several others felt that the service culture caused their critical thinking to increase. Of those citing an increase, all were military personnel save one. Interestingly, the anomalous civilian respondent held a senior leadership position within the subject organization. The rank of this respondent is worth noting, as the findings suggest that decision-making authority resides with those holding senior leadership positions. Numerous members of the participant group shared that their leaders expressed frequent skepticism throughout the decision-making process. While exhibition of skepticism alone does not equate to critical thinking, Cohen’s three-part theory suggests that skepticism is a key component (Cohen, 2000).

Response analysis indicates that the majority of participants believed that the experience of working within the U.S. DOD service culture influenced the critical thinking performance of its personnel. No trends or incongruities appeared in the rank distribution of positive and negative responses, other than the single civilian executive referenced in the prior paragraph. Further analysis of the themes and nuances of the remainder of the study revealed additional service culture elements, such as leadership autocracy, decision-making, and proximity to the mission that appeared to influence critical thinking performance.

**Autocratic leadership.** Participants poignantly expressed their desire to ensure mission success and their frustration about having to follow orders that they felt were counterintuitive to the objective. In general, questioning of lawful orders or exhibition of skepticism towards leadership information is undesirable within the U.S. DOD service culture. According to Cohen (2000), the act of critical thinking requires that an
individual consider existing knowledge, evaluate the accuracy of new information, and analyze the composite to render a logic-based decision. Several participants attributed the decline in the efficacy and frequency of their critical thinking to the managerial practices employed by U.S. DOD leadership, as well to limitations in time resulting from a task saturated, chaotic environment. Service cues relating to respect for authority, duty to follow orders and the requirement to follow the chain of command appear to limit the ability to freely express disagreement or skepticism about leadership directives or strategic philosophies. Likewise, autonomous decision-making is uncommon outside of senior leadership, unless the employee works in a field location.

Most of the civilian and several of the military respondents expressed negativity, mistrust, or a lack of confidence in the individuals holding leadership positions in their organization. Participants cited draconian practices such as public humiliation and career reprisals when they expressed divergent opinions to civilians in authoritative roles. These practices are not part of any official U.S. military branch code of conduct, value, or ethic promoted through service cue inculcation. Although unsanctioned, the repressive practices were a pervasive component of the study group’s service culture and negatively influenced subordinate critical thinking. It is unknown whether this is a unique phenomenon within this sample population. The findings conflict with sources such OCS Infantry Hall of Fame member Lt General James Helmly (Ariail, Hiatt, & Quinet (2013), Harvard Business Review (Kolditz, 2009), and the U.S. Army Leadership Manual (2004), which have described the U.S. DOD leader as one who puts the needs of the follower before those of the leader and embraces the tenants of servant leadership.
Decision making. The hierarchal structure of the U.S. DOD positions primary decision-making authority at the leadership level. The practice of restricting decision-making authority to leadership roles and requiring multiple levels of approval for basic operational decisions appears to suppress critical thinking at subordinate levels, while increasing it at more senior levels. Common phrases such as ‘shut up and color’ and ‘salute smartly and carry on’ are unofficial mottos within the service culture that underscore the message to follow directives without arguing. These findings suggest that subordinate members receive service cues that are counter to the execution of critical thinking. Per Cohen (2000), if optimization of critical thinking is to occur, the culture and supporting organizational structure must support and reward the act of questioning existing paradigms and standard solutions. In essence, the service culture often discourages those in subordinate ranks from challenging the status quo, either by overt punitive actions, or by more subtle cues, such as a leader’s failure to give credence to subordinate opinions, questions or concerns.

Within the same paradigm, service cues encourage individuals in leadership positions to employ critical thinking progressively throughout their career. This reversal does not negate the hierarchal construct or reduce the cue to follow orders without delay or contention. Rather, managers direct this type of scrutiny at the subordinate input. Leaders require substantial data to make decisions and frequently scrutinize, question, and challenge the input received from their subordinates. While exceptions exist based on organizational roles and duties outside of command teams (Aitken, 2011), expressions of disagreement or displays of skepticism toward individuals of higher ranks are not encouraged in any of the hierarchal levels of the organization.
According to Cameron and Quinn (2011), traditional hierarchical decision-making constructs place the burden of responsibility and the potential repercussions of actions on the decision maker. The experiences described by this study’s respondents conveyed the finding that the opposite effect more commonly occurs within the subject organization. Participants relayed multiple examples of leaders who received forbearance for failures under their purview and addressed the issue by assigning blame and punitive repercussions to subordinate employees.

