A Systems Perspective on Army Health and Discipline

BY

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Bachelor of Arts in Mathematics
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Submitted to the System Design and Management Program
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ABSTRACT

Healthy and Disciplined Soldiers provide a unique competitive advantage to the United States Army that cannot be replaced by the acquisition of technological weapons systems. The United States Army system for managing health and discipline has historically been robust; however, the prolonged conflicts in Iraq and Afghanistan have highlighted the need to reexamine the system of health and discipline policies, its architecture, and the dynamic effects on junior leader behavior. This thesis provides an analysis of this system by exploring the dynamic relationship between leader development, health and discipline, and an emphasis on warfighting mission capabilities. The author demonstrates the tradeoffs between mission capabilities, and leader development of Soldier health and discipline through a mixed methods approach that combines quantitative analysis of the published Army literature and qualitative field interviews. This thesis analyzes the architecture of the Army Health Promotion system, highlighting risks to capability development if the system architecture is not consistently managed across installations.

The author applies the object-process method to describing architectural models of policy systems and system dynamics causal loop diagrams to explain the evolution of the system during the post 9-11 war period. The author also uses quantitative article subject search to validate qualitative descriptions of the system behaviors.

The author suggests that there is some risk in the Army failing to more effectively manage Soldier health and discipline due to failing to properly describe the intended architecture of the Army Health Promotion system, resulting in architectural differences between installations. The author also recommends several potential system changes to affect the dynamics of the leader development.

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Table of Contents

Tables and Figures

Chapter 1 - Introduction

Motivation

"The strength of our Nation is our Army; the strength of our Army is our Soldiers." – General Odierno

The United States Army's capability to manage the health and discipline of Soldiers has atrophied as a result of being in a constant state of war since 2001. However, the United States Army is at a transformative precipice, preparing to enter a period of fewer large unit combat deployments, longer dwell times in local garrison communities, and a focus on a broader range of missions ("2012 Army Strategic Planning Guidance," 2012). This period of strategic reset will require different capabilities than those exercised in counterinsurgency (COIN), stability and support operations (SASO), and conventional warfare. Over the past 13 years, the Army focused on growing urgent capabilities in COIN and SASO while other capabilities related to Soldier health and discipline were declining. While the need to enforce the good order and discipline and encourage health promotion has existed since the earliest professional armies, the United States Army is at an intersection of increased demand for this capability, and a decline in its capacity to meet this demand. The first indication of changes to the health of the force was the growth in active duty suicides, which nearly tripled from 2001 to 2012, and exceeded the civilian population rate for the first time in 2008 (Schoenbaum et al., 2014). The result of this capability gap is also evident by the gap between criminal events in the Army and punishment issued by the command. While a number of undisciplined and criminal behaviors have been trending up, non-judicial punishment and courts-martial have trended downward (*Army 2020: Generating Health and Discipline in the Force Ahead of Strategic Reset*, 2012). The Army needs to quickly realign

its capabilities to match the increased demand for maintaining good order and discipline, and promoting total Soldier health. The current ability of the organization and its leaders to manage health and discipline are vital to sustain a healthy and disciplined force. Failure to quickly build this atrophied capability will result in difficulty maintaining acceptable levels of readiness, and risks strategic loss to fulfilling the Army's strategic vision.

Defining a Capability: Managing Health and Discipline

Commanders require the ability to prevent, intervene, and respond to a set of behaviors that are unhealthy (e.g., suicide, substance abuse) and undisciplined (e.g., driving under the influence, domestic violence, bullying). Health is a dynamic "state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." ("Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference," 1946) Commanders are responsible for maintaining good order and discipline, Soldier Well-Being, and promoting a positive command climate (*AR 600-20: Army Command Policy*, 2012). Further, Army studies suggest that these two populations are inter-related (*Army 2020: Generating Health and Discipline in the Force Ahead of Strategic Reset*, 2012; "Army Health Promotion, Risk Reduction, and Suicide Prevention Report 2010," 2010). Commanders can no longer manage discipline and health separately. The Army needs to recognize and generate an organization-wide capability to manage the health and discipline of the force as an essential part of total Army readiness.

Managing Health and Discipline in support of Army's Strategic Vision

As the Army returns to garrisons, training for a wide range of missions in an increasingly uncertain security environment, the ability to promote health seeking behaviors is essential to the Army's strategic vision: Prevent, Shape, and Win. This strategy asserts the importance of a more

agile and versatile force that is able to meet the requirements of Joint Force Commanders. Simultaneously, the Army will place more emphasis on shaping environments by participating in rotational training exercises with coalition partners. ("2012 Army Strategic Planning Guidance," 2012) The set of capabilities to promote health seeking behaviors and discipline in Soldiers is central to these strategic tenants.

Central to 'Prevent' is the Army's ability to remain a credible force. The capabilities of a nation's military are also recognized as the underpinnings of preventing potential adversaries or changing their motives by several deterrence theories in political science. Often these theories depend on the perceived capability of the defenders military, the national will to engage in action, or the potential loss to the adversary (Berejikian, 2002; Danilovic, 2001; Glaser, 1992). While the credibility of Army capabilities can be enhanced by modernizing weapon systems, and highly mission trained units, the credibility of the institution to the American people can also easily undermined by the behavior of Soldiers. Recent cases of sexual assault and harassment are costing the Army credibility at home, culminating in senate legislation that would have removed the determination of whether to prosecute sexual assault offenders from the chain of command ("S.1752: Military Justice Improvement Act of 2013," 2013). Although S.1752: Military Justice Improvement Act of 2013 was narrowly defeated in the Senate 55-45, this represents a serious break in covenant and sacred trust that the Army has with the nation. By solely focusing on training, the Army neglects health and discipline seeking behaviors, and continues to risk a loss of credibility, undermining its strategic goals.

Shaping efforts will involve more training rotations with coalition partners. ("2012 Army Strategic Planning Guidance," 2012) These training rotations involve US Army units visiting foreign countries and will inevitably result in interacting with the local population. The US Army

also has permanent forward stationed bases in foreign countries to support strategic deterrence. While the focus of these efforts is on mission training and partner capacity, the discipline of Soldiers can have strategic impacts and can ruin any gains made by the training exercise. In 2011, a private in the 2nd Infantry Division was convicted of raping an 18-year-old South Korean girl. (Lee, 2011) Incidents of indiscipline and violations of local laws continue to occur and require close management from senior leaders. In 2014, a series of incidents, ranging from sexually harassing Korean female employees at a water park to stealing taxi cabs, resulted in an agreement for US Soldiers to be prosecuted under Korean law. The commander of the 2nd Infantry Division affirmed that he would "not allow two careless acts of indiscipline to tarnish 2ID readiness and our strong relationship with our Korean neighbors." (Song, 2014) Incidents like these can cause real harm to the relationships the Army tries to build with its coalition partners and represent a threat to shaping efforts.

Generating health and discipline bolsters the Army's 'Prevent' and 'Shape' efforts, but also remains important in its effort to 'Win.' Managing Soldier health and discipline becomes more difficult while engaged in conflicts, but also becomes a lower priority than mission requirements. Therefore, the capability to manage health and discipline needs to be robust enough to withstand the battle rhythm of operations outside the garrison environment.

Soldier suicide data from 2004 – 2010 show increases in the 12 month moving average suicide rates for Soldiers currently deployed that generally follow the trend data for the population of non-deployed Soldiers through 2009. Figure 1, below, shows that the rate of suicide is generally higher while Soldiers are currently deployed (except in calendar year 2010) (Schoenbaum et al., 2014). While managing Soldiers with high risk of suicide has become an important process in garrison, the open access to means of completing suicide and the effect a

completed suicide can have on unit cohesion and morale make the capability of managing the health and discipline of Soldiers important in all phases of the Army strategic vision.

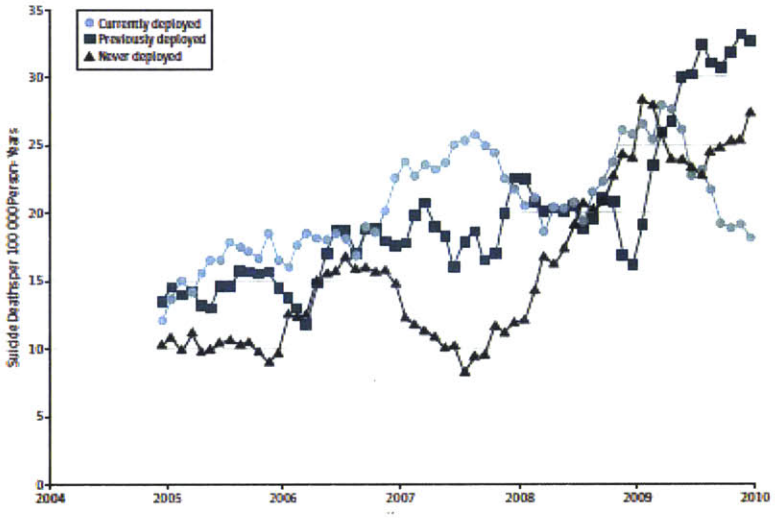

Figure 1 - Suicide Death per 100 000 Person-Years of Active Duty Army Service(Schoenbaum et al., 2014)

Beyond the risk of suicide and its effects on unit readiness, managing combat stress has been recognized as a way to reduce high-risk behaviors that undermine combat readiness, including substance abuse, fighting, and criminal acts(Stokes, Greer, & Hammer). In severe instances, Soldiers who are otherwise seen as loving fathers and responsible non-commissioned officers have committed atrocities in recent conflicts. Staff sergeant Robert Bales pleaded guilty to the murder of 16 Afghan civilians and setting their bodies on fire while deployed. The prosecution and defense both asserted that stress with his family and his career, along with the loss of fellow Soldiers on previous deployments, had been a causal factor in the event. As a result, the US Army was forced to suspend operations in the district (Healy, 2013). Commanders that fail to manage the health and discipline in favor of focusing on their 'mission requirements' risk negative consequences and the failure of their mission. Particularly in asymmetric environments where the enemy has a significant information warfare capability, incidents of

indiscipline have the potential to cause major strategic setbacks. The capability to manage health and discipline is a combat multiplier that supports and enhances mission capabilities across all areas of the Army's strategic vision.

The Ready and Resilient Campaign

The Ready and Resilient Campaign (R2C) can be thought of as an evolution and integration of several disparate, mutually supporting programs that address each issue of Soldier health and discipline individually. The purpose of R2C is to "establish an enduring culture change that integrates resilience into how we build, strengthen, maintain, and assess total fitness, individual performance, and unit readiness." ("Ready and Resilient Execution Order," 2013) Its mission is to integrate and coordinate Army programs and services, focus education and training, transform the assessment of individual fitness, and strengthen the Army profession. R2C shifts focus from Soldier health promotion to readiness and resilience of Army units. This shift in focus is a significant transformation and deserves special consideration in the design of the system, the services provided, and how the Army provides those services. This shift also underscores the need for a model by which commanders can measure the readiness of their units. The Army is still attempting to explain how resilience, physical, moral, and mental fitness in individual Soldiers contribute to the readiness of units. Further, in order for senior leaders to influence the behavior of junior commanders, they need to be able to measure and manage these dimensions of Soldier fitness and incorporate them into the model of Army readiness. Managing health and discipline at the organization level is linked with R2C because the Army uses R2C to determine baseline measures that track health and discipline associated data and to direct resources to the most effective programs. This section provides a brief description of the genesis of the R2C plan and an analysis of the current state of the system.

As the Army transitions from a constant state of deployments shortly after 9/11 to a more garrison-based force, it brings with it the cumulative effects of stress on Soldiers and their families. Evidence of this stress is observable in rising suicide rates, higher than the civilian rate for the first time since the Army has been collecting suicide trend data. Additionally, rates of sexual assaults, domestic violence, and drug and alcohol abuse have been increasing during this time period.("Army Health Promotion, Risk Reduction, and Suicide Prevention Report 2010," 2010) In response to the rising suicide rates, the Vice Chief of Staff of the Army (VCSA) directed a Suicide Prevention Task Force to investigate the problem and recommend solutions. The results were published in the *Army Campaign for Health Promotion, Risk Reduction, and Suicide Prevention("Army Health Promotion, Risk Reduction, and Suicide Prevention Report 2010," 2010).* The focus of this study was primarily to reduce the suicide rates; however, the report emphasized the interrelated problems of substance abuse, discipline issues, and Soldier suicide. The report's longest chapter is 51 pages on 'The Lost Art of Leadership in Garrison' in which the authors highlight several gaps in surveillance, detection, and intervention processes and systems that gave leaders situational awareness of the risk profile of their formations. The data seemed to show that leaders were ignoring or neglecting these systems, as if to implicate the Army in forgetting how to lead Soldiers in garrison environments.

The Army responded with an interdisciplinary solution to manage the complex spectrum of health and discipline issues in the form of re-writing publication *600-63: Health Promotion, Risk Reduction, and Suicide Prevention.* The primary implementation at the installation was the implementation of the Community Health Promotion Council (CHPC). While this solution was a response to public health promotion, it left the coordination of individual care and discipline issues to local unit commanders ("AR 600-63: Army Health Promotion," 2007). This allows for

variation in process execution between units, and likely greater variation between installations. An understanding of these variations in the context of the system may facilitate learning about the best practices in the context of managing these health and discipline issues.

The Army also responded by stressing the need for transformation efforts in the way it delivers support programs and behavioral health services. Many of these programs and services are offered under the Department of the Army (DA) G-1, or human resources. Programs like the Army Suicide Prevention Program (ASPP), the Army Substance Abuse Program (ASAP), Family Advocacy Program (FAP), Comprehensive Soldier and Family Fitness (CSF2), and the Sexual Harassment Assault Response and Prevention Program (SHARP), are organized to affect specific behavioral outcomes. As a result, leaders manage a growing number of training and reporting requirements. R2C is the first modern effort to look at the entire system of programs with the intent to consolidate guidance for similar or supporting programs aimed at improving Soldier readiness ("Ready and Resilient Execution Order," 2013). One of the critical changes to the system in synchronizing these programs was a reduction in the complexity for commanders. R2C is happening under conditions of shrinking budgets, further increasing the impetus to reduce funding for programs that are proving to be ineffective or redundant. The following paragraphs provide a brief summary and analysis of the Ready and Resilient Campaign.

Central to the campaign is the Comprehensive Soldier Family Fitness (CSF2) program. CSF2 was established by the Secretary of the Army Directive on 25 March 2013 as a crucial program to R2C, and later formalized into Army regulation 350-53: Comprehensive Soldier and Family Fitness, dated 19 June 2014 (*AR 350-53: Comprehensive Soldier and Family Fitness*, 2014). The program's mission is to improve the physical and psychological health and resilience of Soldiers, their families, and Department of the Army civilians. The program would

accomplish this by providing self-assessment and training capabilities aligned to five functional areas of strength: physical, emotional, social, spiritual, and family. Soldiers interface with the program through the Global Assessment Tool (GAT) and through their Master Resilience Trainers (MRTs). The GAT is an online survey tool that assesses each area of fitness and refers users to modules intended to raise resilience in each area. MRTs administer resilience training modules to units, which are intended to increase a Soldier's ability to overcome adversity and respond to stress. CSF2 requires company, battalion, and brigade commanders to provide an MRT graduate per company, accomplish the annual training requirements of the program, oversee the administration of the GAT annually, and endorse and resource the program(*AR 350-53: Comprehensive Soldier and Family Fitness*, 2014).

The Army has been quick in attempts to demonstrate that the CSF2 program has been successful in improving the psychological health of Soldiers. The CSF2 program published four technical reports using GAT scores, cross-sectional, and longitudinal studies in an attempt to study the efficacy of the program. Technical Report #1 correlates completed suicides and substance abuse with lower GAT scores (Lester, 2011b). Technical Report #2 provides correlation between positive reported GAT scores and higher job performance in officers (Lester, 2011b). Report #3 evaluated the master resilience training and concluded that, over time, exposure to training improves aspects of Soldier psychological health (Lester, 2011a). Finally, Report #4, while more qualified in its conclusions, asserted that increased resilience training was associated with increases in Soldier psychological health and reduced odds of being diagnosed with a mental health or substance abuse problem (Harms, Herian, Krasikova, Vanhove, & Lester, 2013). Even though CSF2's technical reports present a picture of an effective program, criticism exists about the understated possible negative effects of the training, the ethical concerns about

involving Soldiers in psychological research without consent, and the quality of the program's evaluation (Eidelson, Pilisuk, & Soldz, 2011). In a working paper, research psychologists critique the methodology, data analysis, and interpretation of the findings of Technical Report #3. The authors cite flaws in the method for selecting the units for comparison, using non-randomized trials without sufficient explanation of how these units were selected, and how these selections limit the validity of the findings (Eidelson & Soldz, 2012). While the debate and evaluation of CSF2 continue, the Army has gone forward with the addition of another silo'd program in an attempt to correct a perceived problem: Soldier psychological health.

The growth of individual programs and services as a response to each undesirable behavior resulted in increasing complexity for the company commander. The figure below maps the network complexity of five core programs of R2C, and the required relationships for communication and coordination. The company commander is depicted on the top left along with his supporting additional duty officers along the left hand side. The right hand side represents the command support structure in the battalion, and garrison agencies are depicted on the bottom. Each colored line represents a relationship between stakeholders for the core programs. The black lines represent general relationships that exist either for multiple programs or as a product of organizational hierarchy.

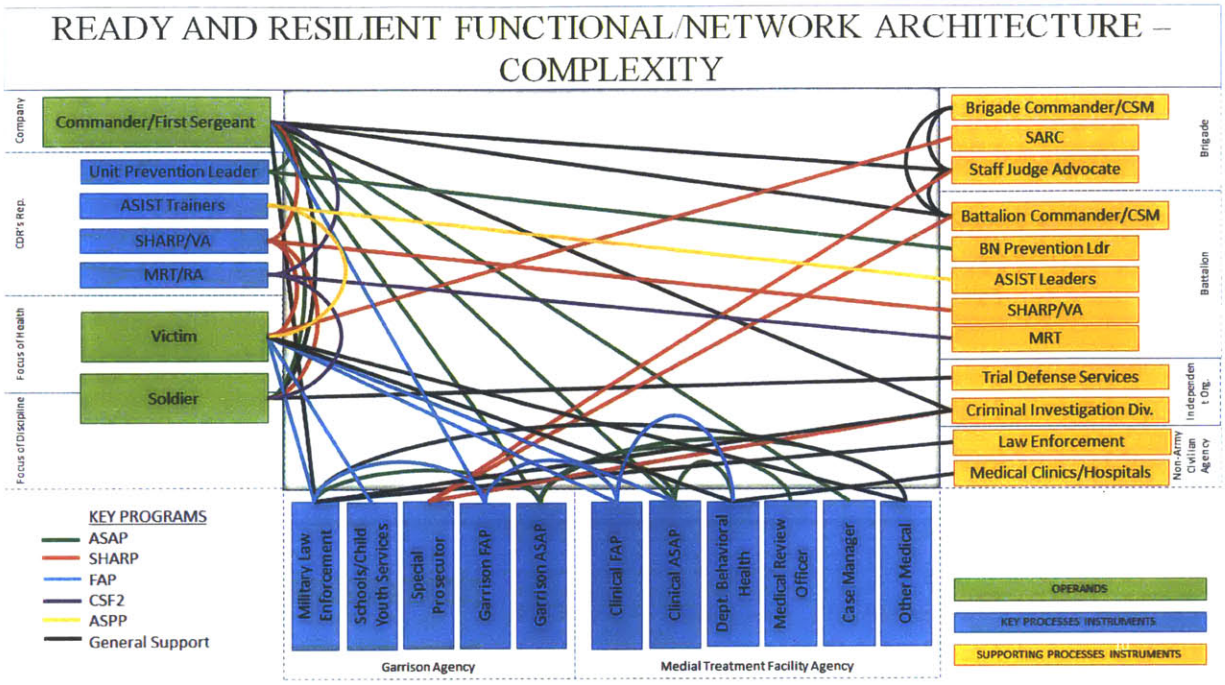

Figure 2 Ready and Resilient Functional and Network Architecture(Chafac, Fosmoe, Wadsworth, & Williams, 2013)

Analysis of the network architecture reveals some interesting observations. First, the company commander is the nexus for information processing and coordination between these programs. Depending on the number of cases that the command team is managing, they could have numerous first and second order relationships that they need to manage. In the operational sense, the commander coordinates vertically with his higher headquarters and supervises his platoons, and coordinates horizontally with other company commanders. In the administrative sense, the vertical coordination remains similar, but the number of "horizontal" relationships increases dramatically. While not depicted on this chart, the command team may have to maintain multiple relationships within the same office, such as within the ASAP Staff (e.g., multiple providers, different service silos) or Military Law Enforcement (e.g., the Provost Marshall Office, MPI, and CID). As a further complication, several relationships exist only after an event occurs. The command team may never interact with Military Law Enforcement or the

Staff Judge Advocate until an actual military offense has been committed. This adds another layer of learning and discovery to an already complicated and stressful process. While the nature of these relationships is usually advisory to the company commander, no agency exists to coordinate care between the various provider groups. If coordinated care is required (e.g., the Soldier has substance dependency and depression diagnoses), then the Soldier receives fragmented care through the silo'd agencies.

R2C began with the goal of synchronizing programs and bringing about a change to Army culture, but these goals will not be fully realized without an understanding of the underlying capabilities required to manage health and discipline of the force. Army leaders require an appreciation of the capability's taxonomy at each echelon of command. The continued growth of requirements in individual programs is not only unsustainable; itself has become a threat to Army readiness and the Army profession. By providing a model that clearly demonstrates the relationships between health and discipline and readiness, my intent is to provide the important first step to incorporating the principles of mission command into garrison Army command.

Research Questions and Framework

This thesis will utilize a systems approach to evaluate the current state of the Army's set of capabilities to manage health and discipline. This evaluation will lead to the development of taxonomy of the capability, and the specification of important organizational routines at different levels on the capability hierarchy. Guiding this research are two broad questions that are challenging to any large organization:

- What are the learning processes and factors that have been effective in generating organizational capabilities in the Army?
- What are the dynamics between mission capabilities and the capability to manage health and discipline?

This research will draw on historical context about how the organization has developed novel capabilities in the past, namely counterinsurgency capabilities. This research will involve site studies that compare and contrast the architecture of the strategic organizing routine for Army Health Promotion, the community health promotion council (CHPC). In describing the architecture of the CHPC, this analysis will consider how strategic policy (R2C Execution Orders and Army Regulations) resulted in local variations to operational routines and practices. Do these variations structured in order to learn about meaningful differences and, if so, is this learning generating a body of knowledge on managing health and discipline?

To understand the dynamics between mission capabilities and health and discipline capabilities, the research will focus on the body of knowledge created during the war periods with respect to mission capabilities and health and discipline capabilities. Specifically, what routines, processes, and level of effort were needed to develop a robust counterinsurgency capability between 2004 and 2008? How does this path compare to the Army's current path in building the capability to manage health and discipline?

The US Army is a command-centric organization. "Commanders are responsible for everything their unit does or fails to do." (*AR 600-20: Army Command Policy*, 2012, p. 20) Therefore, to the commander, it is natural to focus on the implementation of Army regulations. Army regulations require that brigade and battalion commanders establish taskforces,

committees, and risk reduction teams. Often referred to as the Soldier High Risk Team meeting, the purpose of this team is to reduce high-risk behaviors and build resiliency in soldiers and increase readiness in units (*DA PAM 600-24: Health Promotion, Risk Reduction, and Suicide Prevention*, 2010). The Army allows local commanders a degree of flexibility in the conduct of these meetings.

The site visits and field study will consist of directly observed practices and behaviors at the community health promotion council, semi-structured interviews with key stakeholders, and review of internal documents at the sites. This study will consist of three installations, a variety of Army units, each with different environmental factors and readiness requirements. Interviews with commanders, first sergeants, health and discipline service providers, health promotion teams, and other principal actors will be collected in private. In addition, artifacts and documentation of the meetings minutes, local policies, and meeting deliverables will be collected and analyzed to determine what major variations exists between installations.

The data collection and analysis of the community health promotion council is focused on the work practices of the Installation Health Promotion Team (HPT), consisting of a Health Promotion Officer (HPO) and a Health Promotion Program Assistant (HPPA). The data and analysis are used to determine how the common strategic policies and procedures generate local variations in work practices. Additionally, this data is used to determine the extent to which strong routines affect the organizational capability of managing health and discipline.

A Guide to this Thesis

In general each chapter of this thesis is meant to stand-alone as a separate document. While the topics build on each other, the architecture of the system can be understood separately

from the dynamics of the system. However, understanding the dynamics of the system provides some context for the reason the Army has implemented a new architecture to build capability in generating health and discipline.

Synopsis of the Chapters

Chapter 2. Chapter 2 is a review of relevant capabilities literature, organizational learning literature, and system dynamics of organizational learning and process improvements. These three bodies of knowledge are most relevant to the study of the Army health and discipline system. Organizational capabilities literature provides foundations for how individual knowledge and skills translate into organizational routines. Organizational learning literature provides a model for explaining how and why some organizations transfer knowledge better than others. System dynamics literature provides structural models underlying organizational learning processes in context, and over time.

Chapter 3. Chapter 3 reviews some of the history of public health in the United States and the context of public health in the United States Army. This chapter details some of the important inter-CHPC process variations between the three sites compared in chapter 4. While this chapter is not necessarily required to understand the architectural differences between the three sites, it provides some additional context for the reader about the CHPC process.

Chapter 4. This chapter is one of the primary contributions of this research, providing an architectural study of the Army Health Promotion process using an object-process methodology. The 'intended' architecture is modeled from current regulations. The architectural model provides the Army with a way to see the gaps in the design of the current system. The three site

comparisons show the lack of standardization in CHPCs that are described in Army literature as standard. (Courie, Rivera, & Pompey, 2014)

Chapter 5. This chapter describes the behavior of the Army health and discipline system over time. From the initial deployments to combat in 2001, Army leadership first sensed the atrophy of leadership in managing health and discipline in 2010. The author incorporated data from articles and field interviews to build a causal loop diagram (CLD) that identifies the factors and interactions between health and discipline capabilities and operational mission capabilities.

Chapter 6. Chapter 6 summarizes the recommendations and conclusions from the research. It highlights some strategic challenges that remain and may be an impediment to building capabilities in health and discipline. Finally the author provides recommendations that can be implemented in the near term to improve the current system, considering the effects on the system's architecture and dynamics.

. 2012 Army Strategic Planning Guidance. (2012).

AR 350-53: Comprehensive Soldier and Family Fitness. (2014). Washington D.C: Headquarters, Department of the Army.

AR 600-20: Army Command Policy. (2012). Washington D.C.: Headquarters Department of the Army.

. AR 600-63: Army Health Promotion. (2007). Washington, DC.

Army 2020: Generating Health and Discipline in the Force Ahead of Strategic Reset. (2012).

. Army Health Promotion, Risk Reduction, and Suicide Prevention Report 2010. (2010).

Berejikian, J. (2002). A Cognitive Theory of Deterrence. *Journal of Peace Research*, 165-183.

Chafac, M., Fosmoe, K., Wadsworth, C., & Williams, J. (2013). Enterprise Architecting: The US Army Ready and Resilient Campaign.

Courie, A. F., Rivera, M. S., & Pompey, A. (2014). Managing Public Health in the Army Through a Standard Community Health Promotion Council Model. *U.S. Army Medical Department Journal*, 82-90.

DA PAM 600-24: Health Promotion, Risk Reduction, and Suicide Prevention. (2010). Washington, DC.

Danilovic, V. (2001). The Sources of Threat Credibility in Extended Deterrence. *Journal of Conflict Resolution*, 341-369.

Eidelson, R., Pilisuk, M., & Soldz, S. (2011, March 24). The Dark Side of "Comprehensive Soldier Fitness".

Eidelson, R., & Soldz, S. (2012). Does Comprehensive Soldier Fitness Work? CSF Research Fails the Test. *Ethical Psychology*. http://www.ethicalpsychology.org/Eidelson-&-Soldz-CSF_Research_Fails_the_Test.pdf

Glaser, C. (1992). Political Consequences of Military Strategy: Expanding and Refining the Spiral and Deterrence Models. *World Politics*, 497-538.

Harms, P. D., Herian, M., Krasikova, D., Vanhove, A., & Lester, P. (2013). The Comprehensive Soldier and Family Fitness Program Evaluation: Report #4: Evaluation of Resilience Training and Mental and Behavioral Health Outcomes. Monterey, CA 93940: Research Facilitation Team.

Healy, J. (2013, August 23). Soldier Sentenced to Life Without Parole for Killin 16 Afghans.

Lee, J. (2011, November 1). U.S. Soldier gets 10 years in prison for rape in South Korea. *CNN*.

Lester, P. (2011a). The Comprehensive Soldier Fitness Program Evaluation: Report #3. Washington D.C.: Comprehensive Soldier Fitness, Department of the Army.

Lester, P. (2011b). Evaluation of Relationships Between Reported Resilience and Soldier Outcomes. Washington D.C.: Comprehensive Soldier Fitness, Department of the Army.

. Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference. (1946). New York, NY, USA.

. Ready and Resilient Execution Order. (2013).

. S.1752: Military Justice Improvement Act of 2013. (2013). Washington, DC: GPO.

Schoenbaum, M., Kessler, R., Gilman, S., Colpe, L., Heeringa, S., Stein, M., . . . Cox, K. (2014). Predictors of Suicide and Accident Detah in the Army Study to Assess Risk and Resilience in Servicemembers. *JAMA Psychiatry*, 493-503.

Song, S.-h. (2014, June 5). U.S. commander supports Korean prosecution of four U.S. soldiers.

Stokes, J., Greer, H., & Hammer, P. Combat Stress Control and Force Health Protection. *Military Preventative Medicine: Mobilization and Deployment*, 301-315.

