

SYSTEMS THINKING: A WAY TO UNDERSTAND
SOCIO-POLITICAL ENVIRONMENTS

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The opinions and conclusions expressed herein are those of the student author and do not necessarily represent the views of the U.S. Army Command and General Staff College or any other governmental agency. (References to this study should include the foregoing statement.)

ABSTRACT

SYSTEMS THINKING: A WAY TO UNDERSTAND SOCIO-POLITICAL ENVIRONMENTS, by Major Wendy K. Dedmond, 86 pages.

How can a systems perspective help military professionals understand and intervene in the world? Although U.S. military doctrine recommends Systems Thinking, this doctrine (1) fails to offer a useful, robust description on the perspective and (2) simultaneously recommends the use of overly simplified frameworks that fail to convey the world's complexity. I theorize that such approaches, which are more linear, promote incongruous interventions into the socio-political systems that compose a military unit's area of operation. Using a systems method of analysis that comprises both institutional analysis and complexity theory, I use a civil war case study—El Salvador (1981)—to demonstrate the functionality of this method in terms of explicating systems, causal logics, and system effects. I then compare my description with the speeches and writings of policymakers and military leaders involved in this case. I show how a systems perspective conduces to analysis that is more thorough and reflective of a situation's complexity. Additionally, I demonstrate that “cause and effect” without more complex knowledge of a system has the potential to yield counterproductive results. This study has significant implications for policymakers, strategists, and military professionals.

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ACRONYMS

ADP	Army Doctrine Publication
ADRP	Army Doctrine Reference Publication
ASCOPE	Area, Structures, Capabilities, Organizations, People, Events
COG	Center of Gravity
FM	Field Manual
GOES	Government of El Salvador
JP	Joint Publication
METT-TC	Mission, Enemy, Terrain and Weather, Troops and Support Available, Time Available and Civil Considerations
OE	Operational Environment
OEF	Operation Enduring Freedom
OIF	Operation Iraqi Freedom
PME	Professional Military Education
PMESII-PT	Political, Military, Economic, Social, Infrastructure, Information
SoS	System of Systems
US	United States

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CHAPTER 1

INTRODUCTION

Indeed, even the simple act of building a well, taken upon every day by countless aid agencies, can cause negative repercussions. What if the traditional community leader chosen as an intermediary builds the well in his own private courtyard? What if the well disrupts customary irrigation and water sharing? Resulting problems can include illicit taxes and accelerated power struggles, which in turn paint those that build the well in a negative light. Misplaced generosity can be as damaging as precision-targeted violence. This isn't just a village-level problem, however. Our entire strategic approach to Afghanistan makes the same mistake . . . If we have to think counter-intuitively to win popular affections, then we have a long, long climb ahead of us. How can we win the minds of a population when we don't even know how they think? . . . At best we look like idiots, but insurgencies thrive on precisely such idiocy.

— GEN McChrystal, *The Guardian*

The Puzzle of Systems

The world is made up of systems that coexist and interact in complex networks. Not one system subsists on its own. Instead, they evolve, assemble, and feed into each other. William Connolly describes the interaction between human and nonhuman systems as a volatile “clashing of force fields” pervading and encroaching at various degrees and levels within a network of systems (Connolly 2013b, 7-8). Religion, political institutions, oligarchies, and ideology are all examples of systems, constantly connecting and coevolving in the environment. Connolly argues that interactions between systems act as “resonance machines” intensifying existing undercurrents, nudging systems, and causing them to change (Connolly 2011a, 171).

Fotini Christia’s research supports Connolly’s “resonance theory” by describing the ever-shifting alliances among Afghanistan’s warring factions until a Taliban resonance machine emerged. Christia describes system shifts between fighters and

foreign powers after the 1989 Soviet Union withdrawal. For six years, warring Pashtun, Tajik, Hazara, and Uzbek groups systematically collided, allied, and fractured six times until Taliban factions forced the power distribution in their favor, thereby facilitating control of a large percentage of the country (Christia 2012).

More important to military professionals than noting the power evolution in Afghanistan is Christia's use of Complexity Theory to understand the causes of conflict and alliance formation. Through this approach, Christia dispelled widely-known assumptions about how culture and ideology were driving factors in conflict development; instead Christia recognized that it was power distribution that guided alliance formation. Systems Thinking and Complexity Theory are powerful tools for practitioners to understand the cause of events for the purposes of developing and executing military plans. I posit that by examining system relationships, connections, and the underlying factors that drive actions, military professionals can develop interventions that are more effective.

Contributions to the Literature

The use of Systems Thinking as a method of analysis to understand complex socio-political environments is not a novel recommendation. Scientists, analysts, and economists have used relationships, connections, boundaries, inputs, and outputs to understand systems since the Newtonian era. Systems Thinking has steadily increased in popularity among military circles since the commencement of Operation Iraqi Freedom (OIF). Senior military leaders from General David Petraeus to General David Rodriguez have used Systems Thinking and endorse the use of approaches that surpass linear models as aids to analyze and understand the operational environment. To this extent, one

may expect Systems Thinking concepts deeply intertwined in doctrine and professional military education (PME). However, very little of Systems Thinking is captured, if at all, in joint and Army doctrine, and only a select few include it in PME.

Thus, my goal for this study is to initiate a discourse about the way military professionals analyze the OE. I want to question if existing processes analyze root causes integral to understanding, or if these processes superficially assess “data.” This study is broken down into four parts. The first chapter looks at senior-leader guidance and lessons learned over the last decade to identify requirements with respect to the operational environment. The results are compared with Army and joint doctrine, and training circulars to identify a gap. I then analyze the feasibility and applicability of academic and interdisciplinary concepts to bridge the gap. I apply these emerging concepts to the case study in chapter 4. Findings from chapter 4 guide the recommendations to existing processes, doctrine, and PME that I set forth in chapter 5.

The Argument

The world is a complex web of interrelated systems that cannot be characterized with linear tools and processes. Equally helpful is the approach of taking components and analyzing them individually, removed from the relationships and connections that drive and bound systems together. I argue that a Systems Thinking method of analysis provides military professionals greater fidelity in terms of understanding socio-political conflicts. Through this approach, military professionals can discern relevant information, and thereby knowledge on the causes that impact the conduct of military operations. This is significant for planners, staff members, and others charged with aiding a commander’s visualization, understanding, and risk management processes.

Assumptions

1. The military will operate in increasingly complex and uncertain environments, thereby requiring knowledge and skills in Complexity Theory to aid planning and executions (Training and Doctrine Command 2012, 1).
2. Military operations will feature transitions (i.e., from phase III to IV) that require an understanding of the human domain to develop effective tactical actions that meet strategic mandates.
3. Conditions, circumstances, and influences are concepts military professionals must comprehend in order to understand the environment and develop effective plans (Department of the Army 2012c, 1-1).
4. The human domain will continue to display a capacity to evolve, contain multiple degrees of agency, and interact with other systems in the environment.