The phenomenon of disparate repercussions appears to drive—and be driven by—more than one service cue. Forbearance empowers senior employees to execute decisions autonomously with limited fear of reprisal, thus reinforcing the hierarchical service culture. Leaders strengthen the ideology that failure is not an option by apportioning punitive actions to subordinate ranks. The duty to follow lawful orders forms the basis for this practice, as leaders make decisions based on information provided by their subordinates. Therefore, if the decision is incorrect, the assumption is that the information was insufficient to make the correct decision.

**Critical thinking in the field.** Several participants described experiences in both U.S. headquarters and field assignments. Within these narratives, the emphasis on hierarchical decision-making diverged significantly based on the participant’s physical proximity to the mission area. In contrast to the formal, multitier decision-making enforced in U.S. headquarters, employees experienced more autonomy at lower levels when assigned to field locations. In such circumstances, a sense of urgency and shared purpose appeared to coincide with increased expectations for subordinates to make decisions independently. Interestingly, while participants noted a reduced focus on
hierarchal decision-making in field locations, none identified a de-emphasis on the duty to follow orders. As with dedication to mission, this service cue may be fundamentally dominant, as its influence does not appear to fluctuate between locations.

The participants who described the service culture of field assignments identified the frequent use of critical thinking. While the events and circumstances of each story were unique to the individual, the descriptions of their service culture were not. In field locations, where time is of the essence and the sense of urgency for action is pervasive, critical thinking flourished. In such conditions, leaders encouraged all ranks to make independent decisions within their areas of responsibility, thereby removing barriers for questioning existing information, and enabling decisions based on critical thinking.

**Research Question 3**

The third research question was: How does the experience of working within the U.S. DOD service culture influence its personnel’s creative thinking? In response to the open-ended questions, participants described their creative thinking within the U.S. DOD service culture and explained the implications of time, resources, interpersonal team dynamics, and leadership receptivity on their creative thinking. While most respondents stated that they routinely engaged in creative thinking, over half believed that their frequency had decreased within their current environment. Despite the reduction, creative problem solving appeared to be common. The study group attributed their use of creative thinking to their desire to ensure the success of the mission.

When presented with barriers and impediments, whether due to factors relating to bureaucratic or hierarchal processes, autocratic leaders, or forces and conditions external to the organization, participants persistently sought creative means to meet mission
objectives. This commitment of purpose did not appear to stem from the desire for rewards, as participants explained that personal recognition for creative or innovative contributions was infrequent in their service culture. Separate from finding creative solutions to existing problems, nearly half of the participants revealed that their willingness and desire to suggest new concepts or ideas had decreased during their tenures. The respondents attributed this reluctance to the perception that organizational leadership would not use their ideas.

Unity of shared purpose is a foundational element of military institutions, and the U.S. DOD appears to make no exception to that principle. From an interindividual perspective, the majority of participants indicated that cohesive units and teams were normative aspects of the U.S. DOD service culture. The study group described their peer environments as collaborative, offering opportunities for close, trusting relationships. This type of environment appears to fall within Maslow’s self-actualization phase, wherein optimal creative thinking may occur after meeting the most basic needs such as food, shelter, and safety (Maslow, 2014). Within this setting, the unity of shared purpose, the employee’s dedication to the mission, and the shared ideology that failure is not an option appears to foster creative thinking. It is important to note, however, that the hierarchal decision-making construct may limit the implementation of team decisions. This limitation results from the concept that team decisions are in actuality merely recommendations, subject to the same multi-tiered decision process as those engineered by individual contributors.

According to Maslow (2014), a critical component of creativity is the ability to execute decisions without fear of ridicule or strangulation of ideas. The theologian held
that the presence of fear within the culture of an organization could result in a lack of creative thinking. In the U.S. DOD, the leader is fundamental in setting the climate culture, affecting morale, and establishing a sense of personal safety in the work environment. While leaders hold power to deliver negative repercussions and control most decisions throughout the organization, it does not appear to suppress creative thinking.

While respondents did describe the presence of fear of negative repercussions within their service culture, it appears that their fear of mission failure was stronger than the fear of ridicule or the strangulation of ideas. The transient nature of U.S. DOD assignments may contribute to leaders’ lessening influence on creativity. Participants further related contrasting experiences based upon differing assignments or tours of duty. While one leader may personally influence the culture of a particular division or unit, their effect may be temporary if their methods are not part of the primary U.S. DOD service culture.