Chapter 2 - Literature Review

Organizational Capabilities

Strategic management by capabilities may be a source of sustainable competitive advantage for organizations (Cusumano, 2010). While the specific state and non-state actors the US Army may face are rather dynamic, the ways and means that these threats possess are less dynamic. This provides the Army the same advantage as business in managing capabilities over markets or specific threats. The Army has recognized the need to manage by capabilities to "conduct prompt and sustained operations throughout the spectrum of military operations" ("Army Posture Statement," 2000, p. 20) as early as 1999. This recognition was translated into the need to transform into a force that delivers capabilities in a variety of full-spectrum operations to meet the readiness demands of the environment, including: counterterrorism, supporting nonproliferation, counterdrug, building partner capacity, and peace keeping operations ("Army Posture Statement," 2000). The shift in strategic management by capabilities instead of managing specific markets is reflected in business management literature. Grant (1996) argues that increasing uncertainty and the speed of innovation necessitates the management by capabilities. This section will focus on defining the nature of a capability, highlighting the differences between military and business literature.

Literature defining capabilities as a noun emerges from being capable to perform some task, which involves a reliable capacity to cause some outcome from as a result of intended actions (*The Nature and Dynamics of Organizational Capabilities*, 2000). While the necessity of an intention is a difference that may deserve some discussion, there is more diversity in what are the requisite inputs of organizational capabilities. Felin, Foss, Heimeriks, and Madsen (2012)

focus on individuals, process and interactions, and structure as the building block inputs to organizational capabilities. With the additional understanding that these inputs operate in a hierarchy in the organization, and that the interactions among these inputs have other effects on the development and deployment of capabilities (Felin et al., 2012). Grant (1996) provided a model of knowledge integration as a basis for organizational capabilities. Knowledge is the essential input provided by people to organizational processes. The role of organizations in developing capabilities is the management of integrating knowledge at each level of the capabilities' hierarchy (Grant, 1996). Although the inputs of individuals, process, and structure may be easier to quantify, these inputs seem insufficient to characterize the rise of a capability. The framework of knowledge integration may be more useful, because it can be indirectly measured through article and journal publication, patent searches, and other knowledge outputs. Also, knowledge integration subsumes other inputs, if one considers the way organizational knowledge is acquired and transferred is a function of individuals, processes and interactions, and the structure of the organization facilitating those processes and interactions.

The Department of Defense (DoD) defines a capability as the ability to execute a specified course of action ("JP 1-02," 2010). Of interest is that the DoD highlights that a capability need not be accompanied by an intention, or a specific commander's intent. The Army analyzes threat capabilities and capabilities of its own force. In support of transformation efforts, the DoD implemented the Joint Capabilities Integration and Development System (JCIDS) in order to identify, assess, validate, and prioritize joint military capabilities("CJCSI 3170.01H," 2012). Training and Doctrine Command (TRADOC) which is responsible for the integration and development, includes a rather holistic definition of capability development:

> "Capabilities development includes identifying, assessing, and documenting changes in doctrine, organization, training, material, leadership and education, personnel (DOTMLPF) and any policy implications that collectively produce the force capabilities and attributes"("Reg 71-20," 2013).

The capabilities-based assessment (CBA) process starts with Army concepts and white papers proceeds through a functional areas analysis and recommended solutions. Functional area analysis includes the integration with current intelligence estimates to establish the proper tasks, conditions and standards required for Army capabilities. Functional needs analysis is the analytic step that identifies the Army's ability to accomplish the capability within an acceptable level of risk. The output is a prioritized capability gap list. Finally solutions are recommended, including non-material solutions ("Reg 71-20," 2013).

The immediate comparison between the Army's development of capabilities through a DOTMLPF approach and the theory of organizational capabilities highlights several differences in how an organizational capability is constructed. While the nature of capabilities appears hierarchical, the Army model seems to focus on the integration at the level of warfighting functions of the hierarchy, leaving the integration at the cross-functional level to unit commanders. Additionally, the integration at the functional level lacks an approach to identifying the gaps in cross functional capabilities that address the needs of commanders to accomplish a diverse set of missions.

The process used in the Army is quite robust in principle at the functional level. However, the process leaves the tasks of integrating these functional capabilities to commanders. The lack of a process for developing cross-functional capabilities in the Army is a departure from the hierarchical nature of organizational capabilities, and one of the effects of this failure to

recognize the need for tradeoffs in budget dollars at the cross-functional level. Essentially the Army is providing more functional tools to commanders that may or may not increase their capacity of a desired cross-functional capability, or may continue to increase the capacity of a capability that is already sufficiently developed. Either of these errors may have been acceptable in an era of ever increasing budgets; however, the military is entering an era of shrinking budgets that will force leaders to make choices by limiting force size and prioritizing Soldier training (Serbu, 2013). Secretary of Defense, Robert Gates articulated these choices when he delivered his budget recommendation in 2009:

> "it is important to remember that every defense dollar spent to over-insure against a remote or diminishing risk – or, in effect, to 'run up the score' in a capability where the United States is already dominant – is a dollar not available to take care of our people, reset the force, win the wars we are in, and improve capabilities in areas where we are underinvested and potentially vulnerable." (Gates, 2009)

The immediate comparison between the Army's development of capabilities through a DOTMLPF approach and the theory of organizational capabilities highlights several differences in how an organizational capability is constructed. While the nature of capabilities appears hierarchical, the Army model seems to focus on the integration at the level of warfighting functions of the hierarchy, leaving the integration at the cross-functional level to unit commanders. Additionally, the integration at the functional level lacks an approach to identifying the gaps in cross functional capabilities that address the needs of commanders to accomplish a diverse set of missions.

In order to provide a more robust understanding of the emergence of cross-functional capabilities in Army, I have outlined the hierarchical integration of knowledge associated with a Multiple Launch Rocket System (MLRS) in Army capabilities. The MLRS is a three person

lightly armored vehicle that can deploy a variety of munitions. The MLRS consists of a fire control system and a self-propelled launcher loader("Global Security," 2014). MLRS organizations are typically organized into launcher platoons, fire direction centers, and an associated resupply unit. The figure below adapts the architecture of a cross functional capability from Grant (1996) to sketch the hierarchy of capabilities associated with Multiple Launch rocket Systems in the Fires Warfighting capability, and how these capabilities may fit into conventional warfare and counterinsurgency.

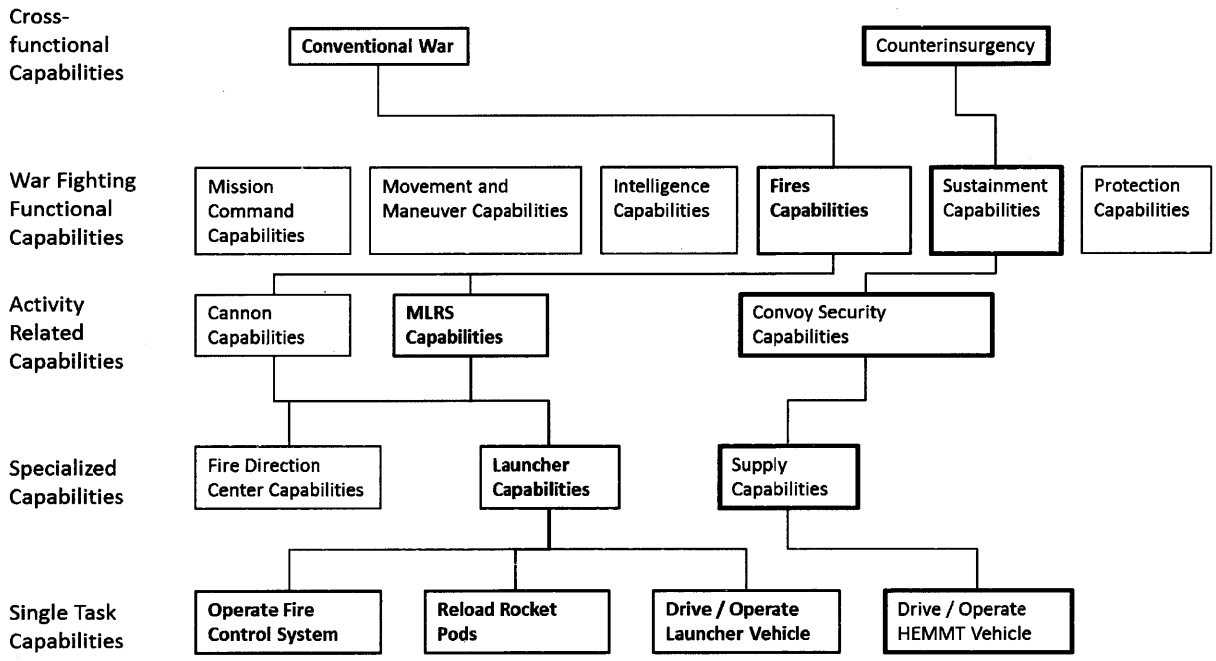

Figure 3 - Hierarchy of Capabilities

This hierarchy depicts levels of integration of knowledge. The lowest level of capabilities can typically by integrated by individual Soldiers each level up the hierarchy represents more integration of knowledge, materiel, and inter-dependent training processes. Army force structure, the organization, affects the way a capability emerges even given the same specialized

capabilities. These capabilities are not necessarily associated with any one unit, as an MLRS company may provide capabilities across several war fighting functions. They may provide commanders with a fires capability, but are also equipped with trucks that could be used for sustainment. The organization and equipment associated with an MLRS, designed to supply rockets and missiles in conventional conflicts can be repurposed to perform logistical convoys. However, these trucks are not the optimal means of transporting large number of supplies, and the units lack the requisite assets to protect these vehicles during convoys. Furthermore, if the unit has not been focusing training on executing fire missions, then the skills needed for performing convoy security would not have received the same attention. These inputs to a capability and the time needed to train the new routines of the unit will lead to increased risk to senior commanders, as sub-optimal solutions are employed to fill capability gaps. At higher levels commanders are making decisions about force structures, and training and education as a result of the required cross-functional capabilities. As such, commanders who prioritize COIN capabilities may stress MLRS units to only deploy with resupply vehicles, train more in convoy security, and neglect training in occupying firing positions and shooting fire missions. Due to the bounded nature of budgets, knowledge integration, training time, and the inflexibility of subordinate unit force structure commanders are forced to make tradeoffs in developing cross-functional capabilities.

The tradeoffs and workarounds described above in a theoretical scenario had significant impacts on the Field Artillery branch. In 2008, three maneuver brigade combat team commanders authored a highly circulated white paper that described the atrophy in the capabilities of the Field Artillery branch to provide accurate and responsive fire support (MacFarland, Shield, & Snow, 2008). Most importantly the atrophy in these capabilities should

not be attributed to negligence or failures in leadership, but rather the emergent needs for the rapid growth in a counterinsurgency capability.

Organizational Learning

The Army's strategic shift to provide more capabilities with a smaller and more agile force rested on modernization and more capable leaders, essentially transformed Brigade Combat Teams would be more productive than the legacy Division they replaced. Organizational learning has studied the effects of increased productivity, and the affects that these gains can have across the organization. A phenomenon labeled 'the learning curve' has been useful in characterizing outcomes in a wide array of industries, from aircraft manufacturing, ships, to pizza production that show increased productivity with cumulative experience. (Linda Argote, 2013). Current research in organizational learning helps to explain the factors that are important in creating, retaining, and transferring knowledge across an organization. Organizations that understand the factors that influence the rate of learning different capabilities may be able to react more quickly to dynamic environments and sustain a competitive advantage.

In this research, I will attempt to take a highly aggregated view of organization wide capabilities. Therefore, I will use a consistent definition of knowledge that includes "both declarative knowledge or facts and procedural knowledge or skills and routines" (Linda Argote, 2013, p. 31). The knowledge of an organization includes the facts that individuals know, and at higher levels of the organization the processes that are in place to achieve certain outcomes. Researchers have used this definition of knowledge to show learning in organizations by measuring changes in behavior (organizational routines) or changes in the cognition of the organization's members. Some researchers have even suggested that learning can occur without changes in behavior, and that the ability to change to wider possible behaviors also demonstrates

organizational learning. Huber (1991) argues that learning does not necessarily lead to increased effectiveness or even changed behaviors. The organization can be described as learning if the "range of potential behaviors is changed."(Huber, 1991, p. 89)

This research will draw from these methods for demonstrating organizational learning, and the growth of knowledge as a foundation for the emergence of an organizational capability. The framework used for analyzing organizational learning in counterinsurgency and health and discipline was developed by Argote and Miron-Spektor in 2011. This framework shows an ongoing cycle in which knowledge is created through executing missions. The knowledge is used by the organization's members to perform tasks, and create more knowledge. Knowledge also flows into the organizational context, which affects future learning. The organizational context includes characteristics such as the culture, incentives, who is promoted for what tasks, and strategy (L. Argote & Miron-Spektor, 2011). The following paragraphs highlight how this framework relates to this research.

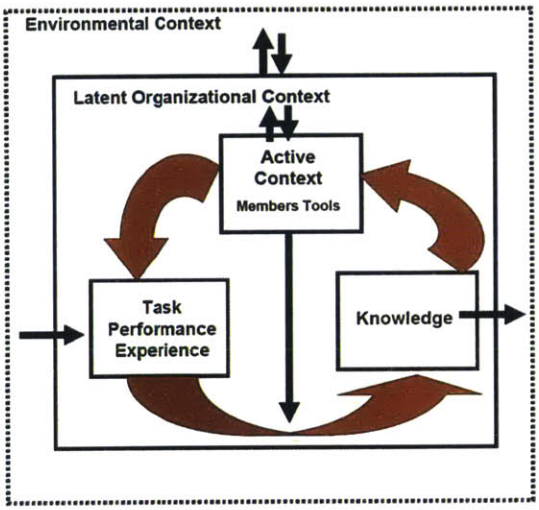

Figure 4 - A theoretical framework for analyzing organizational learning (L. Argote & Miron-Spektor, 2011)

Organizations can create knowledge from direct experiences, task performance or mission execution, but there is also research to suggest that organizations can create knowledge from indirect experience. This is referred to as knowledge transfer. Researchers assert that it is important to understand the relationship between direct and indirect experiences and the conditions under which they complement or substitute for each other (Linda Argote, 2013). Army learning about counterinsurgency suggests that this relationship is important. Early articles about counterinsurgency where generally attempts to learn from historical examples, or examples of other armies. After Army units began to execute missions, they began to create knowledge based on direct experiences.

Creating knowledge from direct and experience, and transferring knowledge from indirect experience are two of the three sub-processes of organizational learning. The final interrelated sub-process is retaining knowledge. The classic learning curve measures increases in productivity as a function of cumulative experience, assuming that knowledge is persistent through time. Recent research indicates that this may not be accurate (Linda Argote, 2013). There are many reasons that an organization may forget. People leave the organization, records may be lost or destroyed, and social networks can decay. The depreciation of knowledge is important in understanding the challenges of building knowledge, especially for capabilities that are not novel. While the Army has significant organizational knowledge of leader development, and managing health and discipline, the depreciation of this knowledge provides a theoretical cause for the loss in capability. The second implication is more troubling, the knowledge itself may no longer be relevant, and the Army should not expect gains in the capability based on experience it once had in managing health and discipline of Soldiers.

The environment context includes the elements that are outside the bounds of the organization (L. Argote & Miron-Spektor, 2011). The environmental context affects the type of experiences that the organization can acquire. The environmental context is important as it provides the demand for organization capabilities. The nation has faced an increasing complex, dynamic security environment after the collapse of the Soviet Union. With the increase in smaller scale wars, unconventional threats, and weapons of mass destruction, the Army was required to transform to meet the increased demand in these capabilities.

The organizational context includes the structure, strategy, social networks and culture of the organization. Argote (2013) further disaggregates these concepts into an active context, which interacts with the environment, and a latent context that influence the active context. There are several contextual factors that have been shown to influence organizational learning that are worth mentioning. Generalist organizations seem to benefit less from experience than specialist organizations (Linda Argote, 2013). Army units are built as generalist that can fight across the full spectrum of operations. This is likely a major factor that influences organizational learning. Team stability has been shown to contribute positively to performance (Linda Argote, 2013). The Army Force Generation (ARFORGEN) Model is designed, such that units are created for a short period of time and disbanded, usually after one deployment. This may have effects on organizational learning. The organizational culture and structure also affect organizational learning(Linda Argote, 2013). In the research on Army capabilities, the culture and the force structure are considered important factors in the system that generates capabilities.

Training and Leader Development

The Army culture is rife with the requirement to develop and train leaders. This cultural impetus stems from the Army Vision which explicitly links the power of the Army to its ability

to develop leaders that can meet modern challenges("The Army Strategic Planning Guidance 2013," 2013). The focus on leader development has been a concern Army senior leaders for over 40 years; and the system of developing a comprehensive and effective training program for leaders has seen significant changes(Chapman, 1991). Therefore, it is not surprising that the Ready and Resilient Campaign has shifted focus from synchronizing silo'd programs to empowered and engaged leaders(Reeves, 2014). This shift in focus of the R2C is evidence for a growing concern among senior leaders that Army Training and Leader Development (ATLD) is the root cause of the atrophy of managing health and discipline. Because the Army only draws its leaders from a self-grown population, the importance of its development programs have long been understood, studied, and continually transformed during the period of evaluation (Adamshick, 2013; "The Army Training and Leader Development Panel Officer Study: Report to the Army," 2001). This section will review literature on the Army's capacity to train and develop leaders, beginning with an Army panel convened in 2000 and concluding with a study conducted in 2013 highlighting changes in priorities that contribute to or detract from the capability to manage health and discipline.

In the summer of 2000, General Eric Shinseki appointed the Commanding General (CG) of Army Training and Doctrine Command (TRADOC) as the executive agent to conduct a review, assessment, and provide recommendations for training and developing leaders in a transforming Army. The focus of the study was not only on warfighting concepts and doctrine, but also on the skills required for officers, non-commissioned officers, and soldiers to succeed in the transformed force (Steele & Walters, 2001b). The results were released in a series of reports (officers, non-commissioned officers, and Army civilians) each highlighting the challenges and

concerns that the stakeholders were experiencing, along with the future requirements for these stakeholders, and recommendations for changes to the system.

The 2001 Army Training and Leader Development Panel (ATLDP) was convened when the nation was at a time of relative peace, but the Army was under major transformation efforts to provide smaller more modular, agile forces across a full spectrum of operations ("The Army Training and Leader Development Panel Report (NCO): Final Report," 2002). These changes necessarily required increased mission training as the Army expected Soldiers to be able to handle an increasing wide set of security challenges. The reports stressed that there is a gap between Army beliefs and practices. While small gaps are acceptable to many Soldiers and leaders in the Army, an increasing gap between the Army's stated beliefs and its routine practices can threaten readiness. Normal levels of inconsistency between beliefs and practices were defined as a 'Band of Tolerance.' In 2001, both officer and non-commissioned officer reports highlighted that the balance between Army beliefs and practices was outside the band of tolerance. The panel reached several conclusions regarding the nature of this problem some related to the novelty of missions and unit organization, and others related to non-mission related operational pace ("The Army Training and Leader Development Panel Officer Study: Report to the Army," 2001; "The Army Training and Leader Development Panel Report (NCO): Final Report," 2002). The following paragraphs present some of the major conclusions, highlighting areas that may be related to the management of health and discipline.

The transformation of the Army's force structure required new processes for accomplishing its current missions, and new missions. Leaders also required a set of standards against which to evaluate these missions. The set of sub-routines for each mission, and the associated standards to evaluate and provide feedback to units is termed the Systems Approach

to Training (SAT). While the panel found that the methodology for the SAT was sound, they found that it was being poorly managed. In some cases only 10% of the necessary manuals that defined standards for mission execution were current and available for unit training (Steele & Walters, 2001a). In addition to the importance of standards for training and feedback, NCOs were critical of the non-mission essential pace not allowing sufficient time to train and re-train ("The Army Training and Leader Development Panel Report (NCO): Final Report," 2002). As an example cited, the Army Equal Opportunity (EO) Program was highlighted as a distraction from mission training, even though the outcomes of the EO were acknowledged as contributing to unit cohesion and readiness. The dissonance in these attitudes toward programs that are intended to increase readiness are evidence of a preference for a sole focus on mission training when there is not enough time perceived to accomplish mission tasks.

Non-commissioned officers were also critical that the operational pace had exceeded what was acceptable to perform effective formal and developmental counseling. Formal and developmental counseling is emphasized as important to the growth of leaders, but was neglected. The reasons cited for the lack of counseling were the lack of training in formal schools on how to do developmental counseling, and a lack of time to properly counsel Soldiers as a result of mission training, and non-mission tasks ("The Army Training and Leader Development Panel Report (NCO): Final Report," 2002). Army leaders seem to discount the value of training and programs associated with health and discipline at the expense of needed unit mission training, as a result over time the capability to manage health and discipline declines. The authors of the report made several recommendations to senior leaders: including the consolidation of all human resource programs under one proponent, and one regulation, and the improved quality of interactive training scenarios. While the Army has certainly delivered

increasing interactive training support packages, including interactive, web-application based training, the number of programs to support health and discipline has increased. SHARP is completely separate from the EO program, and the Army has created CSF2 requirements.

The Center for Army Leadership (CAL) conducts the major current efforts to study leadership, leader development research and analysis, provide senior leaders with policy recommendations, and implement products tom improve Army leadership ("United States Army Combined Arms Center," 2014). The center has published several reports that highlight findings in counseling and leader attitudes about managing discipline that are relevant to this research. The final report from the task force on leader development (2013) also provides recommendations on strategic change needed in the Army. The following paragraph provides a brief summary of the relevant findings and conclusions to this research.

The task force for leader development began research in 2011 and spanned two years, collected 12,022 survey responses from Army officers, and conducted 18 site visits to Army installations. The data collected was analyzed and briefed to a panel of senior leaders throughout the research. The authors stressed three strategic recommendations:

- Embed Mission Command in the US Army
- Dramatically improve the professional imperative to develop others
- Dramatically transform officer talent management

The authors conclude by advocating for leader development transformation to be synchronized across the institutional and operational Army, along with the various stakeholders and staff agencies responsible for leader development. The task force's analysis in 2011 quantified problems in counseling and developing subordinate leaders, citing that 19% of respondents had never received counseling from their immediate supervisor; and the 49% of respondents feel

counseling has little or no positive impact on their development. The authors highlight that only 35% of leaders have time for self-development, a decrease from 41% in 2010 (Adamshick, 2013). While these data show some trends over the near future in a decline in leader development, the qualitative comparison with 2001 reveal the same sources of friction: a lack of time for leader development, and leaders failing to perform effective counseling. Although the recent study fails to attribute casual reasons to the decline of these important efforts, the likely explanation of increased operational tempo due to the requirements of Operation Iraqi Freedom and Operation Enduring Freedom are no doubt partly responsible.

The study also highlighted the dissonance of trust between senior officers and company grade leaders with regards to managing discipline.

> "75% of senior leaders view company-grade leaders as effective in maintaining discipline in their units while deployed (only 10% rate company-grade leaders as ineffective). However, these perceptions do not extend to garrison environments, where only 64% of senior leaders view company-grade leaders as effective in maintaining discipline (15% ineffective)."

This perception provides a quantitative data point that may help to explain why Army programs in the R2C framework are directive in nature. The cultural dissonance between the belief in the success of mission command, and the micromanagement of health and discipline programs in garrison underscores the one of the key findings from the 2013 Leader Development Study.

> "There is still a large part of our force that is functioning—or perceived by a large part of the force to be functioning—in a command environment that is not guided by the principles of Mission Command."

The command environment counter to mission command is centralized control. There are several advantages to centralized control and standardization of health and discipline program requirements

across the force. Standardization ensures a certain level of consistency, and protects against underperforming leaders. The required training standards in Army regulations and policy are meant to provide leaders with solutions to problems. However in doing so the Army has overlooked an important element of learning:

> "An important element of this learning construct, and a view expressed by participants in this study, is that Mission Command cannot be confined exclusively to the operational domain. Mission Command is not doctrine designed for combat theaters alone. Leader development occurs in institutional and self-development domains through a continuous and life-long process of training, education, and experience. Without Mission Command, individual curiosity and enthusiasm is reduced, commanders focus more on the mission and less on the people, and the environment for individual growth becomes stagnant.

The literature on Army training and leader development is describes a gap between the ideals of the organization and its practices. This gap is highlighted most specifically in the contrast between the principles of mission command and the practices of the Army R2C family of programs. Closing this gap is vital if the Army wants to generate the capability to manage the health and discipline of the force, sustain the institution, and increasing the resilience of the Army profession.

Modeling Improvement Processes

Army leader development is a system that has the potential to greatly increase the capacity of the Army, delivering far more capabilities with fewer overall troops. However, the benefits received from the investment in leadership development do not pay immediate dividends to Army capabilities, and are often highly uncertain. While some leaders will have huge returns on the investment in the development, others will lag behind. These same qualities have been studied in sustaining process improvements in the service and manufacturing sectors. Programs

like Lean manufacturing programs, Six-Sigma, and Total Quality Management have the potential to add tremendous value to an organization, but the benefits are not immediately perceived and the returns on investments are highly uncertain. This section will review the appropriateness of modeling techniques of improvement processes, the application of these models, and the usefulness of these studies to this research.

Decision makers use mental models to make decisions based on the availability of data. It is not surprising, that many of these decisions exhibit complexity that is beyond capacity of the human mind to process. In the case of Army leaders, the decisions about how many resources to allocate to different mission capabilities, and how much time allocate to leader development involves understanding multiple feedback structures with long time delays to affect readiness. It involves understanding how different force structures, doctrine, and the amount of tasks interact to guide lower commander's actions. Complicating matters is that this information is not available at the same time, not entirely certain, and time pressure forces decisions to be made before complete evaluation. Faced with these types of problems and pressures, managers often fall back onto habits or rote procedures. Experiments have shown that people perform very poorly, when faced with limited dynamic complexity in systems (Sterman, 2000). Not only are models needed to understand the dynamics of an established system, but often leaders might want to learn about some policy that has not been implanted. A virtual simulation that provides feedback to decision makers can help in accelerating the learning process.

System dynamic models consist of causal loop diagrams, stocks and flows, and feedback structures. The result is essentially deterministic in which the structure of the system determines the behavior. Often this behavior is counterintuitive. System dynamics models have been applied in understanding a wide array of phenomenon from the arms race in the cold war to issues in

public health (Sterman, 2000). System dynamics models in healthcare are typically used in a broad strategic context where many actions can be aggregated into high level variables (Brailsford, 2008). System dynamics models have also been used to study organizational culture (Repenning, Goncalves, & Black, 2001), process improvement programs (Repenning & Sterman, 2001), even counterinsurgency (Anderson, 2011). Given the wide applicability and the strategic nature of system dynamics models, there may be some application in a system dynamic model to understanding the underlying structure of the loss in the capability to manage health and discipline.

In their work on the resistance to the implementation of total quality management processes, Repenning and Sterman (2001) model the underlying 'physics' of improvement processes and organizational change in manufacturing firms. Perhaps the most interesting and relevant finding was that firms failed to achieve the benefits of improvements not as a result of the specific technique or the leadership of the program, but rather the root of the problem was the systematic interaction of the program, workers, and managers. The interactions of the feedback loops create a phenomenon the authors called the capability trap. By focusing on the most short term salient capability, managers pressure workers to work harder for a short term boost in performance at the expense of long term maintenance and improvements. This results in a vicious cycle of continuing to work harder and harder for fewer and fewer returns.

Similar dynamics have been observed in the service industry response to work pressure. Oliva (2001) observed permanent decline in service quality, as a result of increased work pressure, working overtime, and temporarily cutting corners. The author asserts that the interaction between desired short term increases in fulfilling orders had long term effects on the service standard. The dynamic complexity of the system, as a result of delays in the decline in

service standard combined with the short term increases in the order fulfillment from overtime, conspired to permanently reduce the service quality of the organization.

While the former system dynamics studies characterize the context of organizational change, they leave a gap in the treatment of organizational learning. The specific reasons that an organization fails to change or build a capability is not necessarily inconsistent with the existence of a learning curve. Understand the nature of the interactions between learning and the organizational context may provide managers with a better understanding for policies in generating novel capabilities. Morrison (2008) extends the learning curve by offering a dynamic relationship between learning a new process, and executing an old process. A critical constraint that makes this model useful is the treatment of time and desired output. Employees do not have unlimited time to learn a new process. Faced with pressure to meet a required output, the interactions between the amount of time spent with the new process, the difficulty or complexity of the new process, and the productivity gains of the new process create a dynamic interaction resulting in different states of equilibrium. The dynamic capture of the system creates 'tipping points' beyond which employees continue to learn the new process or revert to the old way of meeting the desired output.

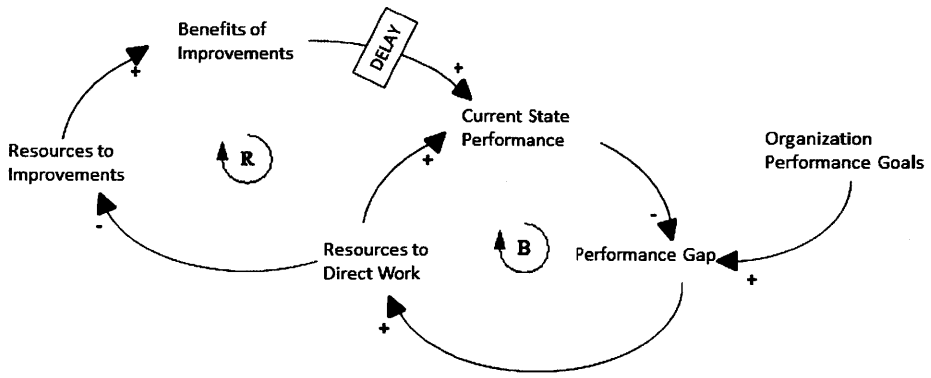

Figure 5 - Dynamics of Organization Performance

The specific causal loops of the models have variations, but can be generalized into the structure represented in **Error! Reference source not found.** above. The structure consists of ne or more balancing loops around direct effort to work and one or more reinforcing loops centered on learning new processes, or process improvements. An important concept in almost all models around improvement processes is the delay between the benefits of any improvement process and the effect on the current performance in the organization. While the effects of direct effort applied (i.e. working overtime, or adding more training requirements to subordinate units) is felt almost immediately as a performance increase, the effects of improvements or learning new processes is often delayed. This structure can explain the 'tipping point' phenomenon seen in many different industries around process improvements. This structure is also useful to explain the preference for applying more pressure to direct work in order to make a quick gain in performance, over the delayed and uncertain gains through improvement programs. This structure is also flexible and can be expanded to include the multiple loops necessary to capture the dynamics of the system or managing health and discipline and mission capabilities in the Army.