Why a Systems Approach?

In 1968, Ludwig von Bertalanffy wrote extensively about organismic psychology and General Systems Theory. Writings about wholeness, continuous system evolution, and organized complexity incited a revolution between the sciences. Traditional scientific approaches centered around reductionism and linear causality to connect variables and understand system behavior. Bertalanffy argued, however, that understanding causality also required analysis of component activity, because in open systems, the whole and its parts coevolved in subsequent interactions with the environment. His theory countered traditional views and changed the way scientists thought about systems (Bertalanffy 1968).

Bertalanffy, Christia, and Connolly raise critical points against traditional military approaches used to organize and explain variables in the area of operations. Studies reveal that current processes insufficiently analyze variables warfighters encounter in complex socio-political environments¹ (Whitfield 2012; Livingood 2012; Connable 2012; Ducote 2010). Therefore, practitioners must employ analytical approaches that shed light on system relationships, connections, evolution, and the cause of such interactions.

Lastly, I was driven to this study out of a personal struggle to develop plans that effectively influenced behavior in the environment. Noting the injurious effect a lack of socio-political understanding can have on planning, execution, and resources (human, economic, and political), I was motivated to find solutions to aid fellow professionals. I specify a Systems Thinking method of analysis to understand system action, behavior, causality and evolution. Through this approach, practitioners can arm commanders with better-informed plans that reflect socio-political systems that compose a military unit's area of operations.

Definitions

This study synonymously uses the terms systems perspective, systems thinking, systems theory, and systems approach. "Systems Thinking" is an approach, a process, or a method of analysis. It studies how components and parts connect, interact, and relate

¹Brian Ducote researched the origins of PMESII-PT. Interview records with the first Deputy Chief of the PMESII Division show that, the framework was developed due to joint community discontent with the use of ASCOPE. Furthermore, the original intended use for the PMESII-PT framework was to assess target systems for artillery and other air assets. The construct has morphed over the years to accommodate human dimension variables in the operational environment (Ducote 2010, 6-7).

with other systems and the environment through feedback loops and information exchange.

Using Complexity Theory, this study analyzes connections and interactions to explain how these become events that alter system assemblages (Connolly 2011a).

Craig Parsons's four typologies are used to explicate behavior and describe human action into four typologies of logic (structural, institutional, ideational, and psychological). I use Parsons's four typologies to describe a system's narrative.

I use the term narrative to describe the story (logic) of how and why systems, stakeholders, or actors interact with their environment and the world.

The term root causes is used to denote the underlying factors that drive systems to take certain actions.

The terms area of operations, operational environment, and region of interest are used interchangeably. This study follows JP 3-0's definition for operational environment (OE).²

This study uses the cognitive hierarchy model to denote how data is transformed to understanding. "At the lowest level, [human, mechanical, or electronic] processing transforms data into information. Analysis then refines information into knowledge. Commanders and staffs then apply judgment to transform knowledge into situational understanding" (Department of the Army 2012g, 2-7).

²JP 3-0 defines area the operational environments as "A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (Joint Chiefs of Staff 2011a, GL-14).

Limitations

Through the research process this study found limited historical and scholarly records focused on local dynamics during the civil war in El Salvador. For the most part, publications emphasized national level cleavages, operatives, and initiatives. Therefore, the local dynamics data used in chapter 4 are derived from a small pool of recognized authors on the subject of study. However, the information sufficed and did not deter from demonstrating the function of the proposed method of analysis.

The proposed method of analysis requires an appreciation for complexity in the environment, thereby necessitating cross-referencing of interdisciplinary studies on the area of interest. Sole reliance on higher headquarters' intelligence and operational products will not produce the intended comprehension this method aims to achieve.

Provided more time, this study would include a Systems Thinking analysis for case studies offered as part of the CGSC curriculum, for the purposes of comparing the proposed method against doctrine-recommended frameworks.

Scope and Conditions

This study assesses the feasibility and suitability of the proposed method of analysis for the purposes of examining system connections, interactions, and driving factors motivating behavior. I contend that this process provides practitioners clarity and knowledge on the narratives that systems use to interact with the environment. This study determines whether the sole use of linear approaches to intervene in complex socio-political environments is valid.

My review of doctrine and academic scholarship indicate incongruencies in the definition, language, and variables used to describe Systems Thinking. In this study, the

definition for Systems Thinking should include the study of interrelated parts (structures, institutions, relationships, interactions, etc.) that connect and affect the behavior of other parts within the system. By focusing on these components, the analysis removes discriminatory demarcations that restrict “systems” to a specific categorical domain.

While I considered that practitioners could use any of the frameworks recommended in doctrine, my findings reveal that the separation and categorization of the systems obstructs understanding of how and why the whole (system) and its parts coevolve. Therefore, this study uses the proposed method of analysis as an example to demonstrate its superiority in comparison with other approaches.

Looking Ahead

In chapter 2, this study reviews lessons learned from the last decade to identify guidance to the military profession in relation to socio-political understanding. This section then compares these findings against current Army and joint doctrine to expose gaps. Given these findings, I conducted an interdisciplinary academic review aimed at identifying feasible concepts to resolve deficiencies. Results from this section reveal that a Systems Thinking approach that comprises institutional analysis and Complexity Theory is necessary to understand the physical and cognitive aspects of socio-political systems. Chapter 3 expounds on the qualitative process the study uses to develop the proposed method of analysis.

In chapter 4, I demonstrate the proposed method of analysis in practice, using information from a case study in the Salvadorian civil war period. The case study starts with an event (a snapshot in time) and retroactively traces system behavior over time and space. System relationships, interactions, and patterns of behavior are analyzed for the

purposes of identifying how a system interacts with the environment (the narrative). Once the narrative is developed, this information is analyzed to understand the root causes and underlying factors that direct a system's conduct. I then juxtapose U.S. military and political strategy against the narrative to determine: (1) if U.S. strategy reflects an understanding of the systems and its components, and (2) to determine strategic effectiveness in meeting goals and objectives. Chapter 5 provides recommendations to doctrine and professional military education based on implications found in chapter 4.

CHAPTER 2

LITERATURE REVIEW

The thing I learned most- and I always use Iraq as an example. When we went into Iraq in 2003, we did everything that we wanted to do. We very quickly removed the regime. We gained control of the population. We had no idea or clue of the societal devastation that had gone on inside of Iraq and what would push back on us. We didn't even think about it until we got in there. So we can't allow that to happen again.