Implications

Theoretical Implications

Prior to this study, there was insufficient data to formulate a hypothesis regarding the influence of service culture on the critical and creative thinking of U.S. DOD employees. While it was known that service culture is an area defined by its social interactions, the full spectrum of its influence on cognition was unknown. Based on this
study’s research, the complexity of the participants’ experiences suggests that there are several service cues that influence creative and critical thinking.

The critical case sampling rationale supported the assertion that the sample size and selection of study participants was sufficient to produce an accurate result (Cresswell, 2013). Generalizations such as equitable education and experience limited participation to individuals within a tight range of U.S. DOD civilian and military ranks. The subject organization contained a mixed population of civilian and military members representing all branches of the U.S. military. Due to the lack of empirical data on the phenomena, the inclusion of both active duty military and civilian DOD employees was appropriate for the initial exploration of the phenomena. The researcher analyzed the results as a whole, as the sample size was insufficient to ascertain trends specific to subtype organizations within the military institution.

The heightened time, convenience, and confidentiality benefits of online interaction rendered it most appropriate for the subject population. The primary disadvantage of the online format was the fact that facial expressions and tone of voice were not part of the response assessment. To overcome this limitation, when presented with areas of ambiguity, the researcher sent clarification questions via e-mail to facilitate accurate interpretations.

Another limitation was that the participant group used multiple colloquialisms and service-specific terms and acronyms. While the researcher held a general understanding of military institutional terms, the nature of service culture predicates that each institution establishes a unique language distinct from other military institutions. In keeping, the subject population applied nuanced definitions of these terms. Since authoritative
dictionaries for each dialect of departmental language do not exist, clarifying questions and contextual analysis contributed to an accurate interpretation.

Three foundational theories provided the basis for understanding and interpreting the nuanced data captured through this phenomenological inquiry: the competing values framework (Cameron & Quinn, 2011), the three-part theory of critical thinking (Cohen, 2000), and the self-actualization theory (Malsow, 1968). Analysis of participant responses using the competing values framework provided insight into the principles of hierarchal culture (Cameron & Quinn, 2011). The model aligned well with the experiences described by the study group, and identified aspects of this type of environment that commonly require improvement. As the foundational premise of Maslow’s (2014) self-actualization theory, a critical component of creativity is the ability to execute actions without the fear of ridicule or strangulation of ideas. According to Maslow, the presence of such fear or suppression within the culture of an organization could result in a lack of creative thinking and, therefore, a lack of innovation. Analysis of participant responses revealed that fear had a significant presence within the service culture. However, contrary to Maslow’s theory, the presence of fear and ridicule did not appear to suppress creative thinking performance significantly in the subject population, as most stated that they routinely engaged in creative thinking. This conflict may stem from the fact that Maslow’s theory does not consider the influence of inculcated service cues such as the commitment to the defense of the nation, which places the mission at a higher level of importance than the preservation of an individual’s life.

Finally, Cohen’s three-part theory of critical thinking was particularly relevant to the phenomenological analysis, as it provided guidance on the cognitive processes and
behaviors that must be present for critical thinking to occur. Based on Cohen’s theory, if critical thinking is to occur optimally, the service culture and its supporting organizational structure must support and reward the act of questioning existing paradigms and standard solutions. Yet, as participants repeatedly noted, these conditions exist primarily in higher levels of the organization, leaving critical thinking at lower levels unsupported.

**Practical Implications**

The results suggest that service cues influence employee critical and creative thinking in both positive and negative ways, but much remains unknown about the phenomena. Service cues with the strongest response across all participants—dedication to the mission and the unacceptability of failure—may warrant deeper focus and increased emphasis. As a notable caveat, certain aspects such as autocratic leadership and disparate repercussions may not be military service cues. Rather, they may be a separate phenomenon occurring within the subject institution’s organizational culture.

The application of the insights gleaned from this study may promote positive change in the cognitive performance of the DOD workforce. As Cacioppo et al. (2011) discussed, altering the dynamics within the service environment can improve the performance of its members. As such, U.S. DOD leadership could strategically incorporate adjustments to the service cues identified within this study to effect positive change in the cognitive performance of its employees.

**Recommendations**

Recommendation will be divided into two sections: Recommendations for Future Research and Recommendations for Practice.
Recommendations for Future Research

Using a phenomenological method provided insight into the experience of working within the U.S. DOD service culture, but numerous avenues for future research remain. Because the design centered on capturing the essence of the phenomenon, the researcher drew on theoretical arguments and evidence from extant cognitive research to provide a conceptual framework for the participant’s experiences. The researcher did not quantitatively test the participants’ critical and creative thinking performance to determine statistical correlations between variables. Accordingly, a valuable expansion of this research is to empirically test the correlations between specific service cues and the cognitive scores of the population. Such an experiment could isolate the cues and identify their strength of influence in different institutions.