Adamshick, M. (2013). 2013 Chief of Staff of the Army Leader Development Task Force Final Report. Washington D.C.: Department of the Army.

Anderson, E. G., Jr. (2011). A dynamic model of counterinsurgency policy including the effects of intelligence, public security, popular support, and insurgent experience. *System Dynamics Review, 27*(2), 111.

Argote, L. (2013). *Organizational Learning: Creating, Retaining and Transferring Konledge*. New York: Springer.

Argote, L., & Miron-Spektor, E. (2011). Organizational learning: For experience to knowledge. *Organization Science*, 1123-1137.

Army Posture Statement. (2000, Feb). Retrieved from http://www.army.mil/aps/00/aps00.htm

The Army Strategic Planning Guidance 2013. (2013, February 7).

. The Army Training and Leader Development Panel Officer Study: Report to the Army. (2001). Fort Leavenworth, KS 66027: Combined Arms Center.

. The Army Training and Leader Development Panel Report (NCO): Final Report. (2002). Fort Leavenworth, KS: Department of the Army; US Army Combined Arms Center.

Brailsford, S. (2008). *System Dynamics: What's in it for Healthcare Simulation Modelers.* Paper presented at the Winter Simulation Conference.

Chapman, A. (1991). The Army's Training Revolution 1973 - 1990: An Overview. Fort Monroe, Virginia: Office of the Command Historian: United States Army Training and Doctrine Command.

. CJCSI 3170.01H. (2012). Washington D.C.: Chairman of the Joint Chiefs of Staff Instruction, J-8.

Cusumano, M. (2010). *Staying Power: Six Enduring Principles for Managing Strategy & Innovation*. Oxford: Oxford University Press.

Felin, T., Foss, N., Heimeriks, K., & Madsen, T. (2012). Microfoundations of Routines and Capabilities: Individuals, Processes, and Structure. *Journal of Management Studies*, 1351-1374.

. Force Development: Concept Development, Capabilities Determination, and Capabilities Integration. (2013). Fort Eustis, Virginia 23604: Department of the Army, Training and Doctrine Command.

Gates, R. (2009, April 6). Defense Budget Recommendation Statement.

Global Security. (2014, June 15). *M270 MLRS Self-Propelled Loader/Launcher (SPLL)*. Retrieved from http://www.globalsecurity.org/military/systems/ground/m270.htm

Grant, R. (1996). Prospering in Dynamically-competitive Environments: Organizational Capability as Knowledge Integration. *Organization Science*, 375-387.

Huber, G. P. (1991). ORGANIZATIONAL LEARNING: THE CONTRIBUTING PROCESSES AND THE LITERATURES. *Organization Science, 2*(1), 88-115.

. JP 1-02. (2010). Washington D.C.: Department of Defense.

MacFarland, S., Shield, M., & Snow, J. (2008). The King and I: The Impending Crisis in the Field Artillery's abilitiy to provide Fire Support to Manuever Commanders.

Morrison, J. B. (2008). Putting the learning curve in context. *Journal of Business Research, 61*(11), 1182.

The Nature and Dynamics of Organizational Capabilities. (2000). Oxford: Oxford University Press.

Oliva, R. (2001). Tradeoffs in responses to work pressure in the service industry. *California Management Review, 43*(4), 26-43.

Reeves, C. L. (2014). R2C Site Visit: Ft. Stewart. In K. Fosmoe (Ed.).

Repenning, N. P., Goncalves, P., & Black, L. J. (2001). Past the tipping point: The persistence of firefighting in product development. *California Management Review, 43*(4), 44-63.

Repenning, N. P., & Sterman, J. D. (2001). Nobody ever gets the credit for fixing problems that never happened: Creating and sustaining process improvement. *California Management Review, 43*(4), 64-88.

Serbu, J. (2013, November 8). Sequestration's second year worse than its first, military chiefs warn.

Steele, W., & Walters, R. (2001a). Developing Leaders in a Transforming Army. *Military Review*(September-October), 2-11.

Steele, W., & Walters, R. (2001b). Training and Developing Army Leaders. *Military Review, July-August*, 2-9.

Sterman, J. (2000). *Business dynamics : systems thinking and modeling for a complex world.* Boston: Irwin/McGraw-Hill.

United States Army Combined Arms Center. (2014). *CAL Mission Statement.* http://usacac.army.mil/cac2/cal/repository/20131218_MCCoE_CAL_Overview.pdf

Public Health and the Army Community Health Promotion Council

In the previous chapter, I detailed some of the relevant management literature in the fields of: organizational capabilities, organizational learning, and system dynamics. The Army Community Health Promotion Council (CHPC) is the current strategic organizing forum for creating a capability to generate health and discipline in the US Army. This chapter provides some context to public health and its integration in the US Army. It also attempts to describe how the system elements at each site location adapted over time to arrive at their current state as analyzed through the organizational learning framework of Argote (2013).

Public Health

The practice and definition of public health has changed in a meaningful way in the past century. The tension between social reform policies and science-based interventions define the struggle over the last century to define the mandates for a public health system in the United States (Fairchild, Rosner, Colgrove, Bayer, & Fried, 2010). The nature of public health practice as a synthesis between the environment and the individual is reflected in the Army's definition of health promotion. Army health promotion is defined as "any combination of health education and related organizational, political, and economic interventions designed to facilitate behavioral and environmental changes conducive to the health and well-being of the Army community." (Army, 2010, p. 1) The Army community in this context refers to Soldiers, family members, and Army civilians.

The shift to a public health-centric strategy in the Army began in earnest in July 2008 with a transformation effort in the Army Medical Command (MEDCOM). The transition of the Army Public Health Command (APHC) began in 2009, with planned full operational capability

by the end of 2011. The APHC would be formed by combining missions from the veterinary command and the preventative medicine command. It would be organized into five regions, and consist of installation public health teams under the command and control of the local Military Treatment Facility (MTF) commander (Ugalde & Resta, 2010). The details of the transformation efforts are not germane to this research, except that the installation health promotion teams (HPT) are under the command and control of the senior commander at certain Army installations. The HPT is the central element charged with planning and executing the operational routine related to public health in the Army community at the installation level.

This section of research will focus on the Army Community Health Promotion Council (CHPC) as one of the fundamental routines that improves the capacity of public health in Army communities, and generates the capability to manage health and discipline at the senior command level. The method and process that the senior commander uses to translate this strategic goal to operational actions is also considered, because these variations are affected by the environment of the installation, the active context, and the tools available to the health promotion teams in each installation. The CHPC can be analyzed as an enterprise consisting of interactions between a variety of stakeholders and processes. Nightingale and Srinivasan (2011) provide a method for evaluating the current state of an enterprise as part of a roadmap to enterprise transformation. The following section is an analysis of the CHPC, highlighting the way one strategic policy has manifested into three distinct processes as a result of the environment at the installation and the active context of the team members.

Community Health Promotion Council

The CHPC is the strategic platform for the senior commander to manage the public health system at the installation level. The CHPC is held at least quarterly, chaired by the senior

commander, and is supported by a series of working groups. The CHPC allocates resources and provides the senior commander with a forum to set priorities related to public health and discipline.

There is some inequity in the current execution of the CHPC across the Army. Army Public Health Command currently funds several posts with full-time Health Promotion Officers (HPO) and Health Promotion Program Assistants (HPPA); while other installations fulfill this position with internal resources. Not surprisingly, CHPC sites with fulltime dedicated HPOs and HPPAs scored higher on self-assessments rating than their adherence to the program (Courie, Rivera, & Pompey, 2014). However, this study failed to address the value of the different CHPCs in terms of programs initiated, reductions in population risk distributions, or command team perceived effectiveness of the CHPC process.

Goals and Objectives

The strategic objective for the Army health promotion program is "to maximize readiness, warfighting ability, and work performance. Objectives include enhancing the well-being of all Soldiers, Army civilians, Family members, and retirees; and encouraging lifestyles that improve and protect physical, behavioral, and spiritual health." (Army, 2010, p. 2)

This strategic goal is further refined at each installation with specific objectives that may vary by installation, year, and commander focus. As an example, site A identified seven goals in their strategic plan for calendar year 14.

1. Quarterly, the installation will conduct a CHPC.
2. Improve the spiritual health and resilience of the community.
3. Improve the habits, attitude, and environment of the community.

4. Improve the emotional and mental health of the community.
5. Improve the familial relationships and social resilience of the community.
6. Improve the physical health and resilience of the community.
7. Improve accessibility to and utilization of installation resources.

Enterprise Maturity and Evolution

The CHPC is a relatively novel routine for the Army, and various sites are at different levels of maturity. The conditions of each site, the make-up of the HPT, and the team leadership have influenced the learning of the team. Specifically, each CHPC has grown in maturity in different areas based on what conditions are most salient at that site. Site A has been focused on performance metrics for the CHPC programs and initiatives. Therefore the HPT at site A has demonstrated the most learning in collecting, analyzing, and displaying data concerning the measures of effectiveness of local programs in their CHPC.

Site B is characterized by a very rigid operational timeline, in which all the units at the installation are engaged in supporting mission activities for a period of time each month. This unique condition demands that the CHPC members have a highly synchronized calendar of events for their initiatives and programs.

Site C is unique from the other two sites in that it does not have a dedicated, funded health promotion team. This site is characterized by a high ratio of senior officers to lower enlisted personnel, and is not manned in the typical Army Force Generation Model (ARFORGEN) process. The CHPC process at this site is used the process for senior commanders to make sense of issues in the health and discipline of the force.

The CHPC is a relatively novel process, and even though it originated out of common strategic directives, it has evolved differently at different locations in order to best fit the environment and the senior commander. In organizations with dedicated, resourced health promotion teams, the process is coordinated by and run by the health promotion officer. In sites without a resourced HPO, the process is very command-centric. CHPCs have organized in different ways depending on the perspective of the commander, and the environmental conditions at the different installations. The following sections will focus on describing the major differences in the CHPC process, as influenced by the organization's unique perspective.

Performance Metrics

The HPT tracks, analyzes, and reports performance metrics for the senior commander at the CHPC. The type of data, the method of collecting the data, and its visualization is a source of demonstrating organizational learning and process maturity. Across the enterprise the trend is to track performance metrics of aggregated individual behavior. For example, the performance metrics that measure the number of overweight Soldiers, Army physical fitness test failures, and the occurrence of Soldiers being caught driving under the influence are commonly measured and displayed during the CHPC.

The SMART (specific, measurable, attainable, realistic, timely) test can be applied to determine the quality of organizational metrics (Nightingale & Srinivasan, 2011). Site A is the only observed location to have metrics that generally conform to this test, although even the 'realistic' assessment may be questionable. Site B and C do not collect measures of effectiveness for local programs and in some cases even do not have clearly stated metrics for the CHPC and its related processes. Site C makes use of several measures of performance. Although the metrics generally pass the SMART test, they fail to demonstrate links between the performance of a task

and the measured effectiveness of the desired outcome. Further the metrics are not collected and analyzed in a meaningful time series, even though there is an attempt to make an analysis about the trends of quarter to quarter trends. Providing a static quarter to quarter analysis of a trend often fails to be useful in determining any underlying structure for the cause of the behavior (Sterman, 2000).

Summarizing data and displaying in a graphical form is also useful to determine the underlying structure of the data (Rice, 2007). The CHPC at site A has demonstrated learning in the graphical display of data, and has the most mature display and analysis methods for health and discipline trends. Site B does not display metric data at the CHPC. Instead, it displays graphical information about dates and calendars in order to coordinate along its highly rigid operational calendar. Site C has a much lower maturity in the graphical display of metric data for decision makers at the CHPC.

Site A CHPC Performance

The HPT at site A during the period of analysis consisted of a former member of the military and professional public health worker. The HPT had substantial knowledge on the CHPC process and performed the functions as the primary briefing officer at the community health promotion council. Other primary briefing functions were the working group chairpersons or special topics of interest. In the area of performance metrics and analysis, site A was the most mature and demonstrated faster learning in this area than other sites. The site was less concerned about de-conflicting events with unit battle rhythms, and was incorporating some innovative techniques in gathering other population health data.

Site A routinely tracks 8 performance metrics corresponding to the four focus areas, substance abuse, physical health, relationships, and financial health. The metrics are listed below in Table 1 (Army, 2014). Evaluating theses metrics against the SMART test demonstrates that they are of reasonably high quality. The metrics are specific and measureable. The HPT uses specific methods for determining the data, and what counts when determining the numerator and denominator for the rates (or ratios of population). There is less certainty as to whether the metrics are attainable, realistic, or timely. For example, changing cultural trends in areas like substance abuse over a one year time horizon seems unreasonable. The results of a meta study of community health promotion interventions revealed that changes are often on the magnitude of 1 – 5%, and typical programs last 2 – 3 years, with some making little impact after 7 years (Merzel & D'Afflittl, 2003). Given the magnitude and time horizon of typical community health interventions, the metrics at Site A seem overly optimistic, but are otherwise well formed.

There may be some opportunities to improve on the specificity of the metrics. Instead of "Reduce the number of APFT failures" the metrics could read "reduce the number of Soldiers who are flagged for APFT failure." In the current metric the word 'failure' is used as a noun to describe a Soldier in a certain condition of physical fitness. If one Soldier fails the test multiple times, the metric would not necessarily increase. Although there is little confusion about the implementation of the metric, rewording the metric make some of the choices to reduce this stock of Soldiers more clear. As an example the only way to reduce APFT failures is to increase overall fitness. Another way to reduce the stock of Soldiers who are flagged for failure is to process chapter paperwork faster.

Table 1 - Site A Performance Metrics

Substance Abuse	Reduce the number of positive urinalysis by 10% over the next fiscal year. In FY 14, the urinalysis target is 5.7 positives per 1,000.

	Reduce the Soldier monthly DUI rates, on and off the installation, by 20% over the next fiscal year. In FY14, the DUI target is 75 per 10,000.
Physical Health	Reduce the number of overweight Soldiers in the division by 10% over the next fiscal year. In FY14, the target is to reduce overweight flags to 31.1 per 1,000.
	Reduce the number of APFT failures in the division by 10% over the next fiscal year. In FY14, the target is to reduce APFT failure flags to 28.0 per 1,000.
Relationships	Reduce the number of spouse abuse cases across the installation by 10% over the next fiscal year. In FY14, the target is less than 112 cases that meet criteria for spouse abuse.
	Reduce the number of child abuse/neglect cases in the installation by 10% over the next fiscal year. In FY14, the target is less than 90 cases that meet criteria for child abuse/neglect.
Financial Health	Of all people accessing AER loans, reduce the number of loan requests stemming from money mismanagement by 10% over the next fiscal year.
	Maintain 85% compliance in units having a primary and alternate battalion-financial NCO trained, on orders, and performing duties.

The data visualization of the performance metrics in Site A has undergone three transitions to its current state. These transitions demonstrate organizational learning as a changed behavior to a routine, by attempting to interpret information. The following three figures below highlight the three transitions in the display of data at the CHPC, with the scales removed from the original documents. Figure 6 (Army, 2012b) below shows the display of benchmarking in the first epoch to the current state. The current value was represented by the black triangle above the line, and the baseline was determined by the arithmetic mean of the values in the previous year. This method of data display is of little value for understanding trends over time, since the trends may not be cumulatively better. It also suffers from being able to understand the underlying structure that could cause cyclic behavior in the data.

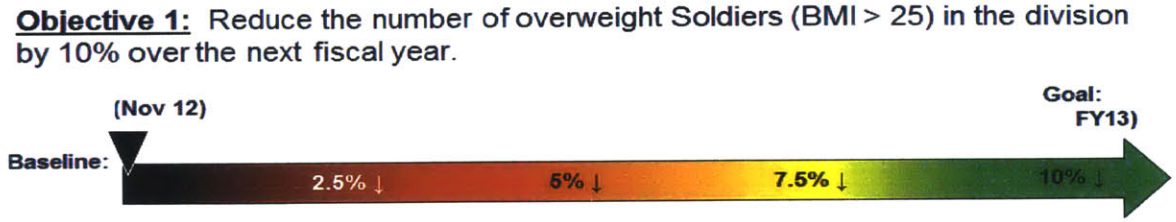

Figure 6 - Overweight Soldier Performance Metrics in Epoch 1 (Army, 2012b)

The methods for displaying data in the first epoch of the CHPC were rather flawed, and the organization adapted rather quickly by changing the method of display at the next meeting. An example of the modified graphical display of data is shown below in Figure 7 (Army, 2013). The organization changed its behavior to display the data by month, along with a line representing the target for the metric. The change allows leaders to better understand trends in the recent past, but also provides more noise by measuring every month.

Objective 1: Reduce the number of overweight Soldiers in the division by 10% over the next fiscal year. In QTR 1, FY13, there was a rate of **38.0** per 1,000 overweight Soldiers across the installation.

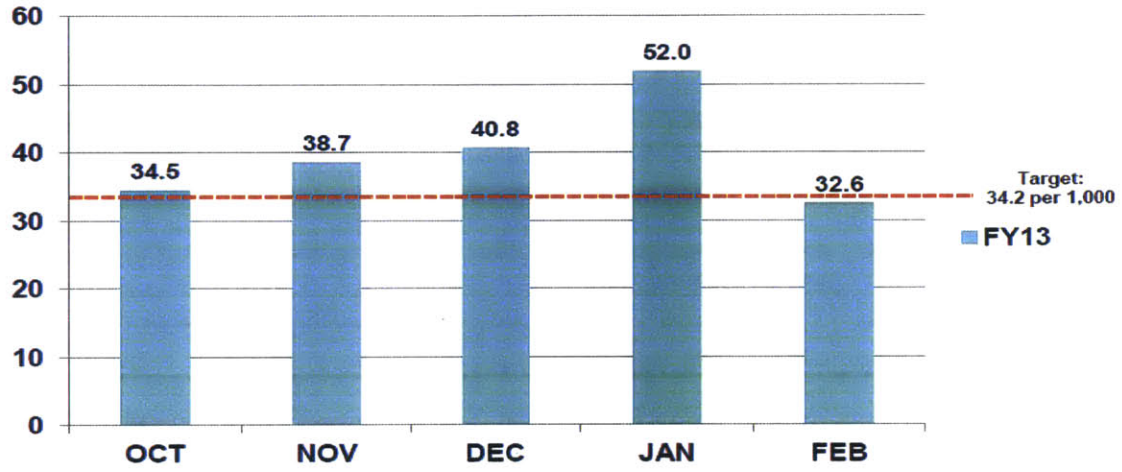

Figure 7 - Overweight Soldier Performance Metric in Epoch 2 (Army, 2013)

In the second quarter of fiscal year 2013, the team again changed their method for displaying data. This epoch of data display was utilized for 3 quarterly meetings (Army, 2013). In order to filter out the perceived noise of the monthly variations, the HPT chose to use the same graphical format, but represent the rate of each quarter. This was calculated as the arithmetic mean of the months. This effectively smoothed out the random variations in the months, but not without some loss in understanding the underlying structure of the data. For example, in Figure 7, we can see a steady rise in the rate of overweight population from October to January followed by a sharp decline. In the Figure 8, we see almost no change from the average rate in quarter 1 and quarter 2. Displaying the aggregate data; however, clearly shows a higher prevalence of the overweight population in the winter months. This highlights the larger issue of the HPT's benchmarking method. The target was set as a reduction by 10% in the yearly average against a quarter that is naturally higher in prevalence of overweight Soldiers. The result is success without really trying, since the natural behavior of the system seems to be almost 10%

lower in the yearly average, than in quarter 1. This limitation was the result of having limited data for setting the benchmark. The resultant changes in the next epoch show further indications of organizational learning.

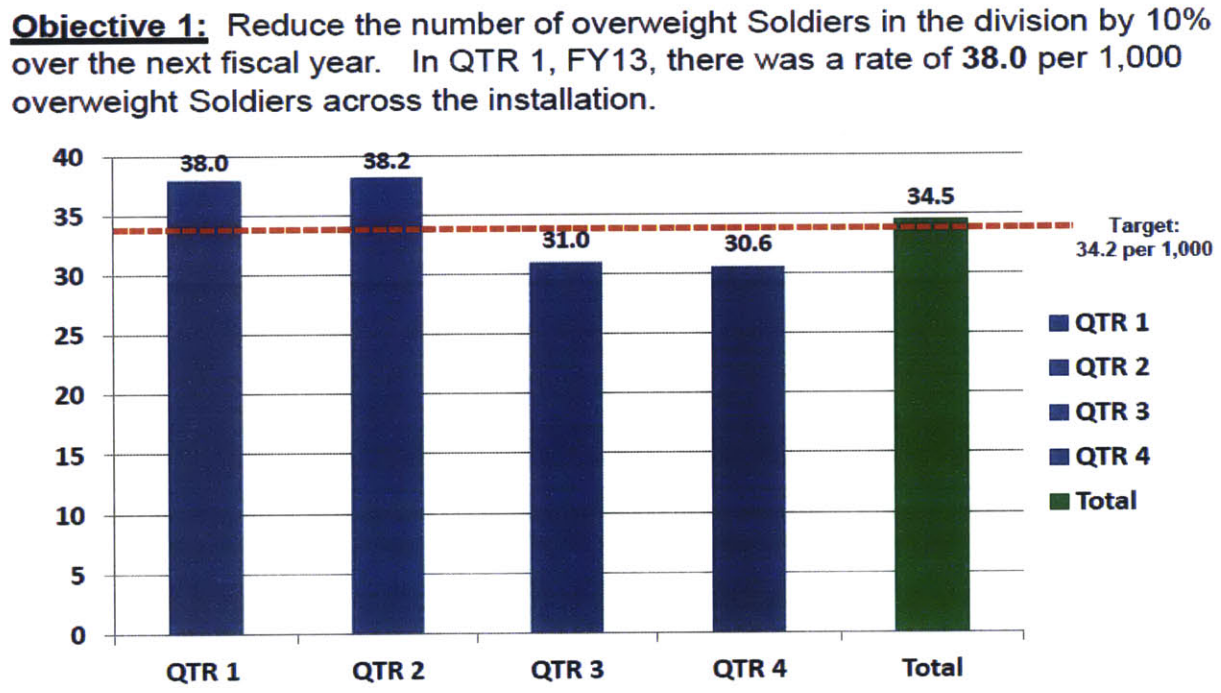

Figure 8 - Overweight Soldier Performance Metric in Epoch 3 (Army, 2013)

The final change to the display of data is the Figure 9 (Army, 2014). It shows a return to the monthly measures of the overweight population, accompanied by two trend lines. The long term average is the average of all collected data, and a rolling 6 month average. The health promotion team learned from the data it had collected in the previous year and incorporated it into setting a more consistent target for the yearly total in reduction in the population of overweight Soldiers. The added trend lines also help leaders to understand the trends in the data without having to interpret for themselves. While this graphical display of data is the most useful for leaders, it does not clearly answer the question "Are we accomplishing this metric?" The

target is the yearly average in the population, which is not represented in the graphical display, which should lead to an addition of that measure, or an evaluation of the method for setting the benchmark.

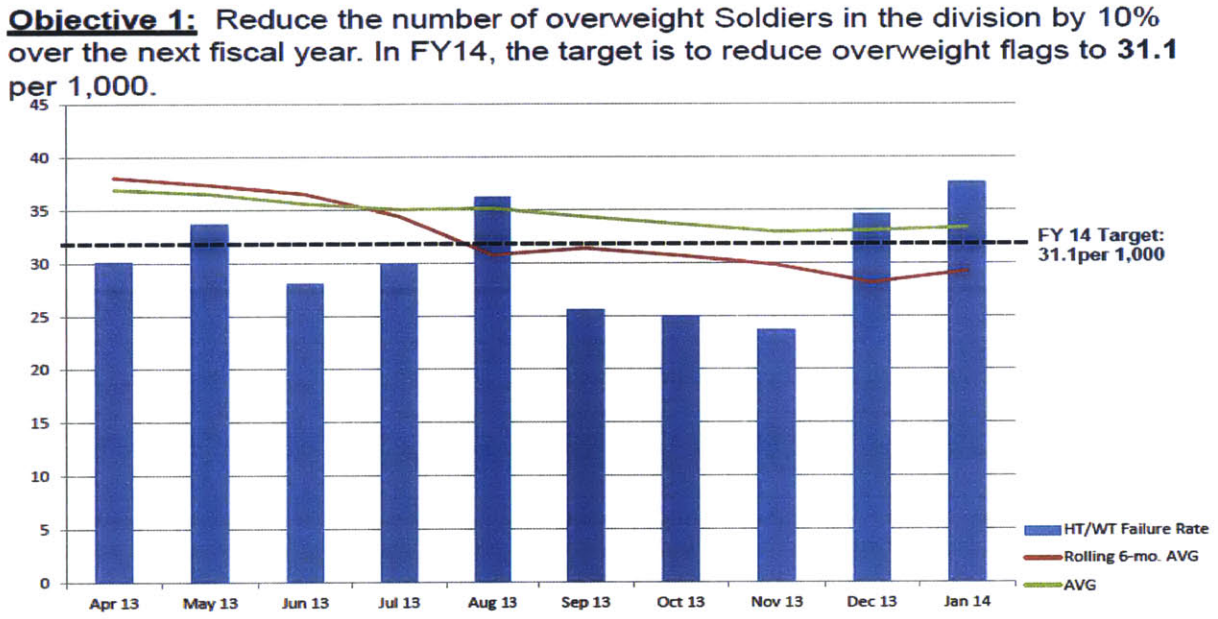

Figure 9 - Overweight Soldier Performance Metric in Epoch 4 (Army, 2014)

The changes in behavior in the graphical display of data associated with population data demonstrate organizational learning of the HPT at Site A. With each epoch, the HPT identified a problem with the graphical display of data to the senior commander and implemented solutions. In each instance of change, the senior commander provided the impetus to change the behavior of the HPT. The focus on metrics and measuring effectiveness of programs and initiatives at site A contribute to the rate of change in analyzing the data and the graphical display of data. These changes demonstrate the evolution of change when the HPT is focused on the process performance metrics.

Site A was attempting several local innovative solutions to determine population health data, beyond the available Army data streams. The HPT was developing local surveys to measure the effectiveness of programs, and had been using google analytics to track unique hits on their website.

Site B CHPC Performance

The HPT at site B during the period of analysis consisted of a former member of the military and professional public health worker. The HPT had substantial knowledge on the CHPC process and performed the functions as the primary briefing officer at the community health promotion council. The other briefing members of the CHPC were the chairs of the subordinate working groups. This process was rather similar to the process at site A, where the HPT were staffed by APHC. The performance of the CHPC at site B is quite different from that of the others studied. In the area of performance metrics and data analysis the site is relatively immature. However, in the areas of calendar integration and innovative methods for understanding population health, the site is implementing some unique solutions.

The HPT at site B primarily uses one of the supporting processes, the installation prevention team (IPT), to track trends and provide analysis to the CHPC. Performance metrics are tracked and reported quarterly, without the graphical display of long term trends. Additionally, there is not a clear set of goals for the CHPC, although there are population metrics, this is not accompanied by a meaningful target to determine if the system is performing as intended. At site B, the CHPC and IPT are quite immature in their capacity to track trends and provide analysis over time, offering only a static depiction of quarter over quarter trends. However, the lack of maturity in providing analysis on performance metrics is offset in other

areas, primarily in unique ways of gathering data on population stress indicators and calendar integration of events.

The HPT at site B has developed a highly effective process for synchronizing activities along determined themes. The site uses a bar with dates to depict this information to the command team for approval, shown in Figure 10. Given the knowledge of the commander of the routinized schedule, this allows the senior commander and the staff to de-conflict events with the battle rhythm of the installation. Although this method seems very simple, this is the most effective representation of a planned series of activities that are intended to affect a specific outcome.

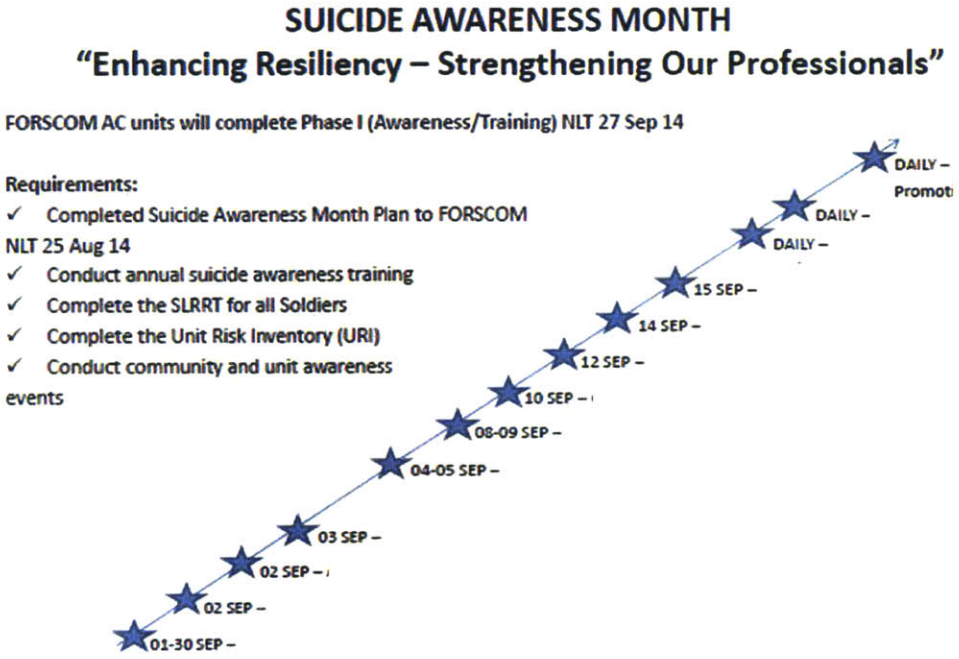

Figure 10 - Site B Calendar Activities

The CHPC through its working groups was collecting generic population counseling trends from its embedded military family life consultants. As an example, they may brief that 50% of counseling is for marital issues, 25% for workplace stress, and 25% for financial issues. This innovative practice provides some immediate feedback to the senior commander on where to allocate resources, and which problems may be present but not yet reached the level of discipline problems, and therefore not being reported in the standard Army data streams.