— GEN Odierno, Council of Foreign Relations

After a decade at war, what lessons will military professionals and unified action partners gather from the Iraq and Afghanistan conflicts? While the U.S. military analyzes and implements lessons learned, senior leaders recommend that PME include the study of ideology, politics, institutions, and other aspects of the human domain to avoid costly mistakes in the future (Perez 2014). In *Strategic Land Power: Winning the Clash of the Wills*, senior leaders wrote:

That competition and conflict are about people is hardly a revelation. Nevertheless, this fundamental premise often has not received the central emphasis that it should in U.S. military deliberation. War is inarguably the toughest of physical challenges, and we therefore tend to focus on the clash and lose sight of the will. In fact, the neglect or misjudgment of population-centric considerations in U.S. strategic calculations is easily documented. Time and again, the U.S. has undertaken to engage in conflict without fully considering the physical, cultural, and social environments that comprise what some have called the “human domain.” One has only to examine our military interventions over the last 50 years in Vietnam, Bosnia and Kosovo, Somalia, Iraq, and Afghanistan, to see the evidence and costs of this oversight. For example, our failure to understand the depth of Slobodan Milosevic's ambitions and the intense ethnic animosities of his military forces when Tito died in 1989 greatly contributed to a human catastrophe in Bosnia and Kosovo that the early, focused employment of sufficient landpower could have prevented. (Odierno, Amos, and McRaven 2013)

While current Army and joint doctrine emphasize the importance of understanding socio-political systems in the OE, there is a lack of consensus on how to

achieve such understanding. Warfighters, unable to rely on doctrinal guidance, must find their own way in deciphering systems and understanding how each relate to one another. Consequently, warfighters have a difficult time understanding stakeholders' narratives, the causal stories that explain persons' behavior, the indirect effects of military interventions, and the linear and nonlinear causal connections that interrelate different kinds of systems.

Expressions urging leaders to identify root causes before selecting "the right tool to fix" problems reverberate from senior leaders including General Odierno, a multiple combat tour veteran (Perez 2014). Unbeknownst to the warfighter, the problems they face in conflict are often surfacing remainders from previously ill-advised solutions. Thus, the purpose of this study is to identify gaps in current approaches, draw on interdisciplinary studies to mitigate shortcomings, and expose military professionals to a Systems Thinking approach to enhance understanding and avoid mistakes that squander resources or prolong military involvement.

Chapter 2 is organized in three sections. Section one reviews senior leader guidance and lessons learned from the field. In section two I compare findings from the field against current doctrine to identify gaps between requirements and current approaches. Finally, in section three I conduct an inter-disciplinary academic review to recommend a way to bridge the gap.

Guidance Review

Stephen Walt published and propagated the top ten lessons from the conflict in Iraq. While some lessons directly linked failures to policy-makers, five lessons related to

the warfighter's unpreparedness to operate amid complex socio-political environments.

The following list denotes failures in military understanding as posited by the author.

1. "The secularism and middle-class character of Iraqi society was overrated."³
2. USG agencies failed to decipher stakeholder motives and intentions.⁴
3. "Conditions in Iraq proved to be wildly out of sync with prewar assumptions."⁵
4. US forces perceived direct action alone would render the insurgent movement ineffective. Contrariwise, "various actors took steps to defend their own interests or to take advantage of the evolving situation, often in ways that confounded U.S. efforts."⁶
5. "Local identities remain quite powerful and foreign occupations almost always trigger resistance, especially in cultures with a history of heavy-handed foreign interference"⁷ (Walt 2012)

³Walt notes, "Advocates of the war vowed that heightened Iraqi illiteracy rates would favor an unobstructed democracy effort, nonetheless, the ground truth proved this an erroneous assumption" (Walt 2012).

⁴Walt's assessment relates to controversial US-backed figures like Ahmed Chalabi and current Iraqi Prime Minister Nouri Al-Malaki. Critics against Chalabi blame the USG for failing to vet the politician's true motives before empowering him as a key political figure. Likewise, discourses on Hamid Karzai in Afghanistan present similar arguments.

⁵Foreign Policy and Pentagon correspondent, Thomas Ricks, seconds Walt's sentiment in the book titled "*Fiasco*," in which he posits strategic military failures after regime change in Iraq (Ricks 2006).

⁶Walt's assessment relates to a failure to understand motivating factors behind stakeholders, but more specifically the failure to anticipate negative effects resulting from military intervention.

⁷The key argument in Walt's assessment points to a failure to acknowledge historical drivers, particularly in places like Afghanistan with a known history of foreign intervention.

Though lessons noted in the article are contestable, these failures are serious allegations against the military profession. Moreover, journalists are not alone in professing discontent with the lack of military preparedness in dealing with socio-political problems in OIF. Since the Iraq war, senior military leaders have expressed a need for military professionals to develop skills to tackle socio-political affecting the conduct of military operations.

During an interview, General David Perkins acknowledged that while “speed and fire power” were necessary to defeat the regime, “once the mission shifted to create stability, his armored brigade was ill suited both in equipment, and training.” He also added, “the great lesson of Iraq--that the American military must be prepared both to sow chaos and create stability” (Martin 2013). This study then focuses on lessons learned from the field to determine if others second Perkins’s assessment.

The Joint and Coalition Operational Analysis (JCOA) division analyzed 46 cases of U.S. military intervention during the last decade, and disseminated a collection of lessons learned. Through the two-part volume, the division aimed to “identify enduring lessons that can inform future joint force development” (Joint and Coalition Operational Analysis 2012, iii). Volume I synthesized over four hundred findings into eleven strategic themes consistently noting challenges warfighters faced in understanding the OE. The following themes and challenges explicate the aforementioned claim.

1. Understanding the Environment--“A failure to recognize, acknowledge and accurately define the operational environment led to a mismatch between forces, capabilities, mission and goals.” To overcome the gap, JCOA made the following recommendations to the operational design process: (a) employ tools

that aid understanding of the OE, (b) add processes to analyze “problems,” and (c) employ an approach that realistically ties strategic objectives to actions on the ground.

2. “Conventional warfare approaches often were ineffective when applied to operations other than major combat.”
3. Knowledge management must include an information assessments and analysis program, not simply an intelligence collection process.
4. “All operations in the past decade featured important transitions, such as the transition from phase III to phase IV . . . if they are not [managed correctly] they are opportunities for the enemy [to exploit] or for the failure of our intended objectives” (Joint and Coalition Operational Analysis 2012, 2-22).

In a separate study, General Robert Cone, the then Training and Doctrine (TRADOC) Commanding General, directed and sanctioned TRADOC’s G2 assessment of the OE to 2028 to forecast pending threats to U.S. National security. The analysis confirms that military professionals must understand the fundamental causes driving conflict in an area of operations. In his endorsement, Cone remarked:

We know that the current and future strategic environment will be characterized by uncertainty, complexity, and increasingly nuanced relationships. The conditions of the strategic environment must be understood, captured, and factored into Army decision-making. Only then, can realistic training, the correct mix of systems and capabilities, and the proper approaches to leader development and education be identified and implemented across TRADOC and the Army in general. (Training and Doctrine Command 2012, 1)

Based on the aforementioned analysis and senior leader guidance to the military, this study determines that military practitioners face challenges in understanding complex environments. More specifically, military practitioners do not understand: (1) how

systems connect and interact in the environment, (2) the root causes driving behavior and actions, and (3) the feedback loops (second and third order effect) resulting from military intervention. These three points are juxtaposed against joint and Army doctrine to identify gaps. The study then analyzes interdisciplinary academic literature to recommend a way forward.