The research revealed differences in service cues emphasis based on the proximity of the employee to the mission area. For instance, while participants noted a reduced focus on hierarchal decision-making in field locations, none identified a de-emphasis on the duty to follow orders. As participants noted increased critical thinking in these locations, it would be beneficial to investigate further to understand how variances affect other service cues, and other types of cognitive performance.

The empirical data from this study provides a basis for conducting future research on the phenomenon with different target populations, methods, and designs. From a phenomenological perspective, repetition of the study with a larger sample size in the same institution would enable a researcher to isolate each U.S. military branch within a joint military institutional environment. Such isolation would serve to identify subtle differences in the influence of common cues within the subject population. Repetition of
the study in military institutions comprised of only one service branch would further segregate the phenomenological data, allowing deeper exploration of unique service cues and additional validation of shared cues. Additionally, the findings within the research open up new research questions, such as those exploring differentiation aspects of the phenomenon such as male versus female, military versus civilian, millennial, generation X versus baby boomers.

**Recommendations for Practice**

This study exposed several implications for practice. The research identified service cues that influence creative and critical thinking within the U.S. DOD service culture. According to Cameron and Quinn, (2011), a hierarchal construct can adjust for improved performance without losing its fundamental nature and focus. Therefore, the first recommendation for future practice is to work within the existing hierarchal construct, emphasizing the cues that enhance creative and critical thinking, and de-emphasizing those that suppress them.

The service culture contained cues that discourage subordinates who question decisions or voice skepticism, while rewarding leaders for demonstrating the same behaviors. The study group noted that adoption of leadership philosophy and opinions enhanced their career progression, while expressions of divergent opinions or disagreement with a leader’s decision or strategy often resulted in a loss of status or career regression. These cues perpetuate a culture devoid of critical thinking.

Many individuals have experienced years of cue inculcation, learning to suppress their critical thinking in favor of higher level guidance before becoming leaders themselves. They may see no reason to change, as this practice worked for them in the
past. This type of behavior requires significant cognitive retraining, personal and emotional growth on the part of the individual. Programs that teach soft skills such as emotional intelligence, respectful dialogue and conflict resolution may help with the initial transition. Additionally, changing the reward structure to promote those who demonstrate the ability to apply critical thinking effectively is essential. Finally, management would benefit from creating strategic planning sessions that include employees in subordinate ranks, emphasizing divergent thinking and collaborative brainstorming, without consideration of rank or position.

The findings suggest that excess use of multi-tier decision constructs introduces undesirable consequences. When senior leaders focus on low-level tactical decisions, their ability to focus on strategic or high-risk considerations is reduced. The resultant time constraints limit review of the data, which often results in delayed or derailed decisions. Ironically, the leader relies on the input of the subordinate expert, who must produce a brief simple enough for the executive leader to grasp, but complex enough for the salient details to become evident. Here, the creation of the report should prove the competency of the subordinate expert to render a logical decision on his or her area of expertise. A flattened decision process should result in reduced bottlenecks, and increase critical thinking throughout the organization. Such an alteration may require iterative stages of adjustment, and necessitate clear communication of the parameters of authority.

Empowerment of subordinate employees offers numerous benefits in terms of employee cognitive development, improved morale and increased efficiency. Be that as it may, as some organizational leaders expressed the opinion that subordinates cannot be
trusted to make decisions without their oversight, the effectiveness of this recommendation relies on the assumption that their opinion is inaccurate.

Comparison of critical thinking performance in field locations versus U.S. headquarters provided insight into additional service cues to adjust for improved creative thinking performance. Participants noted that field locations offer a clarity of focus and prioritization of mission requirements that is lacking in U.S. headquarters. This may be because individuals in field locations are assigned for a finite period, to accomplish a specific mission. The reason for deployment is clear at the onset, resulting in a consistent focus on the top priorities.

In the field service culture, leaders emphasized service cues that support dedication to the mission, and reduced the emphasis on administrative protocol relating to the hierarchical construct. Additionally, leaders in the field often assigned a low priority to tasks that did not contribute to mission accomplishment. This finding is supported by Cohen (2000), who held that modifications such as the reduction of micromanagement, elimination of unneeded reports and paperwork, removal of unnecessary constraints, and reassignment of some decision-making to lower levels of the organization can improve overall performance in a hierarchical culture.