Site C CHPC Performance

The CHPC at site C performed processes significantly differently than the CHPC at site A and B. The HPT consisted of one company grade military officer, outside the reporting chain of the senior commander. In other sites the health promotion officers could articulate their path to obtain guidance from the senior commander, typically through the chief of staff; however at this site the health promotion officer did not have a clear method for scheduling meetings, receiving guidance, or getting feedback from the commander. The HPO's role in the CHPC was primarily administrative, collecting and organizing charts during the CHPC and taking notes. The HPO did not have a primary briefing role. The primary briefing officer was the senior commander, with other briefers being the unit commanders, and primary garrison agency leads.

Site C reports trend data using a table format by month, and displays 6 months of information. Even though these numbers are displayed as units, not ratios the population of the unit is likely generally stable over the time period, so this likely has little effect on the decision maker. Although the graphical display and analysis of the performance metrics is rather immature, the site is collecting positive metrics, focusing on encouraging positive outcomes not simply reducing negative trends. The senior commander encourages and tracks performance

metrics related to college enrollment, volunteering, and excellence in the Army physical fitness test. This style of managing the positive outcomes was not observed as strongly in other sites.

The CHPC performance at site C was unique in its approach as a very command-centric approach. This approach focused on creating a shared vision between the unit commanders and the garrison service provides about the ways and means of maintain a high level of unit readiness. During the CHPC the senior commander stated that this meeting was "an opportunity for cross talk." The unique circumstance of establishing a CHPC without a dedicated HPT resulted in a meeting that was less about meeting performance metrics and more focused on creating a shared understanding of the challenges that unit faced regarding readiness and the health and discipline of Soldiers.

System-wide Variations among CHPC

The previous section described the internal performance differences between the three CHPCs at various sites. These differences can be explained by the theoretical framework for organizational learning proposed by Argote (2013), who emphasizes that the environmental context effects the experience of the organization. This explains the variations of the CHPC performance of the routine to best fit the context of their environment. This section will focus on the external architectural differences between the CHPC and other routines that are contained within the system to manage health and discipline at the installation.

CHPC Working Group Architecture

The CHPC architecture in practice at the observed sites is a set of subordinate working groups, typically chaired by an O6. The functions of these working groups are generally to assess, monitor, develop, and implement programs and initiatives locally to affect health

outcomes within their working group. These working groups provide input to a board of directors, which then provides input to the CHPC. The CHPC provides feedback, guidance, and policies for the working groups to implement. Figure 11 below models the standard formal architecture for the CHPC, with the exception that the function of each working group varies from installation to installation.

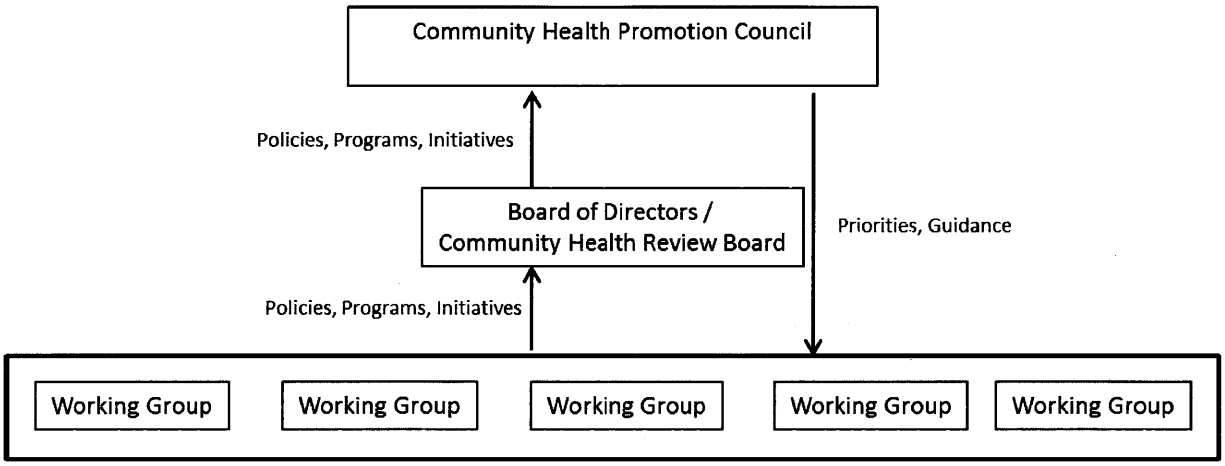

Figure 11 - CHPC Standard Architecture

The architecture at this level is standard and appears to be effective; however, there are several supporting routines that are incorporated in a variety of ways. I will conclude by highlighting three routines, the Installation Prevention Team (IPT), the Suicide Prevention Task Force (SPTF), and the Brigade Health Promotion Team (BHPT), that have evolved in different architectures in the three sites. The extent to which these variations produce effective results is not clear; however the extent to which these variations results in improved CHPC effectiveness may be a topic for future study.

The Installation Prevention Team is an inter-disciplinary council that is tasked with reviewing and analyzing the installation's risk data related to substance abuse (Army, 2012a). Site B incorporates the IPT by using the IPT to provide input to each working group. The Health

Promotion Team, and associated working groups, does not necessarily collect data to evaluate programs or monitor population health trends. Sites A and C do not formally incorporate the IPT into the CHPC architecture. In these sites members from the IPT would attend working group meetings. Whether the IPT and CHPC are integrated formally, the two processes are tasked with analyzing population data and implementing programs to address population needs. The CHPC is more holistic, whereas the IPT is more focused on substance abuse. The extent to which the IPT and the CHPC are integrated is one which may need to be addressed in future research.

Army Suicide Prevention Program requires that each installation establish a Suicide Prevention Task Force (SPTF) to manage the local program at the installation, further specifying that the SPTF is a sub-committee of the CHPC where one exists (Army, 2009). Of the three observed sites, only one site had a suicide prevention working group. At site A, the SPTF was a separate routine, not integrated with the CHPC as a working-group. The SPTF at this site was described as the highest level Soldier High Risk Team Meeting. The Soldier High Risk Team Meeting is a process that takes as input the psychological risk level of Soldiers from a variety of sensing mechanisms and as an output produces a prioritized list and risk management plan for each Soldier. These lists are typically compiled by unit at higher and higher levels. At site A, these lists are compiled at the highest level and the risk mitigation plans are briefed to the commanding general at a quarterly review. At other sites, the Solder High risk Team Meeting is briefed at the battalion or brigade level, and the SPTF is organized as a working group under the CHPC, where it is more concerned with population metrics and program resource allocation.

Brigade commanders are required to establish teams to facilitate health promotion initiatives (Army, 2009). These teams in practice have been titled The Brigade Health Promotion Teams (BHPT). BHPTs are often depicted in the formal architecture as providing input to the

CHPC working groups. At site B and C, the BHPT chair, typically the brigade commander, briefs during the CHPC; however, at site A the BHPTs do not routinely brief at the CHPC. Between site B and C, the level of information provided by the BHPT is significantly different. Site C placed a high priority on the information provided by each BHPT chairperson. The BHPT chairperson briefed first followed by the CHPC working groups and the supporting installation program offices. In site B, the BHPT chairperson briefed during the middle of the CHPC, and the information provided may not have been central to the function of the CHPC. At site A, the BHPTs do not brief at the CHPC. At site A, the BHPT is depicted as providing inputs to the CHPC working groups. The function of the BHPT is an important question to the system that the Army has not answered. In some sense the BHPT may have been intended to interface between population trends and individual actions, but there is no guiding policies that make this occur. The differences in the formal and functional relationships in the BHPT across the organization provide opportunities to learn how the Army might best depict the architecture of the CHPC in the future.

Argote, L. (2013). *Organizational Learning: Creating, Retaining and Transferring Konledge*. New York: Springer.

Army, U. (2009). *DA PAM 600-24: Health Promotion, Risk Reduction, and Suicide Prevention*. Washington D.C.

Army Health Promotion (2010).

Army, U. (2012a). *AR 600-85: The Army Substance Abuse Program*. Washington, DC.

Army, U. (2012b). *Community Health Promotion Council*. Site A. Internal Report.

Army, U. (2013). *Community Health Promotion Council*. Site A. Internal Report.

Army, U. (2014). *Community Health Promotion Council*. Site A. Internal Report.

Courie, A. F., Rivera, M. S., & Pompey, A. (2014). Managing Public Health in the Army Through a Standard Community Health Promotion Council Model. *U.S. Army Medical Department Journal*, 82-90.

Fairchild, A. L., Rosner, D., Colgrove, J., Bayer, R., & Fried, L. P. (2010). The EXODUS of public health. What history can tell us about the future. *American Journal of Public Health, 100*(1), 54-63. doi: 10.2105/AJPH.2009.163956

Merzel, C., & D'Afflittl, J. (2003). Reconsidering Community-Based Health Promotion: Promise, Performance, and Potential. *American Journal of Public Health, 93*(4), 557-574.

Nightingale, D. J., & Srinivasan, J. (2011). *Beyond the lean revolution : achieving successful and sustainable enterprise transformation / Deborah J. Nightingale and Jayakanth Srinivasan*: New York, N.Y. : AMACOM, c2011.

Rice, J. A. (2007). *Mathematical Statistics and Data Analysis* (3rd ed.). Belmont, CA: Thomson Brooks/Cole.

Sterman, J. (2000). *Business dynamics : systems thinking and modeling for a complex world.* Boston: Irwin/McGraw-Hill.

Ugalde, R. M., & Resta, J. J. (2010). The US Army Public Health Command Initiative: Transforming Public Health Services for the Army. *U.S. Army Medical Department Journal*, 4-10.

Multi-level System Modeling to Improve US Army Health and Discipline

Introduction

This chapter applies a systems thinking (Checkland, 1999) approach to the problem of generating health and discipline in the United States Army. Soldiers are exposed to an enormous amount of stress in the course of their duties, including combat and occupational stress. The recent wars in Iraq and Afghanistan contributed to increases in combat stress. This added stress has been cited as an important contributing factor in the increase in negative health and behavioral outcomes, including post-traumatic disorder and suicide (Army, 2010b, 2012c; Ursano et al., 2014). The US Army's current strategic management response to this problem has been an emphasis on strengthening the effectiveness of the individual programs that deliver services to treat the negative outcome behaviors (substance abuse, suicide, sexual assault, etc.). This symptom focused approach to solving complex interconnected behavioral problems is ineffective, given the highly interconnected nature of the causal elements. As an example, the number of military and veteran suicides continued to rise from 2006 – 2009 despite a concerted focus on suicide prevention responses and significant increased resource commitment of national hotlines, counselors and therapists, and increased pressure on leader involvement (Wood, 2013). Similar trends in substance abuse, domestic violence, and sexual misconduct have also been resistant to increased resource allocation focusing on individual behaviors (Army, 2012c).

The current paradigm of managing health and discipline by managing individual programs in the system, while ignoring their interactions has not resulted in reversing the trends of behavioral problems. Similar phenomena have been observed in physical systems. Leveson (2011) argues that the management of highly reliable components will not necessarily lead to a

safe system, and a highly safe system may not have reliable components. The current paradigm of increasing the effectiveness of components gave rise to several change efforts in the Army, including the Army's Comprehensive Soldier and Family Fitness (CSF2) Program. CSF2 was established to increase the psychological health of Soldiers (Army, 2014a). This is primarily accomplished through teaching positive psychology and individual resilience, with the attempt of making the Soldier more robust in being able to recover from stress. While this may have been a missing component in the system of health and discipline, it is unlikely that inserting a more reliable component without consideration for the interactions between components will have a profound impact on causing the system to change.

In order to make meaningful changes to a complex system, the Army needs to understand the interactions between the system components and their interactions with their environment. Systems may be considered complex for a variety of reasons (Sussman, 2000). The system that generates health and discipline in the Army is complex for several reasons. Most evident is the detail complexity in the system. The desired effect is only achieved through a series of many interconnected elements (Maier & Rechtin, 2009). The network interconnections of the system have grown sufficiently large that modeling all of them would not be useful. The system is non-linear. The effects from the system are not proportional to the inputs (Sterman, 2001). The main prevention focus is on training, but Soldiers who receive prevention training (suicide prevention training, sexual assault prevention training, etc.) may still commit an act. However, there are Soldiers who do not receive training that do not commit these acts. The system is also dynamically complex. Changes in the system components occur on different time-scales, and the interactions between these time-scales cause unpredictable behavior (Forrester, 1969). For example, post-traumatic stress may incubate for long periods before any event happens. Missing

one class on ethics training, or reducing one hour of training on counseling techniques may not cause undisciplined behaviors to rise, but over time the continued atrophy of these leadership skills may lead to an increase in events. The table below summarizes these three important types of complexity.

Table 2 - Types of System Complexity

Term	Definition	Application in Health and Discipline
Detail Complexity	The number of components and the combinatorial interactions that must be considered when making a decision.	Increases in the number of services offered for health and discipline support increase the difficulty in understanding how changes to one component affect another.
Non-linearity	The effect is not proportional to the cause.	In a linear system, increases in prevention training would be proportional to decreased incidents. In real world systems, this is only true to an extent before people become saturated with the training and it no longer has the desired effect to change behavior.
Dynamic Complexity	Change in the system occurs at different time scales.	A Solder with many different stressors may appear not to be changing, but stress is either accumulating or reducing slowly. Over a long enough time horizon the effect of major life events on stress levels may be clearer.

This chapter describes the major characteristics of the system, the important components, and provides a view of the system using a standard modeling language – Object-Process Language. The next section of this chapter will present the foundations for capabilities, and advance the system architecture as the mechanism by which a capability emerges from a system of components. Finally, I will present a representation of the current architecture of the system, comparing three sites to the described architecture in Army regulations, using Object-Process Methodology to communicate these differences graphically.

Capabilities as a socio-technical system

Dynamic capabilities research is a fast growing and diverse research field. One that has been described as not well defined or validated with strong empirical evidence (Vogel & Güttel, 2013). Definitions of dynamic capabilities differ, but typically refer to the organization's ability to learn, integrate, or change its resources to address its environment (Eisenhardt & Martin, 2000; Teece, 2009). In some sense the output of dynamic capabilities are the new capabilities of the organization, which in turn create value for the organization. The Department of Defense defines a capability as "the ability to accomplish a specified course of action" ("JP 1-02," 2010). Other definitions of capabilities that focus on the completion of a task include: "a firm's ability to perform a productive task which relates either directly or indirectly to a firm's capacity for creating value through effecting the transformation of inputs into outputs" (Grant, 1996). Winter (2000) provides a slightly different framework for thinking about capabilities as a routine, or collection of routines, that provide managers with a set of decision options, making the distinction that capabilities are of some substantial scale and are clearly related to the survival of the organization.

Because the definitions of capabilities have not reached a consensus in the literature, I define a capability *as the organization's ability to accomplish a desired task that creates value for the organization.* While there is no theoretical limit to the scope of a capability, any meaningful capability that creates value across the entire organization will practically be a large collection of routines, people, and associated technological tools.

In addition to a variety of definitions, there is debate about the primary source of the micro-level origins, or the mechanisms through which capabilities emerge. Felin, Foss, Heimeriks, and Madsen (2012) assert that the micro-foundations are the primary components

underlying organizational routines and capabilities that explain their emergence, organized into individuals, processes, structure, and the interactions among them. These foundational constructs provide the impetus for performing a systems analysis of the US Army's capability in managing heath and discipline. Systems thinking is characterized by hierarchy, modeling abstraction, a focus on the holistic representation of the interaction between the elements, and that emergent properties at the system level are greater than the sum of individual elements (Checkland, 1999) (De Weck, Roos, & Magee, 2011) (Leveson, 2011). From these definitions, a capability might best be represented as the emergent property of a socio-technical system, composed of the following elements: individuals and their knowledge base (Grant, 1996), routines (or processes), their structure (Felin et al., 2012), and the technological tools of the organization.

Research Methods

This study employs a systems approach, including research techniques from management sciences and engineering. It is centered on the Army installation because the Army focuses policies and guidance for health and discipline at the installation level. There are two primary components to this study, a system modeling approach to regulations, and evidence from three Army installations.

The evidence collected from the Army installations included: field interviews, process observations, and internal documents. Field interviews were conducted over a period of three to five days during the summer and fall of 2013 with relevant stakeholders, including Army commanders, Army program coordinators, and representatives from the Community Health Promotion Council. The team observed quarterly CHPC meetings at two of the sites, and received internal documents including meeting minutes, strategy documents, charters, and interventions implemented over the last two years. The documents, process observations, and

field interviews were analyzed using a similar systems modeling approach applied to Army regulations. The results of the analysis from these three sites were validated across other representative sites at Army installations in Army Forces Command units, and were deemed to be a fair representation of organizational behavior across the Army.

System Architecture

A system's architecture affects its performance, complexity and emergence of functions (De Weck et al., 2011). Architectural decisions have been hypothesized to be even more important in understanding and managing large, complex, socio-technical systems. Following the definition Osorio, Dori, and Sussman (2011), "a system's architecture is the embodiment of concept for achieving the desired system's function in terms of its form." While a full treatment of the Complex Large-scale Interconnected Open Socio-technical-Object Process Method (COIM) is beyond the scope of this thesis; however, the method provides a platform from which we will consider major aspects of the health and discipline system architecture and the evolution of the system. Future research may intend to answer if architectural changes over time can explain or predict emergent behavior of the system.

System Boundary and Context

Initially we begin by describing the system boundary, the major subsystems, and the major external systems that affect the system. Figure 12, below, depicts the system boundary that we consider relevant to the health and discipline capability of the Army. Within the system boundary, the elements of the system are highly connected. The elements pass information about Soldier care between them. They are also involved in accomplishing similar functions, like educating Soldiers about healthy behavior, and promoting health seeking behaviors. The

interactions between the major subsystems within this system boundary will be the primary focus of the intended architecture of the system.

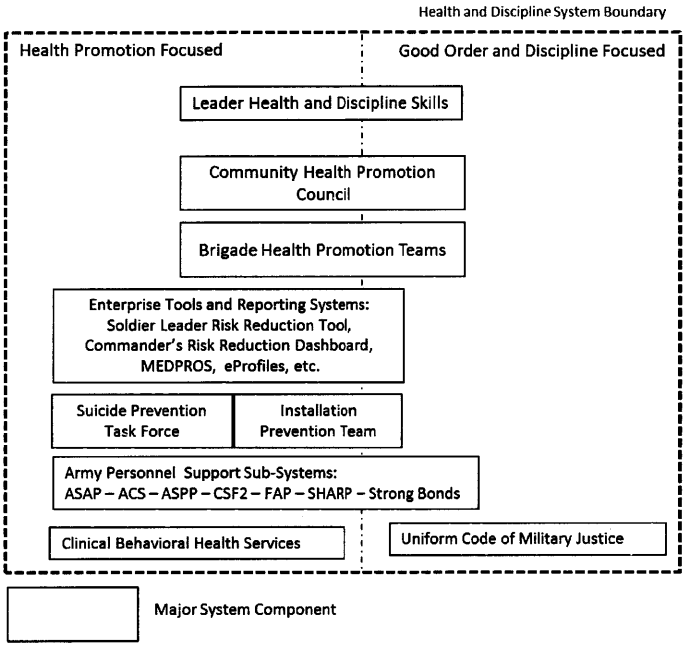

Figure 12 - Health and Discipline System Boundary and Components

However, it is important to be aware that the capability to generate health discipline operates in an organizational sphere. Where it affects, and is affected by the other capabilities in the organization, specifically considered relevant is the Army capability to train and develop leaders, and its warfighting capabilities. There is a relationship between training and developing leader skills in health and discipline and warfighting skills. Due to limitations in training time, tradeoffs in developing tactical skills results in less time developing skills to promote health and discipline in the force. There is also an understanding that healthy and disciplined units are better warfighting units, which is the essence of the tradeoff at the total organizational level. Increasing effort to develop tactical leader skills in the short run, can lead to leaders who are ill prepared to promote health and discipline and erode warfighting capabilities in the long run.

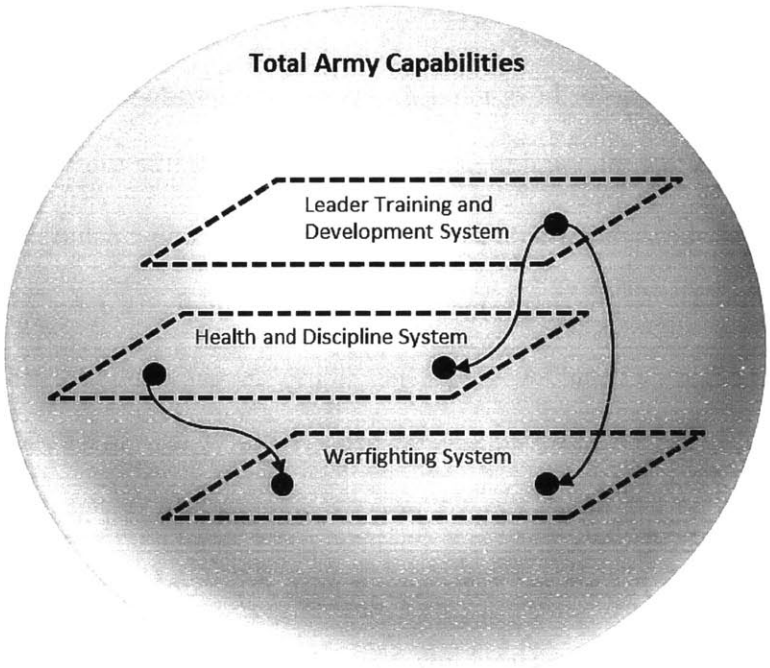

Figure 13 - Sphere of Total Army Capabilities

The US Army operates with a distributed leadership framework called 'Mission Command' which emphasizes making decisions at the point of action, building cohesive team, creating shared understanding, and providing a clear commander's intent (Army, 2012a). This type of framework for issuing orders and writing regulations is the core issue in the tension between standardizing processes and allowing subordinate commanders flexibility in operations. Commanders that are overly rigid in standardization of processes violate this principle and risk stifling innovation. On the other hand, without any regard for the ways and means that a subordinate unit will accomplish certain functions, senior commanders risk specifying goals that cannot be accomplished. Additionally, the processes may be so widely different that there is no opportunity to learn across the organization.

System Goals and the Motivation for a Change in Architecture

The goal of the system for health and discipline is to improve Soldier readiness, making them more effective at accomplishing their wartime missions. While most programs are aligned with this goal and describe their mission as improving Soldier readiness and the overall fitness of the Army (Army, 2009, 2012b, 2014a), these programs are focused on the prevention and response to a single negative behavior – substance abuse, sexual assault, or suicide. The goal of improved unit readiness can only emerge at the system level, managing the component interactions to affect a change in the culture of the organization. Most of the sub-system goals are evident by their title. The Army Substance Abuse Program's goal is to detect, prevent, educate, and treat substance abuse. The Army Suicide Prevention Program's goal is to prevent suicide (although the language has been modified to reflect a change in preventing high risk behaviors) and respond when a suicide occurs. Clinical behavioral health services are a component of this system and have the goal of treating Soldiers with medical conditions, which may conflict in some regards with the goals of the Uniform Code of Military Justice system, which has a goal of providing justice and separating Soldiers. Even if each of these sub-systems was effective, the goal of improved personnel readiness is a system issue that cannot be handled by any individual program. Lacking a consistent architecture for this system, the role of architecting is left to the company commander, the commander with the least experience and the fewest resources to accomplish the tasks.

The US Army needs to establish standards, and hold subordinate units accountable to these standards; however, senior commanders do not wish to restrict their subordinates' flexibility in accomplishing these tasks. I will advance that a more rigorous architecture of the health and discipline system allows leaders to make decisions about the tradeoff between

standardization and flexibility, while maintaining fidelity on the required elements needed to accomplish the given tasks. The rigor in specifying to what level of the system, processes are executed by standard elements gives senior commanders the ability to more precisely practice mission command in a garrison context.

To that end, Object Process Methodology (OPM) provides a consistent and rigorous method for the studying and describing the architecture of the system (Dov Dori, 2002; Osorio et al., 2011). Although it has primarily been used in product design and systems engineering, the method has been applied to modeling business processes (D. Dori, Hansen, Bichler, & Mahrer). The benefits of OPM are its ability to model the structure of objects and their behavior in one diagram, allowing for hierarchical decomposition. The ability to capture details at one level of a hierarchy, allows senior leaders to specify at what level the system will be standardized. This allows senior leaders to exactly create some level of standardization at a basic level, while understanding the flexibility that subordinate commanders are allowed. By more rigorously capturing the architecture of the system, senior leaders may specify highly standardized processes in some functions of the system, while leaving other functions open for innovative practices.

In OPM structure and behavior are depicted on the same graphical model. Objects are depicted in rectangular boxes. Objects are persistent things, either physical or information that may have a state. An object may have a state, for example a *Population Needs* may be unknown or known, an *Activity* may be coordinated or uncoordinated, and a *Commander* may be informed or uninformed. Processes are the entities that transform objects: creating them, consuming them, or changing their state. The process of *Population Assessing* changes the state of *Population Needs* from unknown to known. *OPM* uses Object Process Diagrams (OPDs) to illustrate the

modeled system. OPDs provide rigor to understand and describe the intended performance of the system in a way that is superior to current Army architectural models.

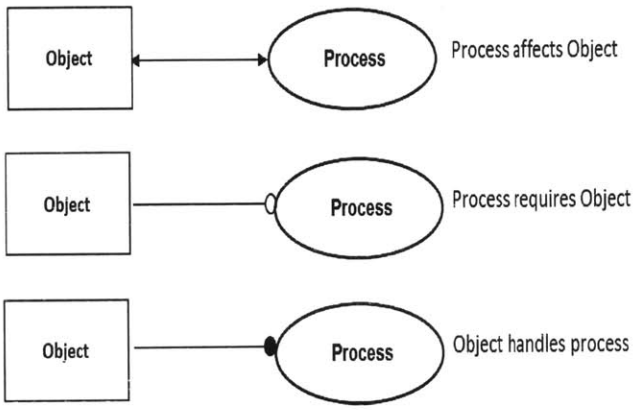

Figure 14 – OPD Summary Legend

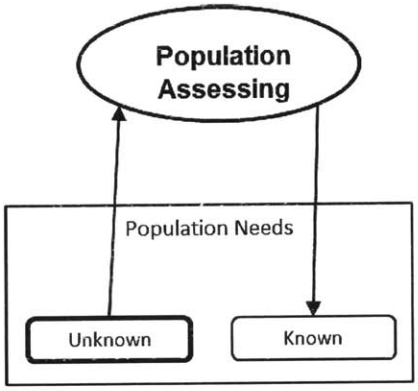

Figure 15 - OPD Process changing object state

In order to increase its capability to generate health and discipline, a system that relied solely on Army leaders and supporting systems would be enhanced by the addition of a Community Health Promotion Council. This can be represented by a single simple and informative OPD, shown in Figure 16 below.

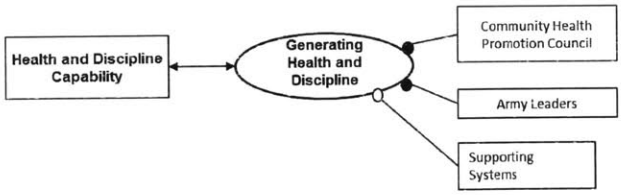

Figure 16 - Army Health and Discipline Capability

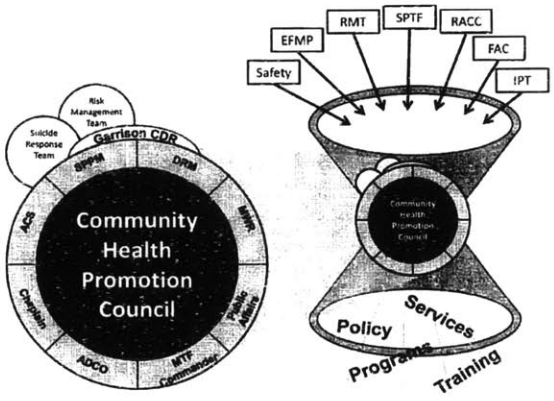

Figure 17 - Army CHPC model of architecture

Alternatively, the Army's best architectural model for this strategic change is depicted in DA PAM 600-24, which makes no distinction if the relationships modeled are that of form or function. The model seems to suggest some formal relationship, in that the supporting programs

meet with the CHPC. The funnel shape seems to suggest some functional relationship, but what that function is remains unclear from the Army model and the Army regulations. Using an Object-Process Methodology we can better model the system at multiple levels, and how it generates a capability for an organization.

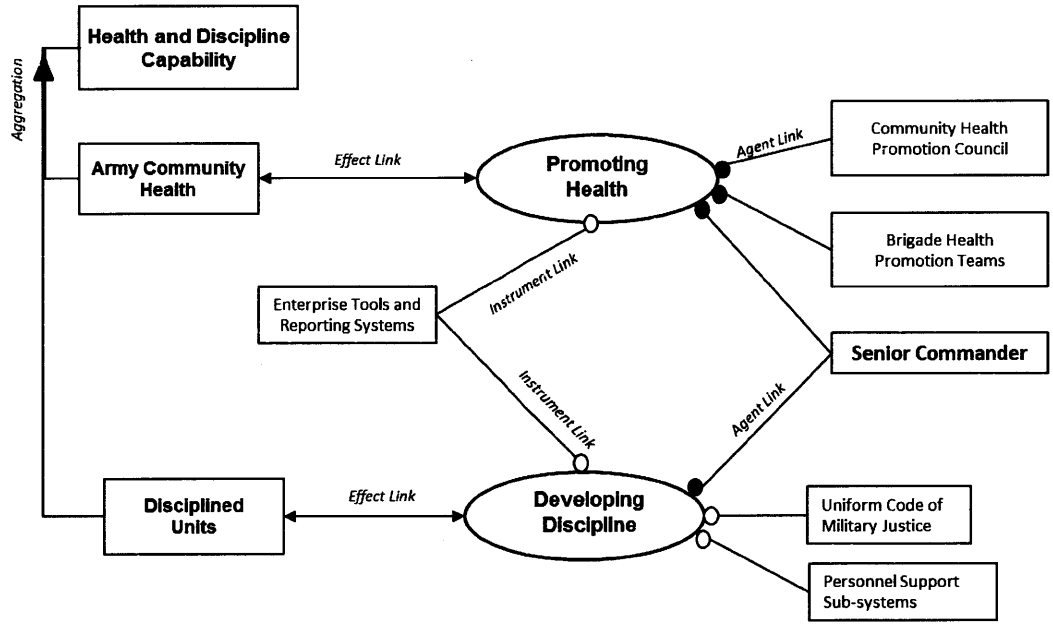

Figure 18 - OPD of Health and Discipline Capability

Figure 18 depicts a disaggregated view of the system that generates a health and discipline capability. The capability is disaggregated into Army Community Health and Disciplined Units, denoted by a triangle and lines. The processes of promoting and developing are linked to these objects with an effect link. The process of promoting pertains to all the processes that comprise Army health promotion. The Enterprise Tools and Reporting Systems and the Army Personnel Support Sub-Systems are instruments that enable the processes. Instruments are denoted as a circle with a white circle at the end of the process. In OPM a process can be enabled by an instrument or an agent. The difference represented in this architecture is that agent links represent some meaningful capacity to make decisions with

respect to the process. The Senior Commander, Brigade Health Promotion Team, and Community Health Promotion Council are agents that handle the process of promoting Army Community Health. The Senior Commander handles developing Disciplined Units, enabled by the Uniformed Code of Military Justice.