Relevant Literature

Doctrine

Recognizing a dire need to guide forward deployed personnel in Iraq and Afghanistan, General David Petraeus and Marine Lieutenant General James Mattis redrafted the Vietnam-era counterinsurgency Field Manual (FM) 3-24, in 2006 to include a Systems Thinking approach. The 2014 revision of FM 3-24 states:

Systems thinking involves understanding a problem in terms of systems and how they relate to, and influence, each other. For counterinsurgents this includes not only how the various systems in an insurgency interact, but how they interact and affect the various systems in the operational environment. Additionally, systems thinking should drive commanders and staffs to develop an understanding of how their lines of operations and lines of effort relate and influence each other. an understanding of the relationship within the insurgency. (Department of the Army 2014a, 7-6)

The manual advises the reader against compartmentalization, as doing so might lead to shortsighted plans, inhibit the Course of Action (COA) analysis process, and mask second-and third-order effects. However, the suggestion that categorization of systems into linear frameworks such as Areas, Structures, Capabilities, Organizations, People, and Events (ASCOPE) as a “systems” approach confounds the true nature of Systems Thinking. Systems Thinking and Complexity Theory focuses on analyzing system, subcomponents, interactions, relationships, behavior, and causality.

I proceed to review products practitioners produced during training environments to determine how organizations understand and use frameworks to analyze the OE. First, I reviewed pre-deployment training provided to the deploying Security Force Assistance Teams (SFAT) at the Advisor Academy in Fort Polk, Louisiana.⁸ Using General Stanley McChrystal's *2010 Counterinsurgency and Stability Operations Guidance*, presenters at the academy urged teams to be "participant observers" in the environment, to "think" and "act" critically and vigilantly seek "deeper cultural drivers" to enhance their understanding of the OE (Major 2013).

Nonetheless, during the testing phase, teams received the warning that although "thinking outside the box" is advisable, and the "ASCOPE framework is exceedingly subjective," as long as "it made sense" and the determination could be "justified," information about the OE "must be placed inside the box [category] where you [the practitioner] can find it when you need it" (Major 2013).

Next, I reviewed products developed by students during planning exercises at the Command and General Staff College (CGSC). Using doctrine-recommended frameworks, students presented "information" on systems for the region of study, however clarity and knowledge on how systems coevolve, interact, and the impact these had on military operations was elementary at best.⁹ Through informal conversation with students in the CGSC 14-01 class, I noted that the perception among field grade officers

⁸The Army directed Security Force Assistance Teams (SFAT) to Afghanistan to facilitate the transition between US and Coalition forces with its local military counterparts (Major 2013).

⁹See student board work in Appendix A and a slide presentation in Appendix B.

is that senior leaders want clear and concise information, thereby encouraging the use of categorical approaches to condense information into presentable products.

This makes structured frameworks extremely practical for staff officers wishing to satisfy senior leader's briefing preferences. Furthermore, because Systems Thinking was often used to tackle social issues, counterinsurgency plans and stability missions in OIF, students noted that employment of a Systems Thinking approach should be reserved for "those" types of missions. CGSC student responses were unexpected given the emphasis CGSC places on Clausewitzian teachings and given the lessons these students experienced in recent conflicts.¹⁰ Conflicts over the last decade prove that, irrespective of the type of mission, military professionals engage with other human, social beings, whether behind the armor of a tank or behind a computer screen far removed from the actualities of combat. Next, this study analyzes *Doctrine 2015* to determine the source of confusion on Systems Thinking.

Following ADP 3-0, commanders require continuous understanding of the OE to develop effective tactical actions that meet strategic objectives. Consequently, commanders are guided to the eight interrelated operational and mission variables to analyze "systems" in the OE.¹¹ Commanders judge the interactions the variables have against "a specific situation, domain (land, maritime, air, space, or cyberspace), area of

¹⁰In the book *On War*, Clausewitz posits, "The art of war deals with living and with moral forces" (Clausewitz 1984, 86). *On War* is a standard-issued book at CGSC for the 14-01 class.

¹¹Operational Variables include, Political, Military, Economic, Social, Information, Infrastructure, Physical Environment, and Time (PMESII-PT), and Mission, Enemy, Terrain and Weather, Troops and Support Available, Time Available and Civil Considerations (METT-TC).

operations, or area of interest” as a basis to “plan, prepare, execute, and assess operations” (Department of the Army 2012b, 2-10).

ADRP 3-0 warns, “relationships among friendly forces, enemy forces make land operations exceedingly difficult to understand and visualize. Understanding each of these parts separately is important but not sufficient to understand the relationships among them” (Department of the Army 2012c, 17). Nonetheless, Army professionals are guided to categorize and separate components as an approach to analyze the OE. Could the problem be that neither ADP 3-0 nor ADRP 3-0 offer curative measures to mitigate limitations imposed by the use of categorical frameworks? Or that neither publication offer specific rules for each category, thus confounding where variables belong in the framework. The lack of specificity engenders biases in the process as practitioners rely on heuristics to determine the “right” fit for components in the OE. The lack of guidance can be problematic for seasoned practitioners analyzing complex socio-political systems, as well as those lacking operational experience.

This study then looks at ADRP 6-22’s guidance to Army leadership. ADRP 6-22 posits, “the ability to operate comfortably in open systems” coupled with understanding of causal relationships are clear examples of “competency skills” (Department of the Army 2012d, 6-12). This publication offers Systems Thinking to untangle complexity; nonetheless, the ADP uses systems synonymously with equipment, organizational and personnel capabilities, and other management programs. Yet adding more confusion to the analytical process used to understand the OE to include the definition and intended use for Systems Thinking.

This study proceeds to review intelligence doctrine, focusing on analytical recommendations with respect to Intelligence Preparation of the Battlefield (IPB) and the Joint Intelligence Preparation of the Operational Environment (JIPOE) processes. ADRP 2-0, notes, “interrelated global or regional” conditions affect warfighters and the mission (Department of the Army 2012e, 1-1). Following ADRP 3-0 guidance and joint doctrine recommendations, ADRP 2-0 conjectures that a broad PMESII-PT analysis sufficiently informs senior commander “understanding and visualization.” Under civil considerations, the publication temporarily relaxes the restriction and urges analysts to use “joint systems perspective, the operational variables, or the mission variables. . . . However, upon receipt of the mission, Army forces use ASCOPE characteristics to describe civil considerations as part of the mission variables (METT-TC) during IPB” (Department of the Army 2012e, 2-5). This study finds that intelligence frameworks assess civilian considerations to determine how these support enemy networks, versus analyzing socio-political conditions to understand how civilians interact and affect the OE and the conduct of military operations.