Overall, insight generated by this study increases awareness of service culture and cues’ influence on employees’ creative and critical thinking performance. DOD leaders could use this information to adjust aspects of internal service culture strategically to improve the performance of their personnel. This technique is in keeping with current U.S. DOD practices, which use immersive programming to develop desired traits and to eradicate undesirable behaviors (Cacioppo et al., 2011; Marino, 2014).
Concluding Remarks

One of the most intriguing ideas in organizational science is the concept that targeted manipulation of cultural elements could affect positive change in employee performance (Frost & Martin, 2011; Ghasemi et al. 2014). The service cues identified herein may be vital elements of service culture that DOD leaders can selectively modify to achieve positive outcomes in the cognitive performance of their employees. The significance of practical applicability is clear, as creative and critical thinking support innovative production, which in turn supports the mission of national defense (U.S. Department of Defense, 2015). The success of this mission is paramount to the survival and well-being of the American people and directly contributes to the stability of the world economy.
References


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Appendix A

Exploratory Questions

1. Please describe the mission of your branch or agency.
   a. What elements of the mission resonate most strongly with you?

2. Please describe your current organizational culture (command climate/peer relationships/daily work environment).
   a. What stands out most to you about it?

3. Please describe a time when you felt really successful in your organization.
   a. What traits or behaviors do you think you exhibited at that time that contributed to your success?

4. Please describe a time when you felt unsuccessful, either in a particular effort, or in your organization in general.
   a. What factors caused you to feel this way?

5. Please describe how decisions are made in your workplace.

6. Please describe a time when you had to solve problems within a work team.
   a. How well did the team interact?
   b. Did you feel comfortable discussing your ideas openly?

7. Please describe a time when a bad decision was made by leadership. What actions were taken?
   a. Was the situation handled differently than when subordinates or staff made bad decisions?

8. Please describe a time when you engaged in critical thinking at your current workplace.
a. What was the result?

9. Do you think the frequency or level of your critical thinking performance has changed since coming to your current environment?
   a. If so, what has occurred that is contributing to this?

10. Please describe a time when you received direction that you did not agree with.
   a. Did you question the direction? Why or Why not?
   b. If you did, how was this received by leadership?

11. Please describe a time when you felt really creative in your workplace.
   a. Is the frequency of your creative thinking different than it was before you worked in your current environment?
   b. If so, what factors are contributing to this?

12. Please describe a time when you introduced a new idea or concept in your organization.
   a. Was your idea implemented?
   b. Were you rewarded for your contribution?

13. How often do you contribute new ideas/solutions?
   a. Is the frequency different than it was before you worked in your current environment?
   b. If so, what factors do you think contribute to this?

14. Is there anything additional that you would like to add?
Appendix B

Letter of Consent

Date

Dear Participant:

I am a Doctoral student at Columbia Southern University and am conducting a research study to understand the influence of Department of Defense service culture on critical and creative thinking performance.

I am requesting your participation in an interview during which you will be asked questions relating to your perception of the service culture of your organization, and the influence it has on your critical and creative thinking performance. Your participation is completely confidential, and your responses will not be associated with your name. The interview will take between one and two hours and can be completed on-line. You have the right to refuse to answer any question and to stop the interview at any time.

Your participation is voluntary. You can choose not to participate, or if you do participate, you can withdraw from the study at any time without penalty. Your decision to participate or abstain is purely voluntary, and your responses are anonymous. You must be 18 years of age or older to participate in the study.

The objective of the research is to explore the influence that Department of Defense service culture has on critical and creative thinking performance. Although there are no immediate benefits to you personally, your participation will contribute to the body of knowledge on this topic, and may ultimately be used to effect positive change to enhance critical and creative thinking performance. Your responses are anonymous. The results of this study may appear in reports, publications, or presentations, but your name will not. The researcher will house the consent forms and the data in a secure database for a minimum of three years following the completion of the study and will dispose of the documentation in a manner that ensures the protection of the confidentiality and anonymity of all participants.

If you have any questions regarding this research, please contact Michele M. Gable at Michele.S.Gable@Gmail.com. If you have any questions about your rights as a participant in this research, or if you feel you have been placed at risk, you can send an email to dba@columbiasouthern.edu and someone will contact you.

Sincerely,

Michele M. Gable
Michele.S.Gable@Gmail.com
240.818.8384

I ___________________________ consent to participate in the study described, understand that my participation is voluntary, and that I can withdraw from the study at any time.