The distinction in representing the UCMJ system and Army Personnel Support Sub-systems as instruments, even though they are comprised of intelligent humans that make decisions, is that their actions should be determined by a commander's decision. In this sense they are treated as a 'black box' that processes a commander's decision. The CHPC is represented as an agent because with respect to some of the major sub-processes in promoting, they make decisions. The Installation Prevention Team, Suicide Prevention Task Force, and Clinical Behavioral Health Services are not represented in this top level system design because they do not have a direct effect on the two main processes. The process of promoting health does not directly involve treatment of Soldiers, but instead is focused on the system of activities and interventions that create an environment that enables well-being.

Summary of Health and Discipline Concept

In order to complete the concept for generating health and discipline, we represent two additional processes that indirectly impact the health promotion process. The process of educating the CHPC and the collaboration with other health interested agencies at the installation. The dashed line represents those objects that are not contained within the system, like external resources in the community and other commands. The figure below depicts the completed system for generating a health and discipline capability, at a top level.

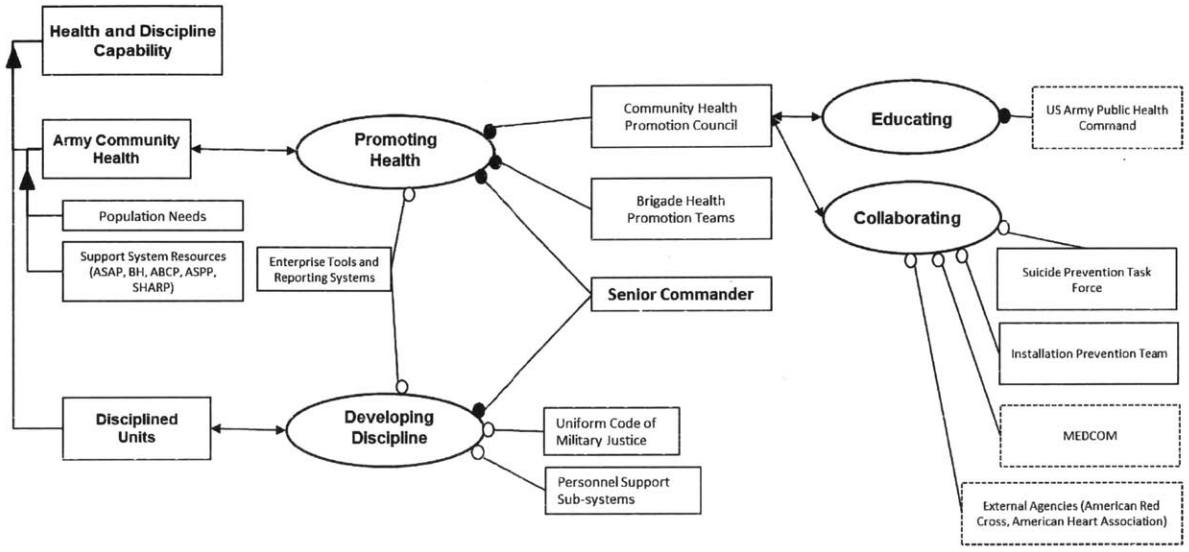

Figure 19 - Top Level Complete OPD

Taken together, the collection of objects, processes, and their linkages graphically represent the concept of a capability in health and discipline. The concept can be represented graphically in Figure 19, or as a text description. The concept for a system that generates health and disciplined units involves promoting health and developing discipline. Promoting health is handled by a CHPC, the Senior Commander, and Brigade Health Promotion Teams. Promoting health is enabled by Enterprise Tools and Reporting Systems and Personnel Support Sub-systems. Developing discipline is handled by the Senior Commander and is enabled by Army Personnel Sub-systems and the UCMJ. The CHPC is educated by US Army Public Health Command, and collaborates with the Suicide Prevention Task Force, Installation Prevention Team, the local Medical Command (MEDCOM), and External Community Resources.

Table 3 - Summary of Elements of System Concept

Type	Name	Definition	References
Object	Health and Discipline Capability	Army leaders capability to reduce stress on the Force, promote health and well being	(Army, 2010b, 2012c)
Object	Army Community Health	Individual health is a term describing the condition of the body generally being free from disease and abnormality. A healthy community is one that creates and improves its social and physical environment, helping people develop to their fullest potential.	(Army, 2009; *Healthy People 2010. Part 7: Educational and community based programs*, 2000)
Object	Disciplined Units	Disciplined units exhibit a state characterized by cohesion,	(Army, 2014b) para 4-1

		teamwork, and mutual respect. Disciplined Soldiers and units display a prompt and willing execution of legal orders and regulations.	
Process	Promoting Health	Army health promotion is defined as any combination of health education and related organizational, political, and economic interventions designed to facilitate behavioral and environmental changes conducive to the health and Well-being of the Army community.	(Army, 2010a) para 1-5
Process	Developing Discipline	Military discipline will be developed by individual and group training to create a mental attitude resulting in proper conduct and prompt obedience to lawful military authority.	(Army, 2014b) para 4-1
Object	Enterprise Tools and Reporting Systems	The current set of tools and forms used to assess, track, and report risk and health information.	Internal Reports.
Object	Army Personnel Support Sub-systems	Army personnel programs with the goal of supporting commanders in creating healthy communities. These include: ASAP, ASPP, ACS, FAP, SHARP, and CSF2.	(Army, 2009, 2011, 2012b, 2014a)
Object	Community Health Promotion Council	A task force that consists of a Health Promotion Team, and working groups that handles health promotion at Army installations.	(Army, 2009, 2010a, 2013)
Object	Brigade Health Promotion Teams	A task force established by brigade and battalion commanders that facilitate health promotion interventions.	(Army, 2010a) para 2-4
Object	Senior Commander	The senior commander is normally the senior general officer at an installation, and is required to establish and preside over the CHPC.	(Army, 2014b) para 2-5, 3-3
Object	Uniform Code of Military Justice (UCMJ)	The foundation for law in the military establishing the regulations that govern members of the armed forces.	("2012 Manual for Courts-Martial United States II-42 (2012)," 2012)

From Concept to Architecture

I have advanced the idea that a capability is an emergent property of a system, and any capability of meaningful scale for an organization will emerge from a large socio-technical system. The Army has made an effort to increase its capability to manage the health and discipline of Soldiers, by outlining a health promotion process implemented by Brigade Health Promotion Teams, and Community Health Promotion Councils with the goal of improving the state of Army community health. Current articles have described the CHPC as essential to the Army's strategy to address public health concerns (Courie, Rivera, & Pompey, 2014), but by focusing on one instrument of the health promotion process the organization may risk optimizing one component at the expense of the system. Courie et al. (2014) also assert that central management of the CHPC by US Army Public Health Command along with a full time health promotion team predicts effective community health promotion councils, which should lead to better community health outcomes. This focus on measuring the instrument and not the processes misses the systemic view of what creates value for the organization. Army leaders may never

gain a full view of the health promotion capabilities of an installation by measuring and evaluating the effectiveness of its CHPC, one instrument in a complex system.

In order to move toward an evaluation of the process of health promotion, the Army needs a rigorous model to describe and the health promotion process. The systems approach in this research furthers the study into the health promotion process using the object-process methodology to more rigorously describe the intended process in Army regulations, and compare this intended system with the systems in practice observed across three Army sites.

The results of this analysis will demonstrate that while there is a common concept across Army installations, the health promotion process and the linkages between objects and processes is not consistent. It is not consistent with the regulation, and it is not consistent across installations. With respect to Army regulations, there are challenges in defining the standard process. This is the result of inconsistent language within the regulation, and the lack of specificity in describing the hierarchy of processes and how they create value. In some areas, the regulation is detailed in specifying supporting process, while in others it provides no clear instruments to accomplish the high level processes. This confusion has led to different interpretations across installations in the execution of the health promotion process. Following the model of the intended health promotion process, I will highlight how major differences in the execution of the sub-process are conducted at each site. These architectural differences across the sites and from the intended policy represent a threat to the Army's ability to improve community health and ultimately a threat in its ability to generate a capability to improve health and discipline in the force.

Intended System Architecture - Processes

Selectively scaling, or zooming into a part of the system, focuses attention on a part of the system without losing its context as part of the whole (D. Dori et al.). This section analyzes the process of health promoting, highlighting where the regulations do not provide a consistent model for the process. The contradictions and lack of clarity leave room for subordinate units to interpret the processes differently across the Army. To some degree this may acceptable, while in other areas it may not be acceptable. To the extent that the Army wishes to manage the process, certain levels of standardization should need to be established. The following Object-Process Diagrams were developed using Army policy and regulations primarily AR 600-63, DA PAM 600-24, and AR 600-20.

Figure 20, below, models the five major sub-processes that are included in health promoting. Deciding on these five major processes was the most challenging aspect of this representation. These five processes are described in AR 600 – 63, paragraph 3-2: "assessment, planning, implementation, evaluation, and communication of health information needs and resources." In decomposing form and function, Army regulations often interweave the actions of the CHPC and the core elements of health promotion. For example paragraph 2-2d lists the "principal CHPC tasks" as to: assess community needs, analyze data resulting from program assessment, keep an inventory of resources, develop implement, and evaluate courses of action, integrate existing health promotion programs, develop a comprehensive marketing plan, and report progress. Although "operationally, health promotion is implemented and enhanced at the community level through a Community Health Promotion Council" (Army, 2010a, p. 2). The primary functions of the CHPC are not consistent with the primary processes listed in the regulation. Other choices for main sub-processes could have been chosen from para 1-5: identify

community needs, setting priorities, developing and implementing programs, evaluating effectiveness of these programs; or from para 1-6: gather data, store data electronically, measure data against Army standards, educate and provide intervention for individuals, and reevaluate the program.

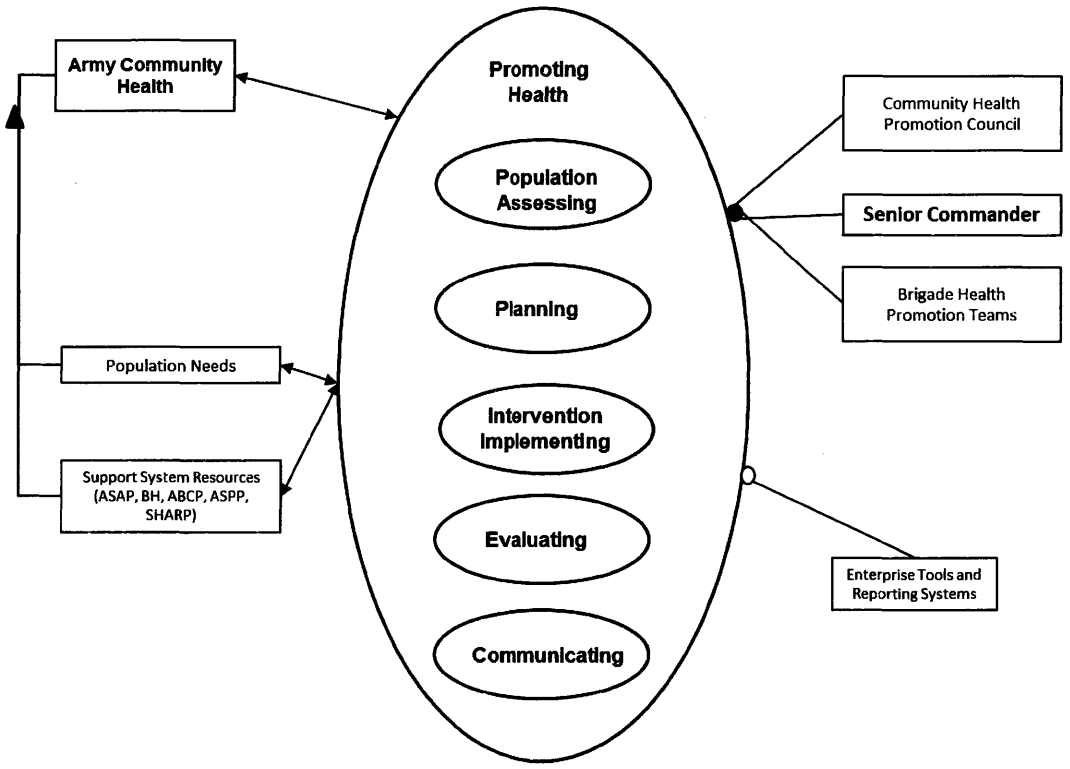

Figure 20 - Health Promoting Processes In zoomed

In addition to the different language in defining what processes are important, the regulations are not clear on where processes fall in a hierarchy. For example gathering data, storing data, and measuring data are probably might best be represented as a lower layer of population assessing. Setting priorities and developing program interventions can be represented as lower level processes in the planning process. Hierarchy and abstraction help decision makers and system designers manage the complexity of a process. The table below summarizes the possible choices for main processes. Ultimately the five processes in chapter 3-2 best describe

the main sub-processes for promoting health. Other processes might be nearly identical with different language, or a sub-process best represented in a zoomed in view of the process. Ultimately the hard choices of selecting and using consistent language in policy and regulation are important for a distributed organization that expects subordinate units to follow mission orders.

Table 4 - Health Promotion Process Confusion

Chosen Sub-process (AR 600-63 para 3-2)	Health Promotion Involves: (AR 600-63 para 1-5)	Scope of Health Promotion (AR 600 – 63 para 1-6)	Principal CHPC tasks (AR 600-63 para 2-2)	Implementation Guidance (AR 600-63 para 2-1)
Population Assessing	Identifying Needs	Gather Data	Assess community needs	Identify resources
Planning	Setting Priorities	Store Data	Analyze data	Eliminate redundancies and voids in programs
Intervention Implementing	Developing Programs	Measure Data	Keep an inventory of resources	Evaluate population needs
Evaluating	Implementing Programs	Educate and promote interventions	Develop, Implement, and evaluate course of action	Assess existing programs
Communicating	Evaluating effectiveness	Reevaluate the program	Integrate existing health promotion programs. Report progress, challenges, and success to Well-Being council	Coordinate targeted interventions. Reporting feedback to higher levels of command

Intended Architecture – Objects and States

After deciding on representation of process, we turn our attention to the objects. Objects and states are the other two main building blocks in OPM. Objects are things that exist. They can be information or physical things. On the other hand, states do not exist as stand-alone things. They are used to described objects (Dov Dori, 2002). This section will focus on building an

understanding of the objects described in the system and describing their possible states. This task is slightly more straight-forward, because the policies and regulations describe more clearly this part of the system.

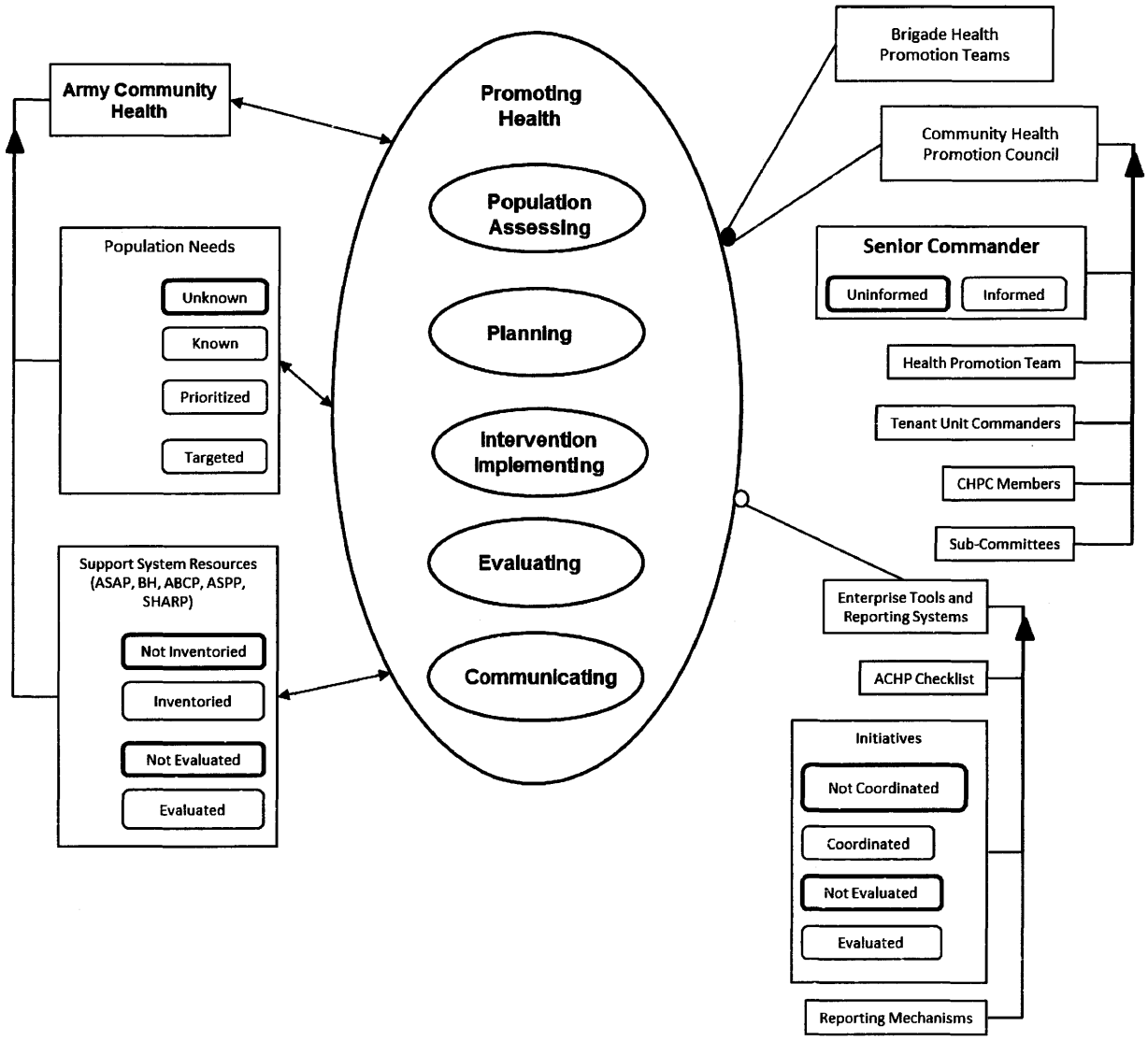

Figure 21 - Promoting Health Objects and States

Figure 21, above, provides the completed view of objects, and their states for the health promoting process. The states of population needs were derived from AR 600-63 para 1-5: "Army health promotion involves identifying community health needs and setting priorities."

While identifying is a process (which we chose to represent as part of assessing) clearly consists of changing the object from unknown to known. Contained in the regulation is an idea that there exists some need in the community, and through a process the organization can learn something about the state of these needs. After the state is known it is prioritized. What the organization learns by modeling this system is precisely locating the state 'prioritized.' Health promoting prioritizes community needs, which is a different idea than prioritizing interventions. Finally the needs are described as being targeted by interventions.

Support system resources are inventoried and evaluated. AR 600-63 para 2-2 directs one of the CHPC principal tasks as "keep an inventory of resources." We might have chosen to represent the inventory as a separate object, but at this level of the system that object is not necessary. If we were to zoom-in to the process of evaluating, we might create an object of 'resource inventory' that is created within that process. Similarly, program evaluations could be modeled as a separate object, but for our purposes it is enough to represent them as a state of a program that exists in the community. What we learn from these states in the model is that the support system resources (other Army personnel programs) should be inventoried and evaluated.

At this level of the system it is important to illustrate what tools in particular are described in the regulations that are used in accomplishing the listed processes. DA PAM 600-24 provides a compliance checklist. This tool is used to measure performance and compliance against the current regulations. 'Initiatives' is the object used to address community health needs. An initiative might include "media awareness campaigns, classes, seminars, workshops, activities and health interventions, policy changes, resource coordination/reorganization, and other initiatives to accomplish required goals"(Army, 2010a, p. 9) There are several choices for the states of initiatives from AR 600-63: coordinated (para 1-6), facilitated (para 1-25),

established (para 4-1), developed (para 4-4). I have chosen coordinated to represent an initiative that is planned, resourced, scheduled, and marketed throughout the community. The other state of evaluated is the result of the evaluating processes described in the regulations.

Finally, in representing the CHPC, AR 600-63 para 2-2 list the members of the CHPC. The Ready and Resilient Execution Order changes the requirement for the chairperson of the CHPC from the garrison commander (typically a Colonel) to the senior commander (typically a Major General). The other objects represented in this view are the members which have been hidden for the sake of managing complexity, the tenant unit commanders who also typically chair the Brigade Health Promotion Teams, and sub-committees. Of note there is little mention of sub-committees in the regulations except to say that the SPTF may be included as a sub-committee of the CHPC.

Intended Architecture – Object-Process Linkages

The last step in describing the system and the intended architecture is the linkages between the sub-processes and the objects in the system. Processes modify objects by creating them, destroying them, or changing their state (Dov Dori, 2002). In OPM, the diagrams are interpreted into meaningful text. The accompanying specific language is understandable by Soldiers in the health promotion domain and may be useful as a complement to make regulations and policies more precise. There are several links used in this diagram. A summary is provided in Figure 22. The linkage that has not been introduced is a one way arrow, which can be used to represent a process changing the state of an object. Figure 22 shows how the process of population assessing changes the state of population needs from unknown to known. The accompanying Object-Process Language (OPL) is "Population Assessing changes Population Needs from Unknown to Known."

The conclusion of describing the system at the first level of analysis of health promotion, intended in Army regulations and policy orders around health and discipline is the figure below. While most of the links that result in an object changing state are straightforward, it is not clear from the regulations what process changes the state of support resources from 'not inventoried' to 'inventoried'. There is clearly a sub-process of inventorying or accounting that should be included in a layer beneath one of these higher processes. I have chosen to represent this in the planning process, although an equal logical choice could have been the evaluating process. Additionally, Brigade Health Promotion Teams (BHPT) are directed to "facilitate health promotion initiatives to reduce high-risk behaviors and build resiliency" (Army, 2009, p. 2). It is not clear that the process of facilitating includes planning and implementation. In fact linking the process of the BHPT with the processes of health promotion is not entirely clear. The policies and regulations allowed for a model at this level. Any further zooming would require more assumptions be made than any independent analyst should be comfortable with.

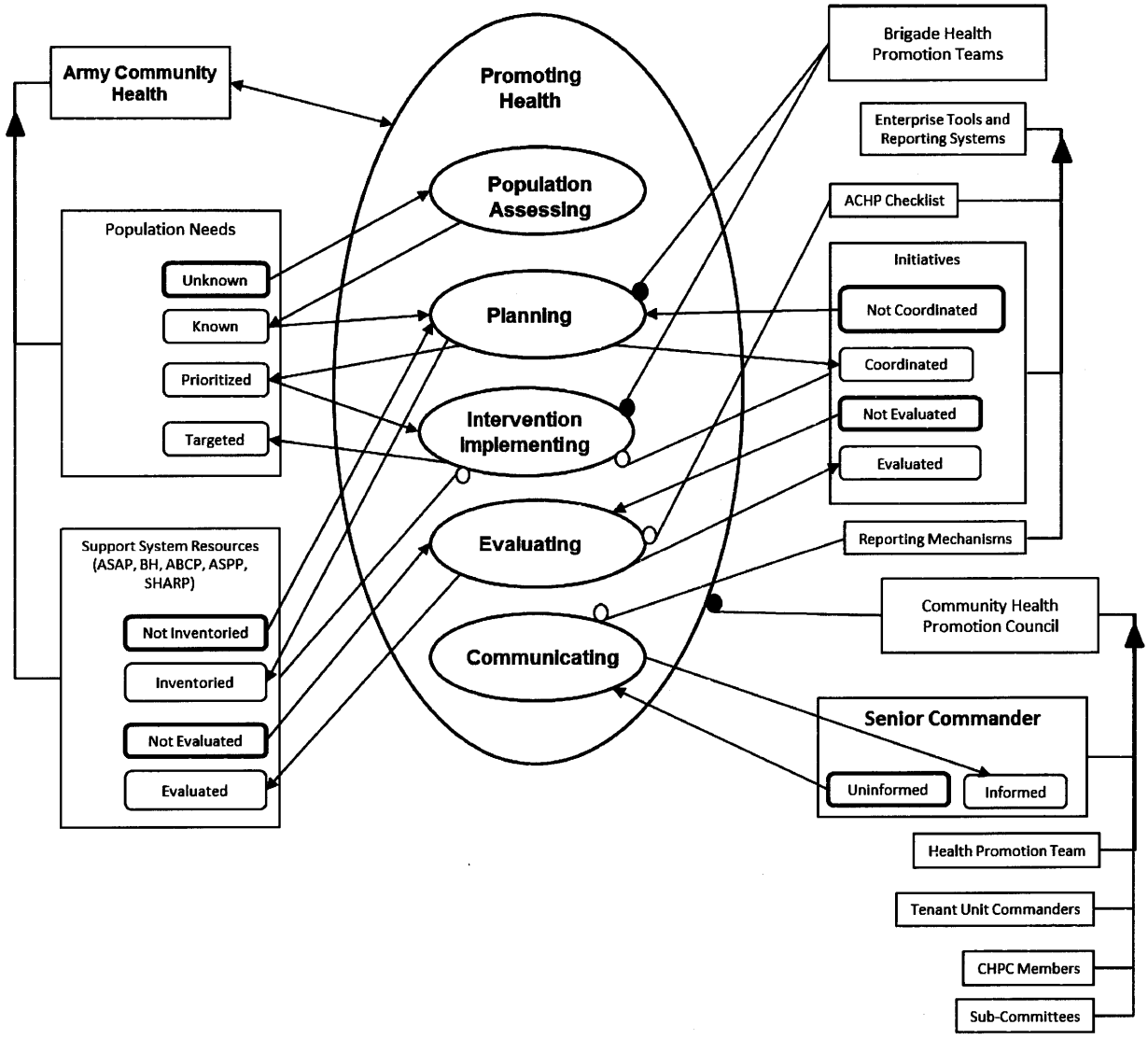

Figure 22 - OPD Promoting Health

These two diagrams, along with their textual language characterize a model of the Army regulations and policy that define Army Health Promotion. After describing the system in a rigorous graphical form there are several things that can be learned about the policy that may influence its impact in the field. First, during the study of this system, modeling behavior, structure, agents, and processes forced assumptions about the unclear language in the regulations, or the linkages from one object to another. In total four major assumptions were

made to represent the system, and nine contradictions had to be resolved. While it is possible to make the assumptions for the purposes of representing the system, these assumptions are being made every day by leaders in the organization. Within the details of the model there are some interesting things we can learn. First, there is no instrument assigned to the process of population assessing. In the case studies, we will see that this has led to organizations attempting many different methods to accomplish this task, often lacking the knowledge to execute this important step effectively.

Results of Site Studies

The following chapters provided analysis of changes in Army human resource policy, and by using a multi-level system modeling method. In studies of three Army installations with operating CHPCs there were several observed differences in organizational practices, but the largest and potentially most dangerous variations were the processes concerned with assessing population needs. The outcome of effective assessing processes is a better understanding of the state of the system, which should allow decision makers to better allocate resources to interventions. Without working processes to assess population needs, the changes that the Army needs are at risk of falling short. In some sense, it is not surprising that the process with the most variation is the process that does not have a specified instrument to handle it; however, this observation would not be clear from reading the regulations, and only becomes clear with a graphical model. Further the variations observed across sites would not be clear from the current organizational practices of Army Public Health Command to evaluate the CHPC. The three figures below summarize the key variations among the sites with respect to the population assessing process. In each case, a different organization is handling the process of assessing

population trends at the highest level of the health promotion process. This results in completely distinct outputs across the installations.

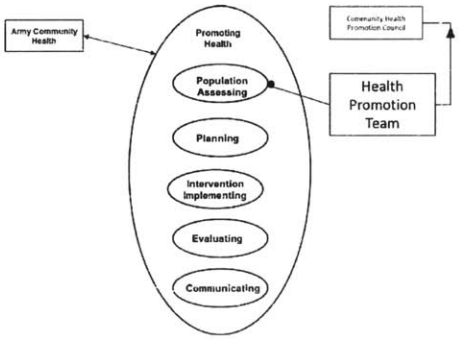

Figure 23- Site A

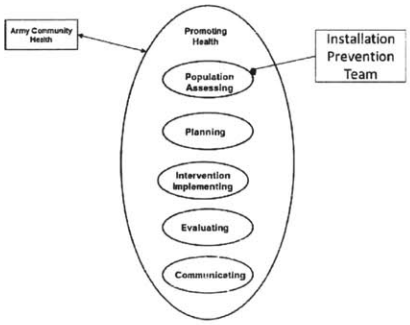

Figure 24 - Site B

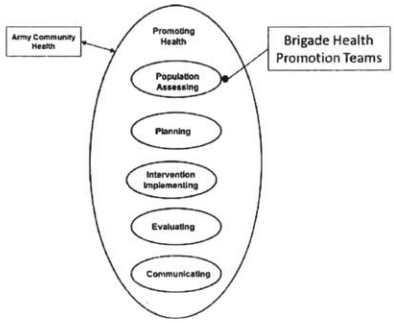

Figure 25 - Site C

The Health Promotion Teams at site A were the most mature in assessing population needs, and evaluating the effectiveness of interventions and programs. This is likely the result of unique knowledge within the health promotion team at this site. The Suicide Prevention Task Force was involved directly in reporting the senior command at this installation, which was a unique practice among the visited sites. While not within the scope of this study, this practice may lead to fragmented information flows of population needs to the senior commander. The interaction between subordinate commanders and the CHPC was not strong at this site. The CHPC did not necessarily schedule interactions between the Brigade Health Promotion Teams (BHPTs) and the senior commander during the CHPC. The lack of this communication potentially weakens the focus on enforcing Army standards and participation in the interventions that the CHPC is attempting to implement.