Central to military intelligence analysis is enemy threat (composition, disposition, and strength). I assess this focus to be a cause for the myopic view intelligence presents to denote socio-political considerations in the OE. Training Circular (TC) 2-33.4 corroborates this assessment with the synonymous definition it offers for the OE and the “threat environment”, and the enemy-focused analytical tools it recommends to understand social networks (Department of the Army 2009f, vii).

In *A Blueprint for Making Intelligence Relevant in Afghanistan*, General Michael Flynn outspokenly noted that “we must ask why, out of the hundreds of intel analysts

working in brigade-level and regional command-level headquarters, only a miniscule fraction study governance, development, and local populations--all topics that must be understood in order to prevail” (Flynn, Pottinger, and Batchelor 2010, 9).

JP 2-01.3 denotes that organizations can use a systems perspective approach to analyze PMESII variables during the JIPOE process.¹² Through a Systems Approach, muddled interactions, missed through categorization, can be identified and used to determine “decisive points, lines of operations, and other design elements” (Joint Chiefs of Staff 2009b, xii). However, the publication notes that a systems perspective aims to understand a “holistic view” of the OE, thereby discounting the impact local dynamics may impose as the whole and its parts coevolve. This study finds “intelligence” approaches at Army level, fail to see intricacies and connections socio-political systems display, while joint processes assume a “top-down” perspective to explain socio-political aspects at every level in the OE.

This study reviews ADRP 5-0’s guidance with respect to operational planning. ADRP 5-0 suggests models and graphics aid the extrapolation of underlying factors driving actions that would otherwise remain unnoticed through static frameworks. To assist planners through problem framing, the publication suggests viewing relationships and interactions through space and time from a “stakeholder’s perspective” (Department of the Army 2012g, 2-5).

¹²Joint Intelligence Preparation of the Operational Environment (JIPOE). Step 2 of the JIPOE process guides “analysts [to] develop a systems perspective through the identification and analysis of all major elements within friendly, adversary, or neutral systems and subsystems that are potentially relevant to the success of a joint operation” (Joint Chiefs of Staff 2009b, xviii-xix).

All of these concepts align with Systems Thinking concepts and allow granular and often hidden details fogging commander's understanding to surface. However, ADRP 5-0 and ADP 5-0 advocate these concepts to commanders, leaders, and unit staffs, omitting tactical level practitioners where strategy is integrated. Furthermore, findings indicate that Systems Thinking concepts found in ADRP 5-0 are an anomaly hardly gaining notice in Army doctrine.

While current analytical variables and frameworks provide a good starting point, they inherently prevent a comprehensive understanding OE. When practitioners categorize, list, or separate variables, connections among systems are missed. The analytical tools recommended to intelligence analysts have the potential to capture patterns of interaction, but all of these aforementioned frameworks fail to identify why relationships and connections occur and how these affect the OE. While Army doctrine suggests Systems Thinking, it confounds the idea by recommending categorical compartmentalization, omitting motivating factors and interrelationships. Without a true "systems" analysis, the information is simply "data."¹³ This study likewise reveals similar discrepancies and concerns in joint publications.

In 2011, the Joint Staff, J-7 identified gaps in operational design publications (JP 5-0 and JP 2-01.3), tested and established "best practices," and released the *Planner's Handbook for Operational Design for the Joint Warfighter*. In his endorsement, General Frederick Rudesheim noted that while "standard planning processes have served us well

¹³ADRP 6-0 on achieving understanding--"commanders and staffs process data to develop meaning. . . . At the lowest level, processing transforms data into information. Analysis then refines information into knowledge. Commanders and staffs then apply judgment to transform knowledge into situational understanding" (Department of the Army 2012h, 2-7).

to this point. . . . Commanders and staff generally tend to use these processes somewhat mechanically”¹⁴ (Joint and Coalition Warfighting 2011, 2). Additionally, the handbook notes, divergent use of key concepts and terminology creates confusion about the application of design among practitioners from differing services. The study notes the language variation is a source of confusion for the practice and applicability of Systems Thinking.

After analyzing publications and training curriculums, this study determines four major gaps with current approaches. First, while operational design and Army design methodologies encourage Systems Thinking, Army doctrine confounds the theory by offering that it can be applied through system compartmentalization. Second, although certain Army publications recommend Systems Thinking to analyze the OE, they narrow employment of such concepts to strategic planning, when practitioners at every organizational level can benefit from the approach. Third, certain publications offer Systems Thinking analysis to garner a “holistic” understanding of the OE, thereby negating that local dynamics may differ at the tactical level. Last, a lack of consensus on a definition and use for systems and Systems Thinking exists across Army and joint publications.

Other joint publications have embraced JP3-0’s definition for “systems”; however, there is no mention of a Systems Approach or Systems Thinking. Other than ADRP 5-0 and FM 3-24, no other Army doctrine defines systems or the Systems

¹⁴General Rudesheim paraphrases General James Mattis’s writings found in the October 2009, *Vision for a Joint Approach for Operational Design*.

Thinking process. ADP 1-02 *Operational Terms* does not include Systems Thinking language as part of the military lexicon.

This study recognizes the following trending challenges that recommended analytical tools impose on understanding; (1) Current linear approaches inherently omit interactions and do not explain relationships between the variables; (2) Motivating factors (causal logics) that explicate agency, choices, and behavior are masked when categorical variables are listed; and, (3) Lastly, linear cause and effect and approaches are inaccurately misleading. Uncertainty in the environment assures that no two events produce the same results even given the same variables.¹⁵

Systems Theory

An Academic Perspective

The Prussian General and military theorist Carl von Clausewitz argues, doctrine should serve merely as a guide, instead “judgment”, creative and critical analysis must drive concept development and formulation of ideas¹⁶ (Clausewitz 1989, 156-157). Because friction and fog are inevitable aspects of war, military professionals must train to see beyond the fog of war and recognize among the complexity factors that affect the mission. Decoupling variables from the environment to construct a narrative is not sufficient to clear the fog and provide situational understanding. Current Army doctrine guides practitioners to use categorical frameworks to understand the OE. However, these

¹⁵Uncertainty describes the fog of war, the unpredictable actions, and exogenous forces (human, environmental, etc.) that affect operations.

¹⁶Clausewitz describes critical analysis this way: “the tracing of effects back to their causes. This is *critical analysis* proper (Clausewitz 1989, 156).

are insufficient for practitioners to gain the clarity and knowledge required to make informed decisions.¹⁷ This study consults academic agencies, subject matter experts, and scholars to aid Systems Thinking understanding.

William Connolly describes self-organizing, spatiotemporal systems that interact, impinge, merge, or become entangled with other systems. These interactions create “litter” adding complexity to an already complex environment. Warfighters experience “litter” in the form of alliances, conflicts, or splinter groups in the battlefield. Therefore, he suggests, interveners in the environment should focus neither on a holistic nor a reductionist approach, but should instead analyze connections that bond the two together. He offers the concept of “durational time” to organize chaos, by shortly halting systems to analyze their interactions through time.

This study adopts Connolly’s ideas on durational time into the concept “snapshot in time,” explained in chapter 3. Finally, Connolly warns against the pressures that “invoke irrational actions,” in its place he offers “experimental interventions” that account for the fragility of systems. Attunement to the way systems behave and interact in these environments, he claims, will inspire creative counter-strategies (Connolly 2013b).

Craig Parsons dispels generalized logics of human action based on predetermined categorical explanations. Instead, he proposes what he calls “particular logics,” which focus on “causal consequences of resolved contingencies” (Parsons 2007, 5). In other

¹⁷Data consist of unprocessed signals communicated between any nodes in an information system. . . . Information is the meaning that a human assigns to data by means of the known conventions used in their representation. . . . Knowledge is information analyzed to provide meaning and value or evaluated as to implications for an operation” (Department of the Army 2012h, 2-7).

words, Parsons's "logics" explicate stakeholder agency in behavior. This distinction is particularly important for practitioners to identify causation and to moderate changes in the environment. Parsons describes explanations of human actions in four interrelated typologies of explanation (structural, institutional, ideational, and psychological).

Structural causal claims "explain what people do as a function of their position" (Parsons 2007, 12). Social class, land ownership, or physical powers are examples of the obstacles individuals may experience under this logic. Institutional causal claims explain what people do when constrained by manufactured organizations or the rules these institute. Institutional causal claims, as they relates to path dependence, contend that, "People's choices at time t alter their own constraints" and set them on path dependent choices at time " $t+1$ " (Parsons 2007, 70-73). Ideational causal claims explain "what people do as a function of the cognitive and/or affective elements that organize their thinking" (Parsons 2007, 67-68). Lastly, "hard-wired features" such as, emotional or visceral elements explain psychological causal claims (Parsons 2007, 12).

The four typologies funnel structural and institutional claims under the "*logic of position*." This logic describes "how material obstacles, fabricated constraints, and incentives, channel an individual to certain actions" (Parsons 2007, 13). Ideational and psychological claims offer logics of interpretation, which indicate action as a direct result of individual weighing potentiality and desirability. Furthermore, while environmental or psychological conditions mandate structural and psychological causes, institutional and ideational causes grant individuals agency and choice. Practitioners analyzing causal claims can find Parsons's explanations helpful, particularly in problem framing, narrative understanding, and development of the operational approach.

In *Emergence*, Eric Dent argues two points of interest to military practitioners. First, practitioners limit their thinking through use of traditional worldviews, as they develop a “*crisis of perception*” by assuming “linear regression on a non-linear phenomena (sic)” (Dent 1999, 12).¹⁸ Second, the construct practitioners use to analyze the environment affects what they see. This study tests these two points in chapter 4 to determine the impact (if any) categorical frameworks have in understanding the OE, and the effectiveness of cause and effect strategies in complex environments.¹⁹

Robert Jervis supports Dent’s arguments against reductionism. In *System Effects*, Jervis argues that reductionism predisposes practitioners to produce biased analysis. Instead, he favors the use of Complexity Theory, highlighting the importance of analyzing “systemic nonlinearities, feedback effects, indirect effects, and the effects of contingency” (Jervis 1997, 60).

Drawing on examples of human behavior and other escalation of events leading to conflict, he posits that second and third order effects (direct or indirect) are important to understanding system behavior. As actors interpret situations based on their position in the environment, Jervis advises constant assessments are necessary to ensure strategies

¹⁸*Emergence: Complexity and Organization* magazine provides updates in the field of complexity science. The traditional worldview “focuses on assumptions of reductionism, linear causation and analysis of components as independently existing units” (Dent 1999, 5-12).

¹⁹To illustrate these two points, Dent uses failures from a Rent Control Strategy. A housing organization erected a rent control strategy capping rent fees at a set cost. The housing organization assumes the strategy will lead to low-cost housing in a given community (linear cause and effect strategy). However, failing to account for emerging factors and feedback loops (below market compensations, property deterioration, and overcrowding), the strategy created more problems for all stakeholders (Dent 1999, 12).

resonate with the populace it intends to affect. His debates on game theory to identify patterns of behavior can prove useful to practitioners during planning and wargaming.

Lisa Schirch also reinforces Dent’s assessment by promulgating a theory that the lens and tools used to deconstruct the environment impact narrative understanding. She posits that interveners sharing operational space collect and analyze data through different lenses, and thus produce contradictory strategies focused on internal organizational objectives instead of focusing on conflict drivers. She adds that program silos can have negative second and third order effects, further destabilizing the area they intended to pacify (Schirch 2013a, 14). If this is true, the way practitioners analyze the environment affects what they see in the environment and, consequently, their strategy development. Figure 1 demonstrates three divergent assessments on conflict causation in the Horn of Africa.

	Piracy in Horn of Africa	Afghanistan
Military Assessment	Caused by young men; conflict response means targeting these young men before they become pirates	Caused by insurgents; conflict response means building public support for Karzai regime to strengthen state institutions
Government Development Agencies' Assessment	Caused by unemployed men; conflict response means livelihood creation	Caused by unemployed men; conflict response means job creation programs
Local NGO/ University Assessment	Caused by lack of functioning governance, educational institutions creating an environment where young men have no other viable economic choices	Caused by ineffective governance and conflict between traditional and state governance and anger/humiliation of night raids; conflict response means stop supporting corrupt leaders, stop night raids by foreign forces

Figure 1. Horn of Africa, Conflict Assessment and Peacebuilding Planning

Source: Lisa Sirch, “Conflict Assessment and Peacebuilding Planning” (Presentation Slides, 19 May 2014), http://prezi.com/mq4jqgpouzww/conflict-assessment-peacebuilding-planning-1-hour-narrated,training/?utm_campaign=share&utm_medium=copy (accessed 19 May 2014).

To reduce irregularities amid collective action agencies, Schirch recommends collaborative analytical processes and “whole of society” interventions to influence long-term behavioral changes. She offers a Systems Approach to filter, synthesize, and prioritize “key drivers” or “mitigators” experiencing conflict (Schirch 2013, 7). Schirch advises practitioners to start with systems in close geographical proximity and work outward to reduce confusion. While her suggestions offer tools to help practitioners sort motivations, sources of power, and other key factors, I find that her Systems Thinking approach fails to account for variables such as feedback loops that can potentially alter an otherwise carefully well-planned resolution strategy (Schirch 2013, 6).