The system at site B was failing to handle some of its primary sub-processes. Most notably was the lack of any formal instrument to evaluate the effectiveness of initiatives and programs. The health promotion team conceded that this was due to the nascent process and was

struggling to identify a way to measure the effectiveness of the programs, furthering the need for follow-on study of the knowledge requirements for members of the health promotion team. Similarly, the CHPC was not the instrument gathering, storing, or measuring community health data. These functions were accomplished by the Installation Prevention Team. The process of population assessing could was not as mature as that observed in site A. Community health trends were modeled as quarter to quarter changes, without attempting to derive long-term or seasonal trends, and lacking any attempt to explain any underlying structural reasons for the changes.

The system at site C was the most command influenced, and had the most mature integration of the Brigade Health Promotion Teams (BHPTs) with the CHPC. The process of population assessing was handled by the BHPTs. While these assessments only typically captured the last six months of data, members of the team were attempting to understand the underlying structural reasons for increases or decreases in rates of unhealthy behaviors. The structure of the system was focused on enforcing Army standards, facilitating positive interventions, and creating a forum for commanders and program providers to solve community health programs together. This site also lacked a method for evaluating the effectiveness of programs. There were a number of program managers that would attempt to evaluate the effectiveness of their own programs. Aside from the political conflicts of interest that arise from this practice, the evaluations focused on performance metrics (number of hours trained, number of people utilizing the resource) rather than on the effectiveness of the resource.

The table below summarizes the five sub-processes of the system, and the corresponding instrument for handling that process. In the standard model, the Army provides no guidance for how the CHPC should handle each of the sub-processes. The lack of clarity in this guidance is

not for lack of specificity in the CHPC as an instrument. The regulation is clear about the membership to the council, and in practice each site was generally observed to have robust participation and a desire to implement the guidance in the regulation. However, the results of three site visits are that only two of the five sub-processes of the Army health promotion process were handled by the same instrument, providing support for modeling the system at multiple levels if organization wide change is expected.

Table 5- Summary of Sub-processes and their Instruments

Sub-Process	Standard Model	Site A	Site B	Site C
Population Assessing	CHPC	HPT	IPT	BHPTs
Planning (standardized)	*CHPC, BHPTs*	*BHPTs, CHPC sub-committees*	*BHPTs, CHPC sub-committees*	*BHPTs, CHPC sub-committees*
Intervention Implementing (standardized)	*CHPC, BHPTs*	*BHPTs, CHPC sub-committees*	*BHPTs, CHPC sub-committees*	*BHPTs, CHPC sub-committees*
Evaluating	CHPC	HPT		
Communicating	CHPC	SPTF, HPT, CHPC sub-committees	HPT, Unit Commanders, CHPC sub-committees	Unit Commanders, CHPC sub-committees

Limitations and Further Research

This study is descriptive in nature, illustrating how leaders in an organization can perceive standard work at one level of a system and yet observe wildly different practices across the organization. Further research could involve identifying to what level of the system standards

might be addressed to best predict emergent behavior. Specifically regarding the Army health promotion system, further research is needed to move from a descriptive model of different practices to a prescriptive model that best creates the capability to promote healthy and disciplined behavior. This study also was limited in its treatment of the relationship between capabilities across the organization. To fully understand the strategic importance of one specific capability it would be important to more carefully capture the relationships between capabilities.

Conclusions

The study of the Army health and Discipline system demonstrates the need for multi-level system modeling of complex socio-technical systems that produce organization wide capabilities. The study illustrated a gap in the current practices of incorporating new organizations into a current system with the intent of increasing total business capabilities. It furthered the argument for system modeling by highlighting the inconsistencies and unclear language in a number of policies and regulations of the Army health promotion system. It shows how an object-process methodology can be used to explain why organizations that have implemented a standard model for work at one level may see major differences in performance. This could be attributed to the subordinate organizations not have a clear understanding how the standard model for work is intended to function at the lower levels of the system. This approach might complement and improve the current practice of issuing policies and regulations, and lead to increased organization capabilities. Senior leaders in the Army need to establish standards, while allowing subordinate leaders to make flexible decisions. By using more rigorous modeling practices of how the system components interact to create value for the organization, senior leaders can restrict behavior where necessary while not stifling innovation everywhere.

. 2012 Manual for Courts-Martial United States II-42 (2012). (2012) (pp. II-42).

Army, U. (2009). *DA PAM 600-24: Health Promotion, Risk Reduction, and Suicide Prevention.* Washington D.C.

Army Health Promotion (2010a).

Army, U. (2010b). Army Health Promotion, Risk Reduction, and Suicide Prevention.

Army, U. (2011). *AR 608-18: The Army Family Advocacy Program.* Washington D.C.

Army, U. (2012a). *ADP 6-0: Mission Command.* Washington D.C.: Headquarters, Department of the Army.

Army, U. (2012b). *AR 600-85: The Army Substance Abuse Program.* Washington, DC.

Army, U. (2012c). *Army 2020: Generating Health & Discipline in the Force Ahead of the Strategic Reset.* Headquarters, Department of the Army.

Army, U. (2013). *Ready and Resilient Execution Order.* (EXORD 110-13). Washington D.C.

Army, U. (2014a). *AR 350-53: Comprehensive Soldier and Family Fitness.* Washington, DC: Retrieved from http://csf2.army.mil/supportdocs/r350_53.pdf.

Army, U. (2014b). *AR 600-20: Army Command Policy.* Washington D.C.

Checkland, P. (1999). *Systems thinking, systems practice / Peter Checkland*: Chichester ; New York : John Wiley, [1999?]

[New ed.].

Courie, A. F., Rivera, M. S., & Pompey, A. (2014). Managing Public Health in the Army Through a Standard Community Health Promotion Council Model. *U.S. Army Medical Department Journal*, 82-90.

De Weck, O. L., Roos, D., & Magee, C. L. (2011). *Engineering systems : meeting human needs in a complex technological world / Olivier L. de Weck, Daniel Roos, and Christopher L. Magee ; foreword by Charles M. Vest*: Cambridge, Mass. : MIT Press, c2011.

Dori, D. (2002). *Object-Process Methodology [electronic resource] : A Holistic Systems Paradigm / by Dov Dori*: Berlin, Heidelberg : Springer Berlin Heidelberg, 2002.

Dori, D., Hansen, H. R., Bichler, M., & Mahrer, H. (2000/01/01/). *Object-process methodology as a business-process modeling tool.* Paper presented at the Proceedings of the 8th European Conference on Information Systems, Place of Publication: Vienna, Austria; Vienna, Austria. Country of Publication: Austria.

Eisenhardt, K. M., & Martin, J. A. (2000). DYNAMIC CAPABILITIES: WHAT ARE THEY? *Strategic Management Journal, 21*(10/11), 1105.

Felin, T., Foss, N., Heimeriks, K., & Madsen, T. (2012). Microfoundations of Routines and Capabilities: Individuals, Processes, and Structure. *Journal of Management Studies*, 1351-1374.

Forrester, J. W. (1969). *Urban dynamics [by] Jay W. Forrester*: Cambridge, Mass., M.I.T. Press [1969].

Grant, R. M. (1996). Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration, 375.

. *Healthy People 2010. Part 7: Educational and community based programs*. (2000). Washington D.C.: Government Printing Office Retrieved from http://www.healthypeople.gov/2020/data-search/Search-the-Data?topicId=11.

. JP 1-02. (2010). Washington D.C.: Department of Defense.

Leveson, N. (2011). *Engineering a safer world : systems thinking applied to safety / Nancy G. Leveson*: Cambridge, Mass. : MIT Press, c2011.

Maier, M. W., & Rechtin, E. (2009). *The art of systems architecting / Mark W. Maier, Eberhardt Rechtin*: Boca Raton : CRC Press, c2009.

3rd ed.

Osorio, C. A., Dori, D., & Sussman, J. (2011). COIM: An object-process based method for analyzing architectures of complex, interconnected, large-scale socio-technical systems. *Systems Engineering, 14*(4), 364-382. doi: 10.1002/sys.20185

Sterman, J. D. (2001). System dynamics modeling: Tools for learning in a complex world. *California Management Review, 43*(4), 8-25.

Sussman, J. (2000). *Ideas on Complexity - Twenty Views*.

Teece, D. J. (2009). *Dynamic Capabilities and Strategic Management*. New York: Oxford University Press.

Ursano, R. J., Colpe, L. J., Heeringa, S. G., Kessler, R. C., Schoenbaum, M., & Stein, M. B. (2014). The Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Psychiatry, 77*(2), 107-119. doi: 10.1521/psyc.2014.77.2.107

Vogel, R., & Güttel, W. H. (2013). The Dynamic Capability View in Strategic Management: A Bibliometric Review. *International Journal of Management Reviews, 15*(4), 426-446. doi: 10.1111/ijmr.12000

Winter, S. G. (2000). THE SATISFICING PRINCIPLE IN CAPABILITY LEARNING. *Strategic Management Journal, 21*(10/11), 981.

Wood, D. (2013). Military and Veteran Suicides Rise Despite Aggressive Prevention Efforts. http://www.huffingtonpost.com/2013/08/29/military-veteran-suicides-prevention_n_3791325.html

The Dynamic Relationship between Health and Discipline of the Force, Army Support Programs, and Army Leader Capability

Introduction

The Army has been paying more for programs to manage the health and discipline of Soldiers, while rates of indiscipline and unhealthy behaviors have been rising (Londono, 2012; Wood, 2013). Army leadership first sensed the atrophy of leadership in managing health and discipline in 2010. The Army's report on Health Promotion, Risk Reduction, and Suicide Prevention presented information that Army suicides, substance abuse, domestic violence, and sexual offenses were rising year over year. For example, the number of child abuse/neglect cases increased by 177% from 2004 to 2009, while the enrollment in counseling services for these crimes was only reported at 13% (Army, 2010). Suicide trends during the same period have more than doubled, and have surpassed civilian rates for the first time since the Army has been keep collecting data on suicides (Ursano et al., 2014), while the number of programs and amount of money spent on programs continued to rise. Similar trends in substance abuse, domestic violence, and sexual misconduct have also been resistant to increased resource allocation focusing on individual behaviors (Army, 2012b). To complicate the system even further, the easily identifiable sources of policy resistance are not readily apparent in this system. Tactical commanders do not have an incentive for, or a preference to do work that would promote unhealthy and undisciplined behaviors.

The objective of this chapter is to understand the interactions between mission readiness, leader development, human resource programs, and the health and discipline of the force. The challenge in understanding these interactions is that the system is characterized by non-linear

responses, delays, and feedback structures in the system. System dynamics is a method that has been used to understand complex social systems and policy resistance in organizations (Forrester, 1969; Sterman, 2001). Policy resistance arises from our tendency to model the world as a linear series of events. The gap between our desired state and our current state defines our problem. For example, the desired state of the system is to reduce Soldier high risk behaviors. After considering several policy options, leaders decide that more awareness training, along with more support programs to support Soldier and family stress will reduce these behaviors. However, the system adjusts to these decisions. Leaders perceive the training as more things to do, so they check the box, reducing the intended effects of the training. Leaders also no longer deal with the stress of Soldiers and pass them off to support programs, further reducing the amount of time a leader spends with their Soldiers. In order to capture the complete dynamics of the system, a causal loop diagram can help explain and assist in the evaluation of policies designed to improve the health and discipline in the United States Army.

The causal loop diagram and the discussion are a result of the synthesis of Army doctrine and journal articles, and field research. These interviews from the field research were synthesized into the diagram presented, while the research from journal articles was used as a reference for the model. In cooperation with a team from the department of the Army G1-ARD (Army Resilience Directorate), the Massachusetts Institute of Technology (MIT) Sociotechnical Systems Research Center (SSRC), field interviews were conducted at 3 Army installations, with over 100 hours of interviews of both civilian providers and Soldiers in the ranks of first sergeant to two-star general, summarized in the table below.

Table 6- Interviewed Population Data

Number of Individuals Interviewed	Site A	Site B	Site C
Unit Commanders			
Company Command Teams (CPT – 1SG)	10	8	42
Battalion Command Teams (LTC – CSM)	6	3	12
Brigade Command Teams (COL – CSM)	2	2	0
Unit Staff			
Health Promotion Teams (Health Promotion Officer, Health Promotion Program Assistant)	2	2	n/a
Unit Legal Teams (Lawyer, Paralegal)	1	2	1
Unit Surgeon	1	n/a	1
Behavioral Support Providers and Staff			
Army Community Services Coordinator, Army Emergency Relief Coordinator, Military Family Life Consultant, Family Advocacy Program Manager, SHARP Coordinator, ASAP Coordinator, Risk Reduction Coordinator, CSF2 –TC, Suicide Prevention Program Manager, Soldier For Life Coordinator	9	10	8
Unit Ministry Team	5	1	4
Hospital Commander / MEDDAC Commander	1	1	5
Embedded Behavioral Health Team	4	4	5

The three sites selected are Army forces command installations (FORSCOM) of which site C is outside the continental US (OCONUS). FORSCOM sites may experience different challenges in the health and discipline of the force than other commands in the Army; however, the policy decisions largely at FORSCOM units. Respondents for interviews were scheduled to meet with our team, separate from their chain of command. In most cases, the support program

service providers included all or a majority of the staff from that location. As an example, an installation might only have 3 Army Substance Abuse counselors. The team would interview all of them at one time. Where it was impractical to interview an entire class, like company or battalion command teams, they would be selected by a representative at the installation. Typically this identification was coordinated by the installation's health promotion officer, and was assigned as a task for a unit to fulfill. This is common practice in the Army, and has a similar outcome as a random sample, because the assignment to most FORSCOM units at the company level is largely a random process. With the exception of some special units, company commanders do not select the brigade and battalion of their assignment. Although the data was not generated by a random sampling process, the author believes it is representative, and largely lacks a self-selection bias.

The interview sessions were conducted during business hours and were generally scheduled for 1 hour sessions. At each site, we were able to speak with all the representative stakeholders that we requested. These interviews were conducted within the scope of a larger series of 7 site visits to baseline the current state of health and discipline practices across the Army.

Background and Context

The current system of health and discipline in the Army consists of a number of separate programs with no formal coordinating system. These programs include: military justice, medical services, and many programs and services that are offered under the Department of the Army (DA) G-1, or human resources. Programs like the Army Suicide Prevention Program (ASPP) (Army, 2009), the Army Substance Abuse Program (ASAP) (Army, 2012a), Family Advocacy Program (FAP) (Army, 2011), Comprehensive Soldier and Family Fitness (CSF2) (Army,

2014a), the Sexual Harassment Assault Response and Prevention Program (SHARP) (Army, 2014b), are organized to affect specific behaviors. As a result, leaders manage a growing number of training and reporting requirements. In an effort to synchronize the effects and reduce redundancies, the Army implemented The Ready and Resilient Campaign (R2C). The purpose of R2C is to "establish an enduring culture change that integrates resilience into how we build, strengthen, maintain, and assess total fitness, individual performance, and unit readiness" (Army, 2013c, p. 2). In addition to the need to reduce complexity for leaders, the Army is in an environment of shrinking budgets and funding these programs at their historic levels is unsustainable. The current R2C efforts have not been as effective as senior leaders would have thought in changing the current system, as evidenced by: the continued confusion about the campaign and its relationship with the CHPC expressed by company command teams, and the reorganization of the DA-G1, establishing a directorate to manage the campaign (Hames, 2013). Without a model through which to understand and evaluate policy interventions, future changes may be resistant to strategic policy change initiatives.

The Army has been in sustained conflict since 2001. These wars required a new set of capabilities in counterinsurgency and stability and support operations that the Army was not manned, equipped, or trained for prior to the Global War on Terror (Chiarelli, 2005; Hammes, 2012). Senior leaders emphasized that the set of capabilities for conventional warfare were not completely transferable to fighting the insurgency that would grow after the collapse of the government in Iraq. Then-Major General Chiarelli "witnessed in Baghdad that it was no longer adequate as a military force to accept classic military modes of thought" (Chiarelli, 2005, p. 4). The transformation efforts required the Army to perform major changes in the knowledge it created, its training, professional education system, equipmet purchases, and promotion systems.

The development of effective COIN operations did not come without tradeoffs in the Army's ability to conduct conventional war. As early as 2007 Army leaders began to testify to congress that Army units were not training for full spectrum operations (Grant, 2007). Again in 2008 then-chairmen of the Joint Chiefs of Staff commented on the tension between delivering COIN capabilities and continuing to invest and evolve 'atrophying' conventional capabilities (Clark & Kitfield, 2008). The atrophying of the capability to conduct 'major combat operations' continued to be an issue, highlighted in areas that place a higher value on conventional capabilities over COIN capabilities, specifically Korea. In 2011, the Second Infantry Division Commander discussed the challenges of the current Army modular force structure and the emphasis on training as important in the loss of conventional war capability (Tucker & Conroy, 2011). This tradeoff was highlighted by Army Chief of Staff, Gen Odierno, in an address to Congress, "In 2011, the Army began reintroducing training for combined arms in an effort to restore these core warfighting skills which had atrophied after a decade of COIN-focused operations." (*General Raymond T. Odierno*, 2013) The tradeoffs between these two different modes of operation result primarily from the Army's force structure as a multi-purpose generalist organization. Army units are not optimized for one type of mission, and as leaders apply more effort in training, education, and equipment resources toward one end of the spectrum there are tradeoffs at the other end. While these tradeoffs exist, they are carefully managed by senior leaders in the Army and the US congress; and are often the discussion of strategic papers (Folsom, 2013; Gentile, 2009; Hammes, 2012).

The more egregious tradeoffs are the ones that are outside the mental models of the strategists and the planners. Surprisingly, increasing the focus on the most salient mission capabilities of the Army decreased focus on developing and training leaders. Army leaders often

describe the numerous capabilities that are required to conduct operational missions. For example Army leaders have written about the required competencies for Army Soldiers when advising Iraqi Army units(Grunow, 2006), tasks and structure of Brigade Combat Units (Battaglia, 2010), and even the role of specific technology in the current conflict (Oliver, 2011). However, there is little documented discussion about the impact of training for mission capabilities on the leadership tasks of managing health and discipline.

The System to Manage Health and Discipline in the US Army

The system that leaders use to manage the health and discipline of Soldiers in the US Army is a combination of military justice, clinical care, and human resource support programs. The intended output of the system is the punishment and treatment of indiscipline and unhealthy behavior, and the prevention of these behaviors. For example the Army Substance Abuse Program directs administrative punishment for certain alcohol incidents, provides clinical care for the treatment of dependence, and requires training and awareness classes to prevent the misuse of alcohol. One might think about this system at the highest level as a controlling process for personnel readiness, where acts of indiscipline are observed deviations from the desired output.

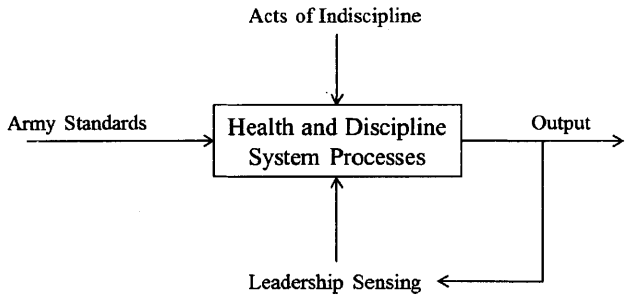

Figure 26 - Army Health and Discipline System

Leaders interact with the system to control and prevent unhealthy behavior and acts of indiscipline. Representing the system, its inputs, and outputs in this way demonstrate that personnel readiness is not only a function of increased 'noise' but could also be the result of decreased capability of leaders to manage the health and discipline systems. Unfortunately, the all too common story in the Army is that resultant increase in indiscipline and decline in health of the force was caused singularly by the increase of stress in the force. However, this mental model ignores the importance of the relationship between the leader and the led. By emphasizing the increased stress on the force as the principal determinant in the system, the Army narrative devalues the actions of unit leadership to intervene and prevent undesirable behaviors.

Leader Knowledge Creation in Health and Discipline

In order to understand why the capabilities to control health and discipline atrophy, we are left to understand how the organization intends to develop leaders with these capabilities. The Army primarily identifies three domains of leader development: institutional, operational, and self-development (Army, 2013a). A historical analysis of articles, categorized by subject in the institutional domain and the operational domain show the decline in focus on health and discipline in Army leader development. In order to gauge the effort in the operational domain, articles from *The Military Review* were categorized by theme from 2000 – 2013. In total this represents a sample size of 1158 articles. For this analysis only academic type articles were considered, the 'Insights' section, along with book reviews, and commander's guidance were not included in quantitative analysis. Together these sections account for five to ten pages of the 100 – 120 pages of each journal. 'Insights' articles are typically 1 or 2 pages, and are more similar to editorials than academic content. However, these sections also provide a shift in tone that is aligned with the results from the quantitative data. For example in the 2000, January – February

issue of the military review 'Insights' includes future technologies in tank development and concepts, Korean War Mobilization, and Idealistic Strategic Planning. By 2008, the subject of this section was Limits of Social Engineering in Afghanistan (Nov – Dec), and Islam and its symbolism (May – June).

The method for this analysis was conducted in three stages: first articles were read and categorized by major theme, and then these themes were organized as supporting counter-insurgency, conventional war, or capabilities in health and discipline. Of the 1158 articles, 672 were not categorized as supporting these capabilities. These articles included various subjects, including: regional studies, transformation, strategy, and battle command theory articles. If these articles were seen as contributing to multiple capabilities, or discussing how the Army should balance between different capabilities they were excluded from the analysis. This decision was made in order to compare the generation of knowledge in the capabilities of interest. A visualization of the resulting themes was generated using a word cloud, with the size of the word corresponding to the number of times it appears in the list of themes.

Figure 27 - Word Cloud Comparison of Themes 2000 - 2013

In the conventional war capabilities category, the article themes included: firepower, military history, and a focus on technology: artillery systems, air defense, air mechanization, and

the transformation of units. In the Counterinsurgency category the major themes were advisor missions, asymmetric warfare, lessons learned in current operations, and intelligence. It is also worth mentioning that of the 236 total articles, 96 were about counterinsurgency directly. This is likely a signal of a novel capability to the organization requiring some effort in fully describing it. There was not a similar phenomenon among the conventional war articles, although there have been a number of terms from: major combat operations to full spectrum operations to describe this capability. Similarly, there are many themes that are used to describe healthy and disciplined behavior. For this analysis these include leader development that is not mission related, health topics, community health and family readiness, and the Army ethic.

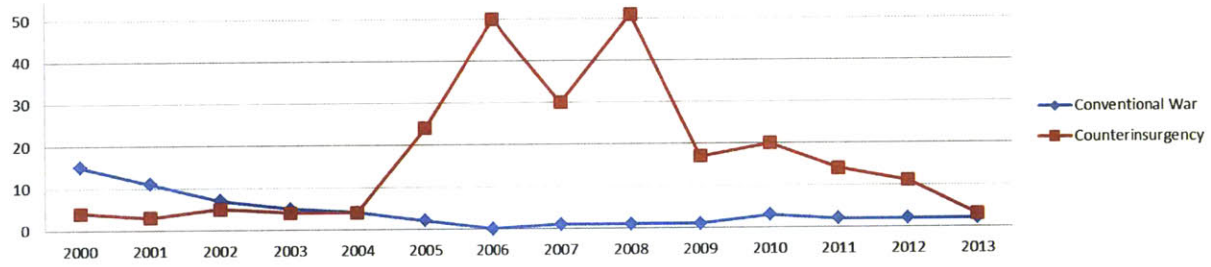

Figure 28 - Military Review Articles by Year (COIN - Conventional War)

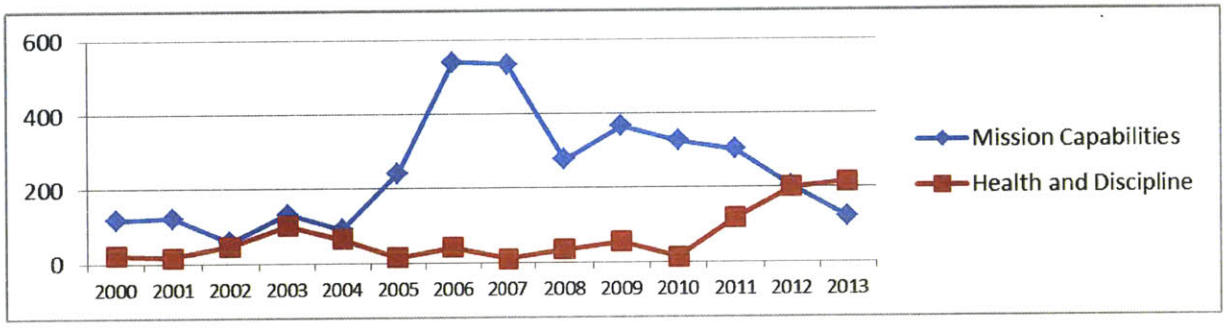

Figure 29 - Military Review Articles by Year (Mission Capability - Health and Discipline)

The trend in the operational knowledge created by leaders in the Army shifted sharply in 2004, with the experiences of the wars in Iraq and Afghanistan. Figure 28 shows that leaders

began to emphasize counterinsurgency knowledge over conventional war knowledge, resulting in the capability loss described by Generals Tucker in 2011and Odierno in 2013. This was the managed tradeoff in mission capabilities that senior leaders and congress were attempting to balance as the organization attempted to generate a new capability. Figure 29 shows the more hidden tradeoff between knowledge created in mission capability and health and discipline capability. During the period of 2005 – 2010, articles on health and discipline and leader development were reduced to allow for more articles in counterinsurgency mission capabilities. In some sense, this is not surprising and shows that the Army's primary journal is well aligned to the needs of the organization.

To sample the knowledge and effort created in the institutional domain, the author applied the same methods to Masters of Military Arts and Science (MMAS) thesis topics. The set of thesis are typically produced by Army officers on or around their tenth year of service. These mid-career officers attend a professional military course, in which they have the option to write a thesis. It is important to note that this course was only available to a select number of officers prior to 2003, which accounts for the large increase in total thesis written. It is also of interest that these officers have some freedom in their topic, which is important for the purposes of this analysis.

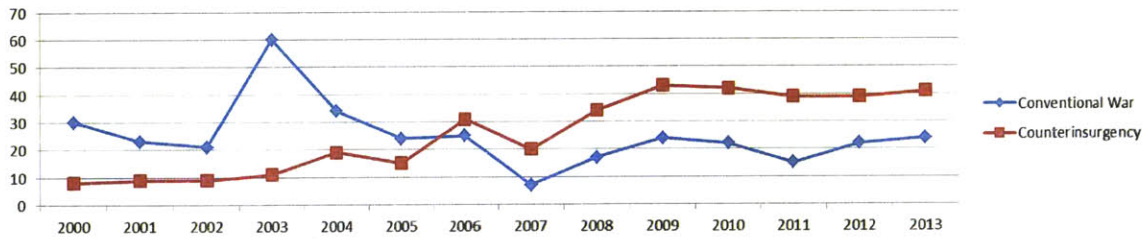

Figure 30 - MMAS Thesis by Topic by Year

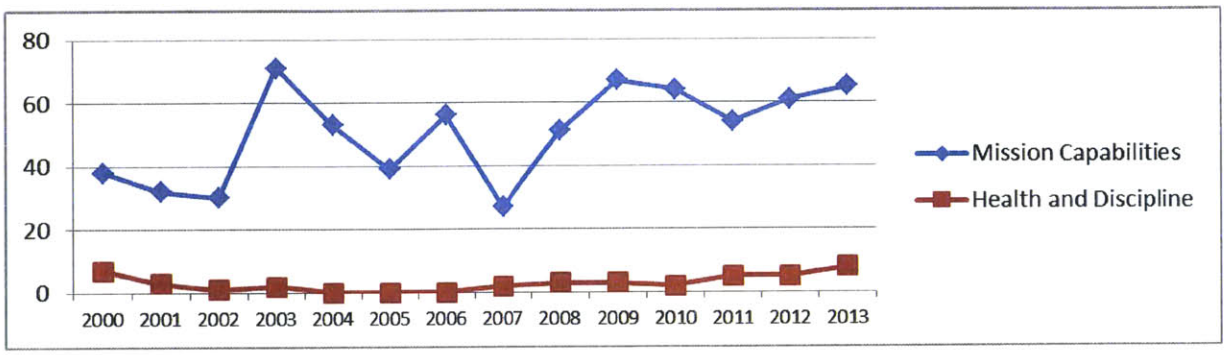

Figure 31 - MMAS Thesis Topic by Year

The data from the analysis of MMAS thesis show a similar trend as *The Military Review*, although the shift from conventional war to counterinsurgency was delayed by two years. This can be explained by the time delay in younger officers gaining counterinsurgencies experiences and waiting in a queue to attend professional education. Where articles in *The Military Review* can be published by officers serving in current theaters of operation, MMAS thesis are only written once officers have completed training and return to garrison schools. Again, the same trend is observed in the decline in the number of articles written on health and discipline. From 2004 – 2006, not a single thesis was written on topics about the health and discipline of Soldiers. This represents not only a loss in knowledge created during those years, but also an attitude about what is important to the organization, and these officers continue to be promoted to higher ranks as time passes. An officer with 10 years in service in 2004 will only become retirement eligible in 2014, so one can see how these attitudes about which capabilities are more valued can persist.