What is the significance of including feedback loops to analyze complex systems in the OE? The Berghof Research Center and the Berghof Foundation for Peace Support (BFPS) have been investigating the theory since 2005. Norbert Ropers analyzed Systemic Theory and the effectiveness these approaches had with regards to strategizing against conflict-riddled Sri Lanka. Ropers denotes that Systemic Theory highlights social and political aspects that would otherwise remain hidden. Through mapping reinforcing loops, Ropers concluded “how and when” conflicts became intractable and peace strategies ambivalent (Ropers 2008, 6-19).

The BFPS recommends mapping the systemic approach in four sections: (1) parties involved (2) issues at play; (3) historical dimensions; and (4) structural and contextual factors. BFPS adds the systemic approach must account for the parties’ understanding of the conflict and “their” desire for conflict resolution otherwise the practitioner inherently develops biases into planning (Ropers 2008, 8-19).

Proof of Concept

I argue that academic theories and concepts such as the ones presented by Schirch, Connolly, Parsons, and others, increase knowledge and enlighten professional understanding to deal with complexities in an area of operations. While the aforementioned academic sources use different language to describe Systems Thinking, the concept is consistent. Though Army doctrine does not address Systems Complexity theory in conjunction with a Systems Thinking approach, PME has informally implemented these concepts into the curriculum. For example, the Peter Checkland Soft Systems Methodology (SSM) modeling tool has been part of the US Army School of Advanced Military Studies (SAMS) at Ft. Leavenworth, Kansas.²⁰ Checkland and others developed the tool to analyze ill-defined, socio-cultural situations, which became difficult to decipher using traditional “hard system” approaches²¹ (Checkland 2000).

Managing Chaos and Complexity is another Systems Thinking academic effort being instructed at SAMS. Jamshid Gharajedaghi offers that the difference between chaos and complexity is determined through the concepts and language practitioners employ to

²⁰The seven-stage model includes the following steps: (1) identify the problem situation (structures, processes, climate, people, issues, conflicts); (2) express the problem situation (graphic); (3) formulate root definitions of relevant systems (CATWOE); (4) build conceptual models of human activity systems; (5) compare the models with the real world; (6) define changes that are desirable and feasible; and (7) take action to improve the real world situation. The mnemonic clients, actors, transformation, worldview, owner and environmental constraints (CATWOE) is used to develop a Systems Approach, as noted in steps three and four, and to analyze second and third order effects to people in relation to the system (Checkland 2000).

²¹The hard system approach focuses on determining cause and effect for engineered systems with the intent of developing “transferrable” models that could apply to similar environments (Checkland 2000, S48-S49).

understand sociocultural systems²² (Gharajedaghi 2005, 25). Gharajedaghi posits that although uncontrollable system behavior is predictable, by managing the environment, a practitioner can impose greater influence on actors controlling the system. Based on circular logic and delayed reaction, removing the cause, he claims, will not necessarily remove the effect. Hence, practitioners must identify problem root causes before they can influence actors controlling the system. He urges that identifying root causes requires practitioners to understand the difference between information (what), knowledge (how), and causality—the (why)—in terms of rationality, emotion, and cultural choice (Gharajedaghi 2005).

At the US Army War College, Colonel George Reed claims that a linear scientific approach of “individually studying components to identify cause and effect relationships to make the problem more manageable is no longer practicable” (Reed 2006, 10). Social sciences and the military adopted the linear approach decades ago and while the sciences moved towards system contextualization, he argues, the military remains fixed on reductionist approaches. Reed refers to the Army’s position as “displacement,” describing its inability to adapt to new approaches, and warns the senior military audience to avoid such thinking²³ (Reed 2006, 11).

²²Gharajedaghi separates a “system” into three operational sections: the environment, open system, and the system boundary. Open systems involve participating actors who control and can assert influence over systems. The environment houses “closed variables” which interact with, and have an effect on open systems; however, the latter have no effect on their behavior. The space between the two entities refers to the system boundary (Gharajedaghi 2005, 30).

²³Colonel Reed uses the concept displacement in the following context “when a venerated system or process has outlived its usefulness or when it is operating as designed, but against the overall purpose for which the organization was established” (Reed 2006, 11).

At CGSC, Colonel Celestino Perez has instructed and published on the subject of Systems Thinking and Complexity Theory. He notes that “thinking in terms of systems and subsystems also means attempting to map the relationships between the various actors, institutions, and structures to discern tensions, flows, and feedback loops” (Perez 2014).²⁴ While one may question the difficulty of revamping PME instruction to one inclusive of socio-political dynamics, CGSC, SAMS, and the War College provide proof of concept that these concepts can be implemented in PME.

Conclusion

Chapter 2 used lessons learned from the last ten years of military conflict coupled with senior leader guidance to determine requirements for the military profession with regards to the operational environment. I derived three major requirements from this analysis: (1) military professionals fail to understand the complexities of the OE, (2) tools military professionals use to understand the environment do not provide clarity and knowledge to gain a granular level understanding of the OE, and (3) military professionals must account for socio-political factors in training, planning, and executions. Using these notes, this study then reviewed joint and Army doctrine to identify existing gaps.

The doctrine analysis included publications covering a full range of military operations from stability to offensive and defensive operations. This section finds three ongoing themes and three major gaps with current approaches. While Joint Operational

²⁴Perez leads the Local Dynamics of War seminar at CGSC, in which he forces practitioners to redirect attention away from linear approaches and instead focus on the various interrelated factors that make up a system.

Design and Army Design Methodology encourage a Systems Thinking approach, these are presented in an awkward and confusing manner. Consequently, doctrine professes an “Army version” of Systems Thinking but fails to provide clear guidance on how to implement it. Likewise, joint and Army publications suggest Systems Thinking should only be used at the operational and strategic levels, when the approach benefits planning at all levels of war.

In addition, the analytical tools recommended in doctrine present three major shortcomings: (1) current linear approaches inherently separate interactions and do not explain relationships between mission and operational variables; (2) stakeholder agency, behavioral, and causal logics are masked when variables are separated into lists and categories; and (3) cause and effect theories resulting from a static framework are inaccurately misleading and overlook aspects of uncertainty by assuming variables in the environment “always” remain constant. Shifting of one or two variables invalidates plans developed under the cause and effect premise. Furthermore, these approaches do not account for second and third order effects resulting from military action.

After analyzing the various perspectives in this chapter, this study recommends a Systems Thinking method of analysis that includes: (1) a snapshot as an approach to initiate analysis, (2) analysis of connections, relationships and interactions of the whole and the parts of a given system over time and space, (3) description of the results from step two into a “narrative” describing causal claims, and (4) feedback mechanisms to identify emergent patterns of action and behavior. These concepts will be central to the analysis in chapter 3. Chapter 4 uses a case study from the Salvadorian Civil War to

demonstrate the functionality of the proposed method of analysis. A list of findings and implications coupled with recommendations concludes the study in chapter 5.