While these trends show alignment, there is a disturbing trend in the more recent data that suggests the regeneration in health and discipline capability will be more difficult than the growth of counterinsurgency capability. In 2011, the number of articles authored on health and discipline rises sharply, while the number of articles on mission capability decline. *The Military*

Review was dominated by themes on the Army profession and a return to the skills of a garrison force. If the same delay of two years in MMAS thesis is observed, then there should be an observed increase in MMAS thesis on health and discipline, but there seems to be little increase. In fact in 2013 the percentage of MMAS thesis on the topic of health and discipline was half that in 2000. In 2000, 7 of 68, 11% of all thesis were health and discipline related, whereas in 2013 8 of 128, 6%, were related to health and discipline. This is remarkable because senior officers have signaled the importance of health and discipline, including a major emphasis on the Army ethic, and the need for mid-career officers to internalize health and discipline capability is greater in 2013 than it was in 2000.

Together these graphs demonstrate a noticeable shift in the types of knowledge being created by the organization, demonstrating that there is alignment of a considerable majority of the members of the organization with the stated goals of its senior leaders. There are several reasons why these data should not be considered a random sample. *The Military* Review is "the U.S. Army's cutting edge forum for original thought and debate on the art and science of land warfare."(Center, 2015) The editor of the publication is likely to select only those articles that are relevant to the current environment, and the priorities of the leadership. Second, authors offering articles are typically senior officers in the Army, and want to be seen as producing valuable work, which means working on topical issues. While these issues of selection might be case against the validity of this data in the decline in health and discipline knowledge, the MMAS thesis would be less biased for the same reasons. Officers are given freedom to write on a variety of topics. These authors are typically the upper third of the year group of military officers and so their shift in perception about important knowledge work may indicate a broader change in the organizational knowledge base, and organizational culture.

Causal Loop Diagram

I posit the causal loop below in Figure 32 represents the major effects on the system. The primary loops are drawn as R1 – Capable Leaders, and B1 – Increased Programs. The Capable Leaders loop represents the structure that causes the behavior observed in article trends. The Increased Programs loop represents the rational response of senior leaders attempting to maintain a nominal level of health and discipline in the organization. The other loops represented are the collective aggregation of field interviews. The net effects of the unintended consequences of policy decisions have been an increasing number of programs, decreased effectiveness, and less engaged leaders.

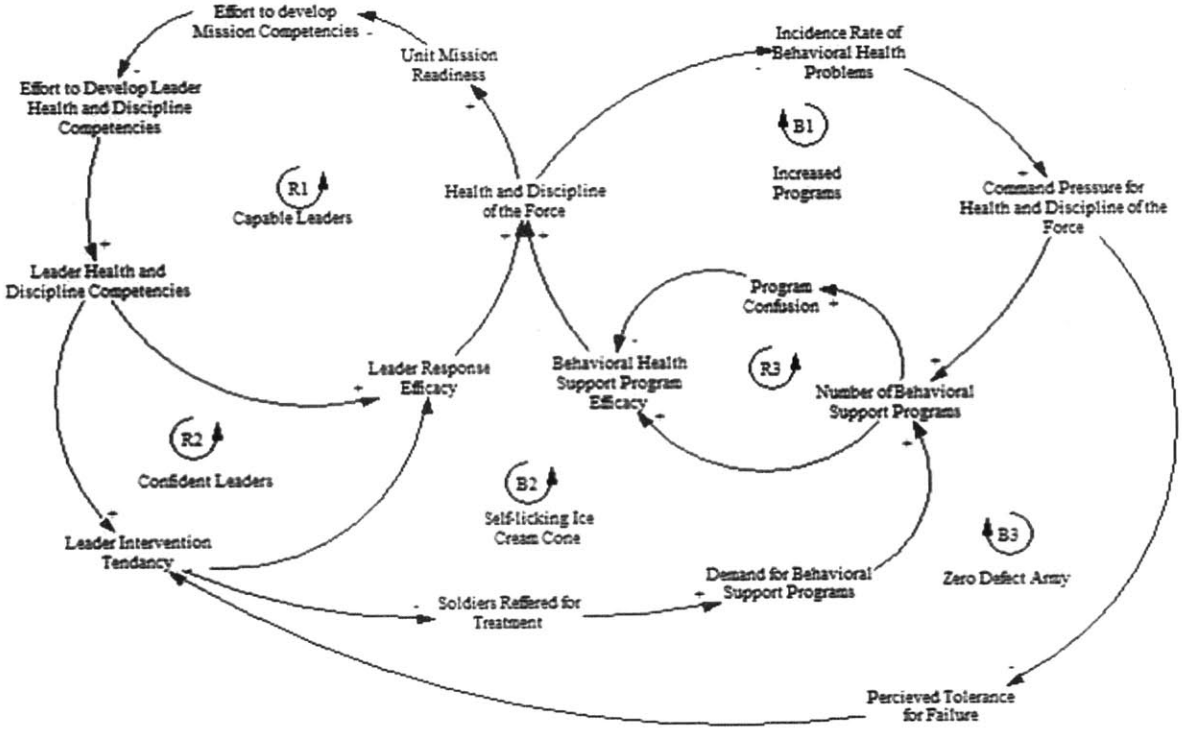

Figure 32 - Health and Discipline CLD

Model Variable Definitions

It is my intent that the variable names in the model are as self-describing as possible, but in order to ensure clarity I have provided an expanded definition of the variables in this section. In some cases these variables, are concepts from literature and in other the concepts are summaries of beliefs described to us in field interviews.

Health and Discipline of the Force. Strategic reports define the concept that the health and discipline of the force, and the 'wear and tear' on Soldiers and their families. The stress was assumed to be the result of high operational demands (OPTEMPO) Army (2012b); however, in multiple interviews in almost every location in the Army leaders were aware that while their deployment tempo had slowed down, they felt as though their OPTEMPO had actually increased.

Mission Capabilities. This variable represents the Army's ability to complete tactical mission tasks. Here I borrow from Winter (2000) and can ask the question: Can Army units conduct close air support? If the answer is yes, then the Army has the capability. Of course, there are likely not going to be many binary answers to questions at the scale of the Army. However, in the case of counterinsurgency, we see that prior to Iraq war senior leaders described that the Army could not fight a counterinsurgency war. This drove several change projects across, and during the war the organization was described as having a much greater counterinsurgency capability.

Effort Dedicated to Develop Mission Capabilities. This is the collective resources spent on increasing the capacity of mission capabilities in the Army. This can be seen through the DOTMLPF-P framework of Department of Defense capabilities (Army, 2013b). It includes

the expense in dollars for new technologies, trucks, and Soldier equipment. More important to this model is the expense in training time. Since training time is a fixed time, adding training requirements means that some requirements may need to be removed.

Effort Dedicated to Develop Leaders Capability in Managing Health and Discipline. This is the collective resources the organization spends on increasing the capacity of its human leaders to develop the capability to manage health and discipline in the Army. Along with the items described above, the effort of leaders to create knew knowledge through the reflection and application of techniques is an important aspect of the effort to develop a capability.

Leader Capability in Managing Health and Discipline. The capability to manage health and discipline is the ability to affect and change Soldier behavior. These behaviors are often sensed with discipline systems, but could indicate underlying behavioral health issues. Driving under the influence is clearly an undisciplined behavior, but could also indicate an underlying alcohol addiction or other behavioral health issues. However, the indications of a behavioral health concerns often lag behind the detection of the discipline incident.

Another behavior at the intersection of health and discipline is the Army Body Composition Program. Soldiers that are not within the tolerances of the Army body composition are not demonstrating disciplined choices, while simultaneously are endangering their health. Current research in Army Weight Control Routines shows that leader focus and capability are related to program usage.

Leader Intervention Tendency. When presented with an issue, leaders make a choice to intervene or not. Many senior leaders believe that junior leaders are less likely to intervene when faced with a situation that requires attention. While there may not be evidence to support the

beliefs that fewer junior leaders are intervening in situations, the Army is currently involved in campaigns to address by-standing. The reasons for why the attitudes of juniors leaders have changed were given to us along three major themes: millennial attitude shifts, confidence in their abilities, and policies that had the unintended consequences of discouraging intervention.

Leader Response Efficacy. This variable represents the effectiveness of leaders, and causes a change in the Health and Discipline of the Force. This is the idea that for leader's responses to be effective, they have to be conducted by capable leaders and those leaders need to intervene when they are needed. This is important in the current context of the system, because the Army has focused increasingly on making leaders more effective, teaching them about programs to help Soldiers and families. Also the Army is providing leaders with skills on how to best intervene with the Soldiers who may be inclined to commit suicide, or situations involving sexual assault. However, the Army has yet to take a hard look at the policies that may be providing distractions for leaders not to engage. For example, some policies on hazing, barracks privacy, and sexual harassment may be structured in a way that encourages leaders to look the other way when faced with a difficult or uncomfortable situation.

Incidence Rate of Behavioral Health and Discipline Problems. This variable is a combination of the incidence rates of behavioral health and discipline incidents. This is intended to represent, but is not limited to, suicide, sexual assault and harassment, overweight Soldiers, substance abuse issues, and other co-morbidities associated with post-traumatic stress injuries. This variable clearly hides some of the specific causal factors for each type of incident, but is sufficient in this causal loop diagram. If further research was interested in understanding individual behaviors, this variable would need to be separated.

Command Pressure on Health and Discipline. This is the idea that senior leaders in the Army respond to rising rates of indiscipline with increased pressure and attention on lower commands. At the strategic level can result in the transformation of staffs, a reassignment of responsibilities from one staff to another, the initiation of 'fact-finding' reports, or the creation of new programs. In the current context, the Army G1 has been reorganized to include the Army Resilience Directorate (ARD) and the primary responsibility for 'Resilience' programs have been shifted. The Army Red and Gold Book are examples of command pressure to better understand the issue.

Number of Support Programs. This variable represents the resource commitment to support programs. This model does not intend to show the difference between clinical and non-clinical support programs. Not only has the number of programs increased in the recent context of this study, but the amount of attention and budgets for these programs have increased as well. Programs like the Community Health Promotion Council (CHPC) and CSF2 are instances of new programs. Embedded behavioral health is an instance of increased resources and the reorganization of a current program.

Support Program Efficacy. This variable represents the effectiveness of service providers in these programs to deliver effective behavioral change. Since this is a systems perspective on behavioral health, the actual treatments that are employed by service providers are not considered in this analysis. We can then assume that the effectiveness of providers is moderated by the number of Soldiers that they are actually able to see, either through command or self-referrals.

The Primary Reinforcing Loops

The primary reinforcing loop, R1 – capable leaders, illustrates the relationship between the health and discipline of the force, mission capabilities, and the capabilities of leaders to manage health and discipline. Increases in the health and discipline of the force also increases mission capabilities, which in turn decreases the effort to creating new mission capabilities. In the previous chapters I have shown that there is an inverse relationship between developing mission capabilities and developing leader capabilities to manage health and discipline. With reduced capability, the efficacy of leader's responses to sub-traumatic Soldier stress is reduced. This reduction in leader's efficacy to manage stress leads to a decrease in the health and discipline of the force.

In the previous chapters, I have provided the evidence that supports for I believe were the most contentious variable connections in this main reinforcing loop. Specifically that an increase in mission capabilities causes a decrease in the development of leader capabilities in health and discipline. In fact in most interviews, the decay in leader capabilities was often attributed to a lack of practice in a garrison environment. When describing the emphasis on basic garrison leadership, one battalion commander remarked, "How do you get back to basics, when you don't know the basics." The contributions of this research are that the practice in set of capabilities leads to knowledge creation, which might be measured directly in journal articles.

The second reinforcing loop was not discovered through article discovery, but in field interviews with senior non-commissioned officers. Junior non-commissioned officers were not engaging Soldiers when they saw small infractions in Army standards. A consistent narrative heard in the field was a culture of bystanders. Several company commanders and First Sergeants noted that they were afraid to be labeled as 'toxic leaders' for making on the spot corrections.

One Command Sergeant Major made the point about the standards surrounding the use of sexually explicit profanity, but lamented that he never sees junior NCOs making corrections. Senior NCOs posit that this type of behavior leads to further disengagement from Soldiers, ultimately creating a culture of bystanders. Junior NCOs in the grades of E5 and E6 were consistently described as the most important trainers of Soldiers. Both senior officers and senior non-commissioned officers in every location we visited would say "the best training is a squad leader talking to their Soldiers every day." The squad leader should feel the most inclined to intervene in a Soldiers' affairs, whether those affairs are financial stress, family stress, or inappropriate civilian clothing. The sense from senior non-commissioned officers that squad leaders are not intervening is a growing concern for the effectiveness of leader response to sub-traumatic stress.

The Primary Balancing Loops

The primary balancing loop, B1 Increasing Programs, is a loop that explains the relationship between the health and discipline of the force, the incidence rates of behavioral and discipline problems, ultimately leading to increased programs to support Soldiers. To illustrate how this loop operates, we can imagine the health and discipline of the force declining as a result of increased stress of constant deployments over 10 years of war. If the health and discipline of the force declines, the number of incidence of acts of indiscipline and incidence of behavioral health concerns will rise. The rise in events (suicides, sexual assaults, DUIs) causes increased command pressure for action. At the most senior levels of command this pressure triggers new programs, like CSF2, a more robust sexual assault prevention and response program, new emphasis on leader involvement in Soldier counseling, and a more robust embedded behavioral health teams. All else being equal, these new programs lead to more effectiveness at responding

to Soldier stress which increases the health and discipline of the force. In essence this loop is the primary way in which senior leaders seek to maintain some nominal target for the health and discipline.

In field interviews we also discovered other effects of this main loop. While it is intended for the increased programs to be more effective at managing Soldier stress, once the number of programs reaches a certain level there is program confusion. This leads to decreased effectiveness of the programs. This is depicted as, R3 Program Confusion. In large, the effects of this loop were minimal at the time of this research in the clinical care of Soldiers, by implementing a standard system of embedded behavioral health care. However, the sub-threshold stress programs that the ready and resilient campaign manages suffer from overlap and complexity, reducing the effectiveness of any one program. Company commanders and first sergeants would openly admit that nearly all the training was "check the box training." When pressed further to describe their behavior, on first sergeant said of resilience training, "if I have 30 minutes, then that's what it (the trainer) gets," even though the recognized standard for most of these modules is several hours. This type of reaction by the actors in the system illustrate why the answer to this problem cannot simply be to add more training requirements without monitoring the overlap, and the effectiveness of the training.

In conversations with senior leaders in the Army Resilience Directorate (ARD) there was a feeling that the number and size of the programs had grown inappropriately to their effectiveness. In field interviews we discovered what may be other causes for program growth, primarily on the demand side. Most program offices in the field tracked some type of demand data, whether that included number of appointments or people who attended classes. This data

was then used to justify the need for additional resources, irrespective of the effectiveness of the service preformed. This loop is illustrated as B2, Self-Licking Ice Cream Cone.

The final balancing loop, B3 Zero Defect Army, is illustrated as a result of a consistent behavior described by first sergeants and company commanders. Increased command pressure in response to incident rates rising, decreases the tolerance for failure. One might expect that this would increase their desire to intervene in their Soldiers' issues because they do not want to fail, but quite the opposite happens. Often there is an idea of 'identify and pass' is the correct response for junior non-commissioned officers. The idea is that once they identify a problem, their responsibility ends once they have passed the Soldier off to the proper agency. To illustrate this idea, imagine a Soldier with some financial debts who is now experiencing stress. This Soldier's financial issues might be discovered by a bounced check at the Post Exchange or by requesting a loan from Army Emergency Relief (AER) to go on leave if a family member is ill or has died. Instead of going through the Soldier's pay, debts, advising him on what things are not necessary to purchase and taking responsibility for providing guidance to the Soldier, young NCOs are more likely to send their Soldier to an AER office or the post financial counselor. The Soldier might receive some class, or a loan, but the underlying issues are likely not to be resolved by a one-time class, and the relationship between the Soldier and the NCO is not strengthened by passing the Soldier off to a program that otherwise they have no relationship with.

Analysis of Sites through the CLD

In the previous chapters, I have introduced three cases at different Army installations. Given the proposed causal loop diagram for the underlying structure of Health and Discipline of the force, Army leaders might better be able to understand how their actions contribute to the

change in the system as a whole. Although leaders might not be able to immediately determine which actions will be best for the system over its lifetime, the CLD provides a standard framework for proposing and evaluating interventions. This framework also may show that certain interventions are not being done that would be especially helpful to improve the system. In each of the sites, senior commanders and their staff had placed more emphasis on certain loops in the CLD. These results are presented in the table below, and described in this section.

Table 7 - Site Comparisons of Loops Emphasized

Loop Emphasized	**B1 – Increased Programs**	**R3 – Program Confusion**	**R1 – Capable Leaders**
Site A	X		
Site B		X	
Site C			X

Site A was especially focused on the inventorying and effectiveness of support programs. The Health Promotion Team (HPT) at this site had the most sophisticated and mature process for collecting, understanding, and learning from data related to the effectiveness of programs. These processes are primarily targeted at increasing the power of the primary balancing loop, B1. By better allocating resources to the most effective behavioral support programs, the installation can increase the Health and Discipline of the Force. With the smart application of statistical learning, the installation can accomplish more with their fixed budget of program dollars. Another important process highlighted by the HPT at this site was the need to maintain an inventory of the programs, so they could help to eliminate redundancies and reduce confusion. This also helps

to strengthen the primary balancing loop, by reducing the influence of the vicious cycle around the program confusion loop, R3.

The Health Promotion process at Site B focused on the same loops, but through different means. One of the main focuses of the Community Health Promotion Council was to de-conflict the timing of the interventions created at the working groups with each other, and with the operational calendar. This reduces the effect of the program confusion loop, R3. As a by-product this also strengthens the balancing loop around B1. However rather than trying to learn for statistical data about programs were effective, the working groups at this installation focused on ways to create increased low-cost interventions. Interventions like 'Walk your kid to school' targets both physical health, and family health at little to no cost to the installation. This is an increase in the number of programs offered, if all other things are held equal should increase the health and discipline of the force.

While the efforts at sites A and B focused on the balancing loops, the efforts at site C were focused on the primary reinforcing loop, R1. Major initiatives at site C included leader efforts to increase college enrollment, volunteering, and participation in garrison sports activities. This site is different in that there was a systemic effort to encourage the improvement of leader capabilities, through college enrollment and community involvement. The CHPC observed at this location was also unique in the way the senior commander used the CHPC to communicate priorities about areas of mandatory training in which he was willing to accept risk. This was an attempt to give leaders time to focus on mission training and the mandatory training that was seen as most valuable. This type of activity is important in reducing the zero-defect army balancing loop, which undermines Army leader's willingness to intervene in Soldier's problems. If leaders perceive the tolerance for failure is low, they are more likely to 'identify and pass'

problem Soldiers to the proper agency for help. This type of behavior over time creates leaders who lose the ability to work through messy and complicated Soldier problems.

Army senior leaders have a strong intuition and provide command pressure for engaged leadership, but in practice only one site that we observed had found a way to operationalize the idea into a set of practices. The intuition that engaged leadership will have a greater impact on Soldier health and discipline than the implementation of more programs can be validated by this causal loop diagram. In essence more spending on support programs can have unintended consequences of less leader involvement, leading to more spending on programs at lower and lower returns in health and discipline. On the other hand, engaging leaders in the health and discipline of their Soldiers can have a positive reinforcing effect on health and discipline with less spending. The analysis of the three site CHPC routines and their emphasis on different variables represented in the CLD highlights some of the risks that the CHPC faces. First, Army leaders should have an understanding of how the CHPC intends to improve Army health and discipline, or is the CHPC merely a routine to eliminate wasteful duplicated programs. If the latter is the intent, then Army leaders should have no reason to believe that health and discipline will increase. A routine designed to save cost might make the system more effective in its dollar per dollar output, but is unlikely to increase the output that Army leaders care about. If the CHPC is intended to increase health and discipline, then the focus on increasing the power of the balancing loops might explain why the CHPC will not demonstrate the outcomes that Army leaders desire.

Conclusions

The Army is changing. Wars are ending, budgets are shrinking, and the system that was half-designed and half-evolved to manage the health and discipline of Soldiers no longer serves

commanders and Soldiers as intended. Causal Loop Diagrams and the methods from System Dynamics are useful in trying to illustrate how the main intended effects of policy decisions might cause other unintended consequences.

Further, junior leaders are busier than ever. The set of mission capabilities has expanded to include a new kind of enemy, while the real fear of old enemies loom large. Army leaders need to prepare to fight counterinsurgent fights, conduct counter-terrorism, support unstable governments, while not losing the ability to conduct high intensity, full scale wars against nation states. Property books have expanded. Commanders and Soldiers are inventorying more equipment, most of which does not have standard Army documentation. More soldiers are living with the effects of war and the stress of the longest period of constant deployments its history; and the most junior commanders are asked to make judgment calls on what constitutes rehabilitation or separation. Transformation efforts are needed, and a better dynamic mental model of the system can help to illustrate the potential effects of policy interventions before they are implemented across the enterprise.

Given the structure of the system, any long term improvement is likely to be preceded by either a short term increase in negative events or a decline in mission readiness. Why? Shifting from a system that focuses on creating programs to a system that forces junior leaders to intervene first and direct to programs later means that until such a time when leaders learn when they have the capacity to intervene there may be times when the case should be referred to a program specialist. This reduces mission readiness in the short term, but builds the confidence in junior leaders to engage with their subordinates. On the other hand, if leaders feel that the risks of intervention are too high, then they may continue to refer Soldiers to programs as before. If this becomes the case, then there will be fewer opportunities for leaders to learn how to deal with

these issues. Even worse, the relationship between leaders and Soldiers may become even more contractual as leaders continue to focus only training the mission capabilities in their Soldiers.

The Army trains mission essential tasks best when its lowest level leaders are involved with their Soldiers. Training resilience skills and other health and discipline skills would likely be the most effective when conducted in the same way; however, this requires taking leaders time to learn these skills and then allowing them time to train their Soldiers. But this requires some recognition that there is a struggle already to learn the required METL skills. This would require senior leaders to take some strategic risks in the set of mission capabilities and health and discipline capabilities a unit requires. Instead the current paradigm is one in which the Department of the Army dictates a total set of capabilities required, without prioritization, forcing junior leaders to assume risk in what capabilities they feel are most important. Instead a future state in which the Department of the Army allowed Brigade Commanders to make decisions about which health and discipline capabilities are trained could help better align the system, and may improve junior leader commitment to the system.

There are further reasons why the Army needs to consider restructuring the set of programs it currently uses to generate health and discipline, beyond the shrinking budgets. Increasing programs is the result of trying to balance a system that has an inherent deficiency. In some sense, the increased programs take requirements off leader's plates and allow them to focus on mission capabilities, but this hides the requirement for leaders to be involved with the Soldiers. Although the intent of increased programs was to make leaders more effective, over time programs allowed leaders forgo practicing essential routines, further degrading the capability the programs were intended to increase. At two sites the CHPC is focused on further strengthening the balancing loops in the system, while at site C the CHPC was focused on

increasing the leader engagement. The author of this thesis would hypothesize that a CHPC that focuses on leader engagement in health and discipline problems would be more effective over the long term than a CHPC that focuses on the efficiency of Army behavioral support programs.

Although I hypothesize that the Army would realize increases in health and discipline if the CHPC was focused on leader engagement, it is unclear whether or not system change can occur independently at installations. Army personnel learn behavioral change over several years, and in these years they are moving and changing installations. At some installations, as many as one third of personnel are changing every year. The power of the change in the cultural attitudes about counterinsurgency would likely have been unsuccessful if only implemented in one installation. This risk is highlighted in the architectural differences observed at each installation, and highlighted again through the lens of a causal loop diagram. Without resolving the architectural instability and the causal mechanisms, the CHPC remains at risk of not affecting a cultural change in Army leaders about the Army health promotion.

My hope is that the system dynamics model provides a more informed understanding of the dynamic relationship between Army behavior support programs and the management of health and discipline of the force. There is not a simple solution to this problem. Leaders cannot simply add more programs that they cannot afford. Even if they could afford them, additional programs are not increasing the health and discipline of the force because of the unintended reactions with junior leader behavior. The CHPC cannot simply attempt to synchronize program effects, making the system more effective by reducing costs. This has the same effect through a different pathway of spending more on additional programs. The real change in the system will occur when junior leaders are engaged in the health and discipline of their Soldiers. The challenge is architecting a system for this purpose and implementing these routines across a

critical mass of installations, thereby leading to an increased capability to manage the health and discipline of Soldiers in the US Army.

Army, U. (2009). *DA PAM 600-24: Health Promotion, Risk Reduction, and Suicide Prevention.* Washington D.C.

Army, U. (2010). Army Health Promotion, Risk Reduction, and Suicide Prevention.

Army, U. (2011). *AR 608-18: The Army Family Advocacy Program.* Washington D.C.

Army, U. (2012a). *AR 600-85: The Army Substance Abuse Program.* Washington, DC.

Army, U. (2012b). *Army 2020: Generating Health & Discipline in the Force Ahead of the Strategic Reset.* Headquarters, Department of the Army.

Army, U. (2013a). *DA PAM 350-58: Army Leader Development Program.* Washington, DC.

Army, U. (2013b). Force Development: Concept Development, Capabilities Determination, and Capabilities Integration. Fort Eustis, Virginia 23604: Department of the Army, Training and Doctrine Command.

Army, U. (2013c). *Ready and Resilient Execution Order.* (EXORD 110-13). Washington D.C.

Army, U. (2014a). *AR 350-53: Comprehensive Soldier and Family Fitness.* Washington, DC: Retrieved from http://csf2.army.mil/supportdocs/r350_53.pdf.

Army, U. (2014b). *AR 600-20: Army Command Policy.* Washington D.C.

Battaglia, P. T., Curtis. (2010). Security Force Assistance Operations. *Military Review*(July - August), 2-9.

Center, U. A. C. A. (2015). Military Review. from http://usacac.army.mil/cac2/militaryreview/index.asp

Chiarelli, P. M., Patrick. (2005). Winning the Peace: The Requirements for Full-Spectrum Operations. *Military Review, July - August*, 4-17.

Clark, T., & Kitfield, J. (2008). On Mullen's Mind. *Government Executive*, 16-18.

Folsom, S. W. B. (2013). WHY CAN'T WE WIN? Pitfalls in Modern U.S. Counterinsurgency Operations. *FAOA Journal of International Affairs, 16*(3), 41-53.

Forrester, J. W. (1969). *Urban dynamics [by] Jay W. Forrester*: Cambridge, Mass., M.I.T. Press [1969].

General Raymond T. Odierno, Congress, First Sess. (2013).

Gentile, G. P. (2009). Let's Build an Army to Win All Wars. *JFQ: Joint Force Quarterly*(52), 27-33.

Grant, G. (2007). If it Ain't Broke. *Government Executive*, 17-19.

Grunow, C. (2006). Advising Iraqis: Building the Iraqi Army. *Military Review*(July - August), 8-17.

Hames, J. (2013). Army to stand up new Resiliency Directorate. from http://www.army.mil/article/113627/Army_to_stand_up_new_Resiliency_Directorate

Hammes, T. X. (2012). Counterinsurgency Not a Strategy, But a Necessary Capability. *JFQ: Joint Force Quarterly*(65), 1-5.

Londono, E. (2012). Rising number of soldiers being dismissed for failing fitness tests. *The Washignton Post.* http://www.washingtonpost.com/world/national-security/2012/12/08/13d2e444-40b8-11e2-ae43-cf491b837f7b_story.html

Oliver, I. (2011). Mechanized Forces in Irregular Warfare. *Military Review, March - April*, 60-68.

Sterman, J. D. (2001). System dynamics modeling: Tools for learning in a complex world. *California Management Review, 43*(4), 8-25.

Tucker, M., & Conroy, J. (2011). Maintaining the Combat Edge. *Military Review, May-June*, 8-15.

Ursano, R. J., Colpe, L. J., Heeringa, S. G., Kessler, R. C., Schoenbaum, M., & Stein, M. B. (2014). The Army Study to Assess Risk and Resilience in Servicemembers (Army STARRS). *Psychiatry, 77*(2), 107-119. doi: 10.1521/psyc.2014.77.2.107

Winter, S. G. (2000). THE SATISFICING PRINCIPLE IN CAPABILITY LEARNING. *Strategic Management Journal, 21*(10/11), 981.

Wood, D. (2013). Military and Veteran Suicides Rise Despite Aggressive Prevention Efforts. http://www.huffingtonpost.com/2013/08/29/military-veteran-suicides-prevention_n_3791325.html

Conclusions and Recommendations

This study provided two contributions to the better understand the US Army Health and Discipline system. First providing analysis of the architecture of the system, and second describing the dynamics of the system over time. The primary focus was to describe the system as it currently exists, demonstrating that there exists a complicated maze of programs that have overlapping effects, and no clear mechanism to set priorities or measure effectiveness. After concluding this research the author calls to attention remaining strategic challenges, offers areas of future research in Army health and discipline, and provides some recommendations for improving the current system.

The first contribution is an analysis of the architecture of the system. The analysis used an Object Process Methodology to show that the language in the current regulations is unclear about the processes involved in health promotion in the Army, and that the Army has not clearly identified objects responsible for executing some of the sub-processes. Using this framework the author compared the architecture across three sites, and discovered key architectural differences among Army installations. The figure below summarizes the intended architecture of the Army Health Promotion system, using an object-process diagram. Using models, like an OPD, to complement the descriptions in regulations help to clarify the process of how the Army Health Promotion processes increases Army Community Health. It also highlights gaps in the current system. Specifically, there is no object assigned responsibility for assessing population needs. Across the three installations of analysis, there were three different organizations and methods employed to accomplish this process. This type of organizational behavior limits organizational learning, because there is no stable norm to compare feedback against (Schimmel, 2009). When

there is no standard process for implementing Army Health Promotion how can best practices and lessons learned be transferred across the organization.

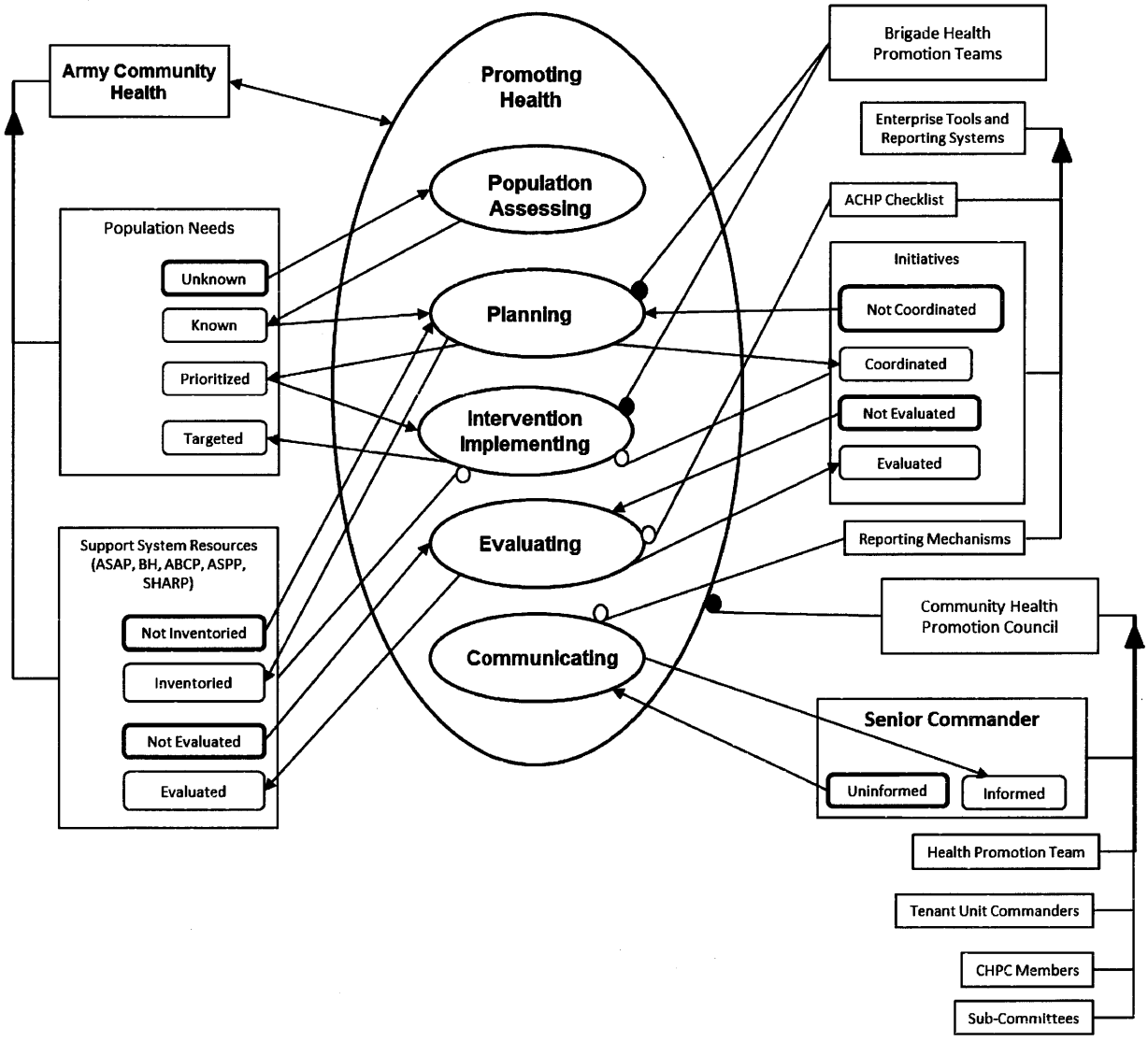

Figure 33 - OPD Army Health Promotion

The second contribution of this research is a description of the dynamics of the health and discipline capabilities of the Army over time. Using system dynamics, the author incorporated over a hundred hours of field interviews with leaders from company command teams to brigade command teams, and health and discipline program service providers into a causal loop diagram

(CLD) that explains how health and discipline capabilities degrade over time when the Army is pressed to learn a new task (counterinsurgency). Figure 34 highlights the non-linear relationship between health and discipline of the force and unit mission readiness.

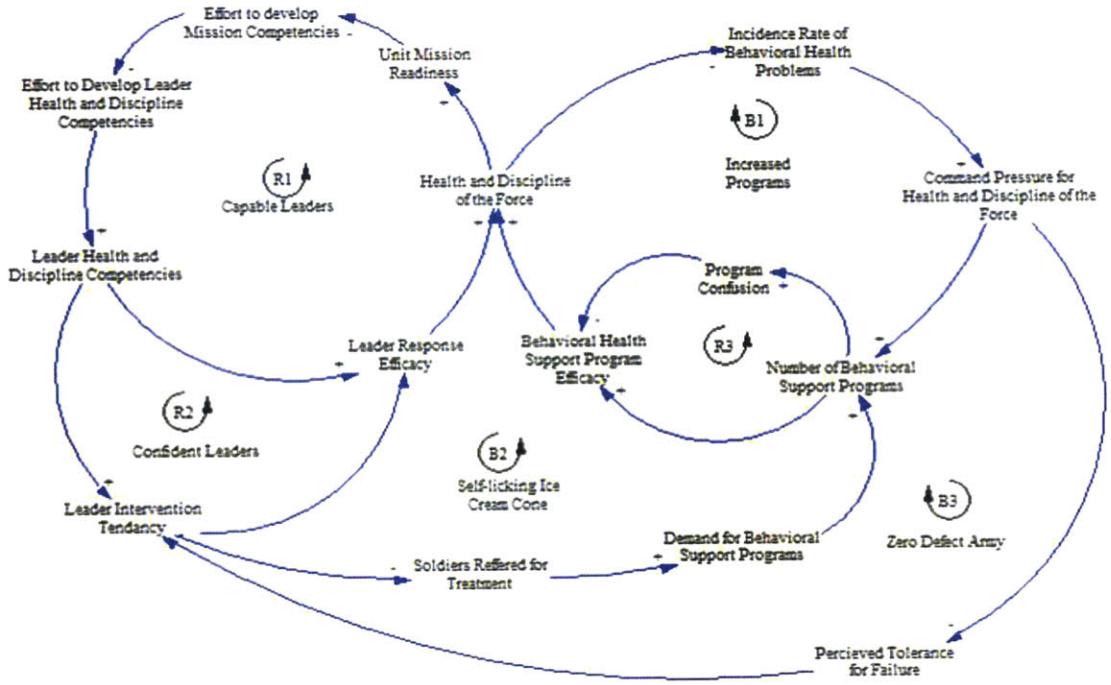

Figure 34 - Causal Loop Diagram Health and Discipline

The dynamics of organizational learning, and forgetting, in the context of accomplishing ongoing work has implications for the Army, and its attempt to build a capability in health and discipline. The underlying structure of a reinforcing loop (health and discipline capabilities) and balancing loops (program capabilities) inherently have a 'tipping point' (Morrison, 2008). At some point in the system, the reinforcing loop can dominate the effects on the system, where healthy and disciplined Soldiers make units more operationally ready, allowing leaders more time to generate health and discipline in the force, which in turn makes the force more operationally ready. However, there are resource constraints on leader's time and effort. And one of the results of this research has shown that the strategic efforts to engage junior leaders in the

creating health and discipline capabilities has not been as successful as the creation of counterinsurgency capability. Evidence can be found in comparing the trend of thesis produced each year by Army officers with the number of *Military Review* articles on the topics of mission capabilities and health and discipline capabilities.

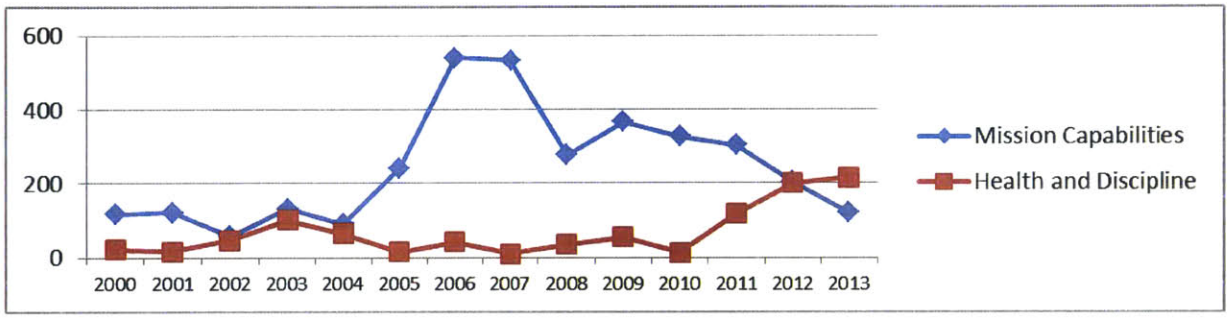

Figure 35 - Military Review Articles by Subject (2000 - 2013)

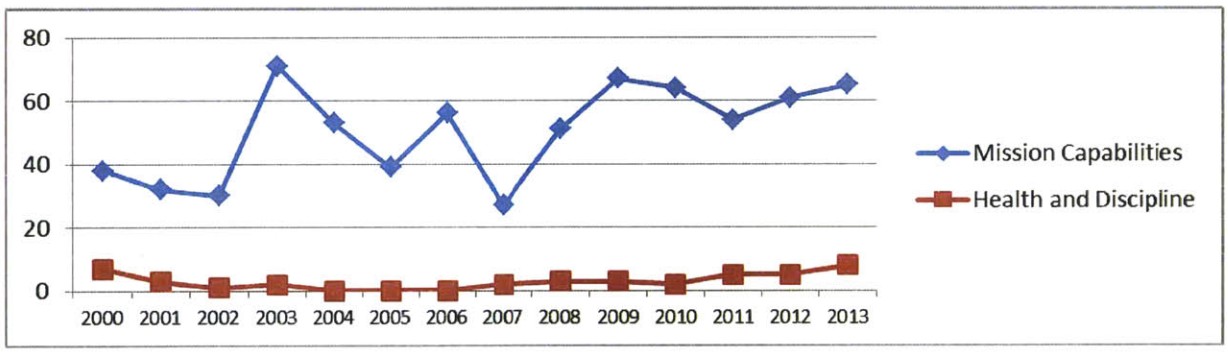

Figure 36 - MMAS Thesis Topics by Subject (2000 - 2013)

Strategic Challenges to Generating Health and Discipline Capability

From the authors observations there are two large cultural and strategic challenges that the Army needs to overcome to truly make large improvements in the health and discipline of the force. The first is the cultural narrative that mandatory training developed human resource tasks are orthogonal and in competition for resources to unit readiness. The second is a culture that fails to embrace flexibility and experimentation around health and discipline tasks. Both of these strategic challenges stand in the way of developing a mission command framework for a

universal *HEalth And Discipline (HEAD) Task List* that are integrated and evaluated with the same methods as Mission Essential Tasks.

During this research, it became clear that leaders are pressed for time. It is the most important resource for junior leaders, and there is a tradeoff between the mission training and HEAD training. This view is narrowly focused on the short-term tradeoffs between enforcing the Department of the Army mandated human resource requirements, and not on the relationship between the effect of healthy and disciplined Soldiers on a commander's unit readiness. There are few commanders who would disagree with the view that a unit with lower rates of substance abuse is more operationally ready. However, there are few commanders who would make the link that more training in substance abuse prevention training causes an increase in operational readiness. Beyond the scientific validation of prevention training to reduced rates of substance abuse, there is also an organizing principle that contributes to this cultural barrier. In principle junior commanders are held accountable and responsible for everything their unit does or fails to do. In mission practice commanders are given wide authority to discover and implement the process to achieve the desired ends, but this is not the case with HEAD.

The process of applying critical thinking to achieve the intent of a higher commander not only requires an understanding of the individual capabilities required, but also a mechanism for how these individual capabilities build into unit capabilities. The Department of the Army has essentially taken the critical thinking out of this process. Instead of commanders training to build a capability, they are training to check the box on a requirement. Under time pressure, they view this requirement as orthogonal to building the readiness that these training requirements are purported to support.

The second challenge is a cultural shift away from defining certainty and requirements at the highest levels of command, to a culture that embraces uncertainty and uses the collective power of the organization to experiment and learn how to improve a Soldier's HEAD. Experimentation and measurement are the most powerful ways we learn about complex phenomena around us, and yet the Army fails to capture value from this to test its human resource training programs. The Army needs to develop the capabilities to design experiments in the context of human resource training. This challenge in itself would be an enormous effort, but one that the Army would find in value in pursuing if it could overcome several cultural opponents to experimentation.

One objection I have heard in presenting this research to measuring the effectiveness of human resource programs in the Army is that the program is a matter of principle and therefore its effectiveness need not be measured. An example may be the SHARP or FAP training. The argument is that the training material in these programs is essential to supporting the core values of the organization. This is a philosophical argument against measuring the effectiveness of programs, because regardless of the value of the program, Army leaders will still expect their subordinates to execute the requirements of the program. Alternatively, one might object by claiming that measurement and experimentation for each of these training requirements is too costly and so the default position of the organization is to not measure. I will address both of these arguments against experimentation.

In response to the argument that these programs are a matter of principle and need not be measure, stands the reality that time is the most precious resource to junior leaders. A world of programs and training requirements exists in a world of finite training hours, creating alternatives for accomplishing these training tasks. When faced with more training requirements than time,

commanders face alternatives. They can rush through the training, likely reducing its effect. They can ignore the training and assume the risk of being held accountable, or they can sacrifice mission training time. Not surprisingly commanders are not willing to sacrifice mission training time to accomplish these training tasks, so in practice there is a de-facto priority for accomplishing these program requirements. This further complicates the first cultural challenge, of viewing 'mandatory training' requirements as orthogonal to mission readiness.

One example of these statements is evident in the *I.A.M Strong* campaign, the Army's campaign to combat sexual assault and harassment. With respect to training, the campaign asserts that "an educated, aware Army Community led by knowledgeable, informed leaders is essential to establishing an effective climate of prevention." (Army, 2014b) Believing this to be the case, the organization creates requirements for training, including standards for hours of training. However, failing to test this statement by meaningful measurement means that leaders in the Army never fully understand the relationship between training, or treatment, and unit climate. What is the best periodicity for the training: 1 hour per week, 4 hours per month, or 40 hours per year? Does the relationship between training and culture exist at all, and is it strong enough to justify the training expense? Across the entire range of mandatory training programs there is an enormous potential for determining what training programs are actually making a difference in the culture of the Army, and the behavior of Soldiers.

The second argument is not philosophically opposed to experimentation and testing, but rather an idea that the cost of testing this training is too large or complicated to be effective. However, the current default of not requiring tests showing a link between some treatment and an effect results in a very low bar to add a new training requirement across the formation. To be clear, I am in favor of operational commanders implementing any number of training courses in

whatever time they feel is necessary to accomplish their desired result. The Department of the Army should place a much higher threshold on organization wide training requirements, because there are costs to leaders in direct time to do the training, in management time (someone has to check that the requirement is completed), and in the lack of critical thinking by commanders on how to accomplish the intent of the training not the letter of the training.

To illustrate the point of conducting training to no effect, when I was a lieutenant in the motor pool, senior NCOs would ask novice artillerymen to assist them with an equipment test, known as a "boom-test." A boom-test is performed on artillery system, where one Soldier would shout "boom" at the breach of the weapon system, and another Soldier would listen, ostensibly for cracks in the bore, at the other end of the weapons system. This treatment added no real value to the maintenance of the system, but was simply a joke played on new artillerymen. In order to know whether the training offered in these programs is more than a boom-test, the Army should evaluate the link between interventions and the desired results from the program. Most senior leaders would think it ridiculous if junior commanders spent 40 hours per quarter doing boom-tests, but they accept these requirements for SHARP, ASAP, FAP, and CSF2 training with the same amount of evidence that this training actually affects unit health and discipline, climate, Soldier behavior, or leader accountability.

Areas of Future Research

This research has been highly descriptive in nature, capturing a current state of the CHPC processes and associated formal elements. While some processes appeared to be more effective than others, none of the installations was fully implementing the intended architecture. Future research into Army Community Health Promotion Process might address:

1. What functions are necessary in the Army Health Promotion process?
2. What architecture best accomplishes the goals of the Army Health Promotion system? What organizational structure should be in place to accomplish the processes associated with Army Health Promotion?
3. How should the Soldier High Risk Team Meeting at the battalion and brigade level best integrate with the Community Health Promotion Council?

During the course of this research time was consistently described as a stressor on the system. Company commanders indicated that although their deployment had decreased, their operational tempo had increased. A wider study of the different types of operational pressure would be beneficial to understanding how these pressures affect the ability to focus on the health and discipline of the Soldiers. For example, a garrison unit leader may have contact time with their Soldier for 8 hours per day. In a combat theater, this time likely doubled, one might hypothesize that the functions related to managing health and discipline are able to be accomplished in a combat environment because leaders have more time with their Soldiers. To expect the same type of management of health and discipline in a garrison environment may not be possible given the time constraints of a duty day.

Recommendations

Adapting a line from the Chief of Staff of the Army, if you want to change the Army, you have to change the people. If you want to change the people, you have to change the system; and if you want to change the system you have to understand where the points of leverage are in the system. This thesis was an attempt to demonstrate where the points of leverage are in the system that would allow leaders to craft policy changes and provide resources in programs to make lasting meaningful change in the US Army.

The CHPC fills an important role in the public health system for installation commanders; however, the ways and means were not clearly articulated in how those ends might be achieved. In *The Red Book* and *The Gold Book,* the Army provided a metaphor for high-risk behavior that has come to be known as the 'Health and Disciplinary Maze Model.' Once a Soldier has been located in the maze, there is nothing to navigate them out. If the Army assumed that junior leaders would have a mental map of this maze and would not need a navigator, then they have been confronted with the reality that this is not the case. The CHPC and Soldier High Risk Team Meetings might be able to serve as a navigator through this maze; however, this would require some changes to the CHPC or a more robust Soldier High Risk Team meeting than is currently practices. With the context of the strategic challenges in mind, and the current role of the CHPC the four following recommendations are offered to improve the current system design.

1. Assign responsibilities for assessing population health needs, and specify a method for measuring program effectiveness

2. Specify the interface between the battalion and the brigade Soldier High Risk Team Meeting and the CHPC

3. Reduce schedule pressure for Company Command Teams

4. Integrate HEAD training with unit training management

Assign Responsibilities for Assessing Population Health Needs

The current architecture of the Army Health Promotion process mandates that the CHPC "will identify and eliminate redundancies and voids in programs and services by evaluating population needs, assessing existing programs, and coordinating targeted interventions" (Army,

2010, p. 8). This cycle depends on knowing the needs of the population, but in each installation this routine was one of the least mature. The intended model of the architecture fails to assign the responsibility to an organization, and fails to provide a method for measuring the population. The first oversight of failing to assign an agent might provide the senior commander with more freedom, but the task of evaluating population health needs is complicated, requires some specialized training, and needs to be standard if the Army wishes to learn across installations. The method for measuring a complex idea like the needs of the population requires some basic understanding of random sampling, statistics, and survey techniques. None of these individual capabilities are trained at the Health Promotion Officer Course, and so they are left to individuals to try and acquire ad-hoc.

Although this is a complicated task, it is without precedence in the military. Creating and implementing a meaningful method for the evaluation of complex and subjective program assessments have had success in the military. The Earned Value Management System (EVMS), as an analogy, is "an integrated management system that coordinates the work scope, schedule, and cost goals of a program or contract, and objectively measures progress toward these goals" (AT&L, 2015). It is an interesting analogy because one of its primary functions is to measure the performance of contractors, and provide managers with an early warning of deviations from baselines. The assessments are used to make decisions about programs that might have enormous cost overruns.

Developing a common platform and a standard method for measuring progress, and determining deviation from baselines across the enterprise could have several advantages for the Army health and discipline system. First, it fills the gap in the current system of ad-hoc measurement or no measurement of programs at all. Commonality across the enterprise is

important because senior leaders, installation and senior commanders, generally have limited time to receive updates on the deviations from baselines in the portfolio of programs they are required to manage. While the EVMS is criticized for simplifying a complex assessment into a single unit (dollars), it is useful in quickly focusing senior leader attention to problem areas, which can be addressed with more detailed discussions. EVMS has its disadvantages. It is a costly system to implement, both in administrative time and a learning curve. It also has the ability to be 'gamed' and some officers feel it provides a false sense of quantitative rigor to something that is inherently qualitative.

There is an opportunity for a common evaluation and management system of Army human resource behavioral programs. There are also some known risks and disadvantages to implementing a system for this purpose. Given, the current state of practice in the operational management of these programs, I believe that a further study to design and test the implementation of a system would add value to Army leaders, and would provide the Community Health Promotion Council with a needed tool for accomplishing one of their directed functions.

High Risk Team Meeting Integration

The current Army Health Promotion process does not specify the architecture of the battalion and brigade high risk team meeting, or its intended interactions with the Army Health Promotion process. To clarify the high risk team meeting is widely practiced as the operational implementation of a requirement to "establish task forces, committees, and risk reduction teams to facilitate local health promotion initiatives to reduce high-risk behaviors and build resiliency" (Army, 2010, p. 7). There is little guidance on how these operational unit task forces, which have

come to be called high risk team meetings, interface with the larger system that is handled by the CHPC. It is also unclear what risk is being managed at these meetings. In some cases, the focus is almost entirely on medical risk, as defined by a medical provider (high risk is a medical term). In other cases high risk encompasses a holistic set of behaviors, from medical risk, legal risk, relationship risk, and occupational risks. The larger architectural concern is that there are no instructions on the interface between the CHPC, working groups, Brigade Health Promotion Teams, and Battalion and Company high risk team meetings. Open questions that should be answered might include: should these interfaces exist, and how strong should the alignment be?

The Army Health Promotion process defines that the battalion Soldier High Risk Team Meeting and the Brigade Health Promotion Team must exist, but then fails to describe how they should communicate with the other elements of the system. In a sense hoping that these interfaces will develop organically. My conclusion is that this practice is ineffective. The Army G1 should consider the holistic architecture of the Army Health Process and clearly define the interface between the battalion high risk team meeting and the brigade health promotion team. The functional requirements of this interface should then necessitate the membership, and scope of the high risk team meeting. For example if one of the intended functional requirements of the high risk team meeting is managing profiles, which is one of the more challenging areas described by operational units, then this would necessitate the battalion medical representation to handle this function. It also would help to define the scope of what high risk is. In this case high risk might be extended to more than suicide and include high risk of requiring a medical board for separation. This is only one function in a set that would result in a better definition of the high risk team meeting, and how it adds value to the Health Promotion Process.

Reducing Schedule Pressure

This thesis illustrated the power of reinforcing loops around Army leadership as point of leverage in the system. Previous studies using system dynamics have described schedule pressure as an important determinant variable in activating these loops (Morrison, 2008; Repenning, Goncalves, & Black, 2001; Sterman, 2000). In our field interviews we found schedule pressure and the lack of time as important to junior leaders. Often called 'white space' on a training calendar, the time that is unallocated to any particular task is important in leader development because so many of the opportunities for managing health and discipline are by their very nature stochastic. If the current system of training requires every minute of the day to be filled, then when a Soldier bounces a check, or leaders become aware of a potential stressful event, they are forced to cancel training or 'deal with Soldier issues' as quickly as possible. This phenomenon, we termed as 'identify and pass' seems as if leaders do not care, do not have the skills, or do not want to get involved in the personal lives of Soldiers, is also a real tradeoff in the time that they have available to train. It has become almost unacceptable for a training schedule to not be completely full. This cultural norm is powerful and can contribute to these unintended consequences.

During one of our field interviews, we met a battalion commander who suggested a reduction in half of all the mandatory training requirements. So if substance abuse prevention training is currently required semi-annually, the requirement would change to an annual requirement. The sequestration and rollback of all current mandatory training levels may be an appropriate operational implementation of the principle to reduce schedule pressure. In addition to the reduction of frequency, I believe that the current breadth of courses is also too long. For example, 2 hours of suicide prevention training has not been demonstrated to be any more effective than 1 hour, or 30 minutes. The logical recommendation to reduce the schedule

pressure through mandatory training is to find the minimum viable training package. In order to change the culture around 'white space', the Army might implement a 20% type principle, where each level of command ensures and checks that at least 20% of leader time is essentially unallocated.

Integrated HEAD Training Management

Increasing white space and reducing the mandatory training requirements might be improvements to the current system, but implementation of these changes would fail to resolve a pressing cultural disconnect between Army mission training management and HEAD training. Mandatory training is disconnected with the Army principles of mission command. Mandatory training refers to the standard set of slides that are prepared by higher headquarters are meant to be taught be to Soldiers. Ironically, training to accomplish a unit's mission is also 'mandatory' training but this adjective has come to refer to training that must be completed, but adds little or no value to the unit's mission.

Lower commanders are not expected to decide how much HEAD training they should do to reduce undisciplined or unhealthy behaviors in their formations. Instead, they are given a checklist and guidelines – train to the standard (a time standard), with blatant disregard for the desired effect. While most commanders, even at senior levels, share a sense that this training is a check-the-box exercise, there is no impetus or alternative. By the end of this chapter, I hope to convince you that, not only is there an alternative but all the structural components are already in place to implement it.

The current system of HEAD training values standards over flexibility and variation. In some sense this is self-defeating because every installation has a completely different set of

practices that developed organically in an attempt to interpret the intent of the policies and regulations with regards to Army Health Promotion; and junior commanders are implementing HEAD training ad-hoc within the limits of the time they have remaining from their mission training requirements. The current system is defined by time-based training requirements, and metrics of performance. Army regulations contain language like, "All active component installations and ACOMs, Army service component commands, and direct reporting units are mandated to conduct a minimum of 16 hours of resilience and performance enhancement training." (Army, 2014a, p. 18) This type of performance metric is flawed and counter-productive for a number of reasons. It provides a number that provides no context or justification for the length of the training.

Not only is there a lack of flexibility, there is a more insidious effect. Junior commanders no longer have to apply critical thinking in how these individual capabilities build their units combat capabilities. It sets a time target, rather than a performance target, so there is no reason for discussion with the Soldier about any need for additional training. While most leaders know that people cannot be batch processed like machines, they write the regulations that give the appearance that Soldiers can be processed through some set time of training and have a minimum level of a skill. In the same regulation, you will find better guidance. "Soldiers receive resilience training based on mission requirements and the commander's training guidance, but this regulation requires that, as a minimum training threshold, all skills be taught to each Soldier once every 12 months." On the surface, this guidance seems to allow commanders some flexibility in the conduct of the training. However, the commander really has no flexibility in its implementation, because the training requirements are so large that they are not able to accomplish them in the time give because each skill has an associated time. Further this guidance

still maintains the batch-processing approach to individuals. Although the specific examples are pulled from the Comprehensive Soldier and Family Fitness training regulation, these types of examples would be found in all human resource regulations. The standard for completion is defined as existing in a training environment for a fixed length of time, which a trainer delivers standard training material, the power point slide presentation.

The alternative is for the Department of the Army to define the effect it intends to achieve, and require commanders to make informed decisions that incorporate HEAD training programs into their training schedule. The Army does not expect every unit to train the same amount of time on weapons qualification. Rather it defines a performance standard that Soldiers need to demonstrate. Some company commanders will set aside the minimum amount of training time to ensure their Soldiers can qualify with their weapon, while others might conduct extra training to get more expert qualifications, while others might need even more time just for their Soldiers to qualify. Defining a performance standard sets the expectation that commanders need to evaluate their unit and allocate time for re-training if needed. By setting a performance standard the Army can then allow subordinate commanders to make flexible decisions in the way the reach that standard, which is a much more appropriate for an organization with nested levels of command.

The alternative not only is in line with the values of mission command, but also has the potential to be more effective at building a capability to generate health and discipline. Modeling HEAD training management after mission training, involves each level of commander applying critical thinking and problem solving at their level, communicating this intent to subordinate commands, execution at the lowest possible level, and a system for checking-in with junior commanders. The structural pieces for this model are already in operation. In large part the high

risk team meetings, brigade health promotion teams, and CHPC working groups are already meeting. Adapting the function of these meetings to integrate the training management of the senior commander's health and discipline priorities is in line with the culture of the Army.

These meetings would serve as the forum through which senior commanders provide intent to lower levels of command, and lower level commanders apply critical thinking about how to accomplish their intent. Battalion commanders would deliver HEAD training guidance (possibly with time minimums). In some battalions, this might mean monthly training of some areas, while other battalions may not provide training at all and instead elect for Soldiers to educate themselves in some areas. The role of the Department of the Army is to provide the strategic intent for each level of the program. Programs become the library from which commanders and trainers can access different types of training material and use it as a resource, not as a replacement to the fundamentals of training.

Ultimately the goal of the system is a cultural shift from checking and monitoring, to trust in subordinate leaders, and underwriting risks in the practice of leadership. The Army should be training HEAD tasks to build a capability, not to comply with requirements that have not been validated to deliver the desired effect. This requires bridging the cultural gap between leadership in combat and leadership in our garrison communities, in which we train and prepare for combat. The health and discipline system must adapt from a system that attempts to provide the right answers, to a system where each level of command is focusing on the right problems and applying critical thinking to the HEAD challenges in their formations.

Army Health Promotion (2010).

Army, U. (2014a). *AR 350-53: Comprehensive Soldier and Family Fitness*. Washington, DC: Retrieved from http://csf2.army.mil/supportdocs/r350_53.pdf.

Army, U. (2014b). SHARP. from http://www.sexualassault.army.mil/Template-IamStrong.cfm?page=what-is.cfm

AT&L, O. (2015). Performance Assessments and Root Cause Analyses - Earned Value Management. from http://www.acq.osd.mil/evm/

Morrison, J. B. (2008). Putting the learning curve in context. *Journal of Business Research, 61*(11), 1182.

Repenning, N. P., Goncalves, P., & Black, L. J. (2001). Past the tipping point: The persistence of firefighting in product development. *California Management Review, 43*(4), 44-63.

Schimmel, R. M., Dennis. (2009). LEARNING BARRIERS: A FRAMEWORK FOR THE EXAMINATION OF STRUCTURAL IMPEDIMENTS TO ORGANIZATIONAL CHANGE. *Human Resource Management*(May-June), 399-416.

Sterman, J. (2000). *Business dynamics : systems thinking and modeling for a complex world.* Boston: Irwin/McGraw-Hill.