CHAPTER 3

RESEARCH METHODOLOGY

This thesis progresses in four chapters using a qualitative research method to analyze the functionality of current processes practitioners use to understand the OE. In chapter 1, this study reviewed senior leader directives and published lessons learned. Analysis from this chapter reveals that over the last decade military professionals have struggled with understanding and accounting for the socio-political factors existing in the environment.

Chapter 1 analyzed design methodology, but more specifically the processes military doctrine and training circulars recommend for practitioners to obtain knowledge and understanding systems in the OE. This study reviewed JIPOE, IPB, PMESII, and ASCOPE frameworks. Findings demonstrate three major shortcomings in the current processes: (1) linear approaches recommended in doctrine inherently obscure interactions, connections, and relationships between systems (the whole and its parts); (2) causal explanations, and driving factors influencing stakeholder behavior are hidden when systems are separated into categories, thus making it difficult for practitioners to understand the OE; and (3) linear cause and effect theories do not work for complex socio-political environments.

Using these three points, I then reviewed academic publications to identify suitable concepts to bridge the gap. This section provides a summary of academic presentations on Systems Thinking and Complexity Theory concepts. For example, in *The Fragility of Things*, William Connolly provides an explanation of systems as organisms operating in spatiotemporal and self-evolutionary capacities. Whilst deployed,

practitioners are required to analyze existing conditions as part of understanding the operational environment. Connolly's methodology is useful in identifying the organization process of human life that practitioners must account for in plans and operations.

First, I provide an introduction to Craig Parsons's four typologies of explanation (structural, institutional, ideational, and psychological). These four typologies become the basis for behavior attribution in chapter 4. Lastly, I test Eric Dent's crisis of perception, and Robert Jervis and Lisa Schirch's theories on linear cause and effect, to illustrate the importance of including feedback mechanisms in planning and assessments.

In light of the findings in chapter 2, this study does not propose a pre-ordained framework, in light of the discriminatory processes these may engender. Instead, the study proposes a method of analysis that uses Systems Thinking and Complexity Theory to analyze the OE. This method of analysis should include: (1) snapshot in time, (2) system connections, interactions, and relationships with the whole and its parts over space and time, (3) a system's narrative (causal story), and (4) feedback loops to analyze changes in the system. Through this process practitioners can gain clarity and knowledge on the "conditions, circumstances and influences" that affect the employment of capabilities" (Department of the Army 2012i, 2). Chapter 4 demonstrates the method of analysis using data collected from a case study from the Salvadorian civil war in 1981.

I start the case study with step 1, describing a "snapshot in time," based on Connolly's concept of 'durational time.'²⁵ The intent with this approach is to "freeze" the

²⁵Connolly explains durational time this way: "we find ourselves plunged into a moment of time without movement, engaging different zones of temporality coursing

event and analyze the current condition, like a detective would process evidence contained in a scene.²⁶ This process allows practitioners to do four things: (1) to analyze the narratives people followed over time, (2) remove unrelated events that would otherwise overwhelm the analysis process, (3) identify root causes driving behavior, and (4) start building the system's narrative through identification of causal claims.

Once the anchor point (snapshot in time) was determined, I began to collect and process data. The data included academic works and military reporting on events, actions, activities, relationships, and connections. Systems in the case study were separated in four groups using Parsons's four logics of explanation. Through this process, I was able to discern motivating factors, root problems, and develop the narrative systems professed leading to the event. With this information, I could assess the root causes inhibiting progress.

The civil war period in El Salvador was selected as a case study for four reasons: (1) The conflict in El Salvador served as a test bed for a refurbished Vietnam-counterinsurgency strategy focused on advancing democratic processes, rebuilding the Army, and creating stability; (2) challenges facing the U.S. military strategy in 1981 resemble challenges U.S. forces faced in OIF and OEF conflicts; (3) at this time, El Salvador was the biggest recipient of aid in the western hemisphere since the cold war;

through and over us. For that scene arrests multiple sites and speeds of mobility that impinge upon one another when in motion" (Connolly 2011a, 2-3).

²⁶For the purposes of the case study, an event is analyzed insofar as "it happens rather rapidly; it throws some regular institutions and role definitions into turmoil or disarray; its antecedents often seem insufficient to explain its emergence and amplifications; its settlement, when under way, is uncertain; and it makes a real difference" as it relates to the case (Connolly 2011a, 4).

and (4) the situation in El Salvador presents sociopolitical issues that afflict environments within which military operations occur now and may occur in the future. The massacre in *El Mozote* was selected for two reasons: (1) the *Atlacatl* battalion was the first American trained battalion for the purposes of employing the counterinsurgency strategy; and, (2) a case with local level dynamics would prove useful to test the functionality of the method of analysis in terms of understanding macro and micro level intricacies.

The Challenges

Criteria for analysis

1. Does the recommended method of analysis enhance understanding of the environment with respect to understanding conditions, influences, and circumstances?
2. Does the recommended method enhance understanding of complex socio-political environments?
3. Does the way one sees the environment affect the tool one selects to implement a strategy? If so, does understanding of the OE affect mission success?
4. Dent's crisis of perception, coupled with Jervis's and Schirch's theories on linear cause and effect, are provided to illustrate the importance of including feedback mechanisms in planning and assessments.

CHAPTER 4

ANALYSIS

What made the *Morazán* massacre stories so threatening was that they repudiated the fundamental moral claim that undergirded US policy. They suggested that what the United States was supporting in Central America was not democracy but repression. They therefore threatened to shift the political debate from means to ends, from how best to combat the supposed Communist threat—send US troops or merely US aid?—to why the United States was backing state terrorism in the first place.

— Mark Hertsgaard, *On Bended Knee*

This chapter analyzes the contentious *Mozote* Massacre by U.S. trained Salvadorian operatives during the civil war in 1981. Using Systems Thinking that includes an anchor point (a snapshot in time), logics of explanation, narratives, and feedback mechanisms, this study aims to describe how practitioners can gain knowledge about the OE, in terms of conditions, influences, and circumstances which affect the conduct of operations.

Chapter 4 is organized in four sections. The first section provides a historical account of the Salvadorian civil war beginning with the Peasant Revolution of 1932, a pivotal event in Salvadorian history. The focus of this section is on clarifying system organization, relationships, and interactions at key events leading to the civil war before the massacre in *El Mozote* occurred. The second section (a snapshot in time) describes systems interacting, connecting and their relationships in conjunction with the event (the massacre) in *El Mozote* in the state of *Morazán*. Section three explains system narratives using Parsons four logics of explanation (structural, ideational, institutional, and psychological). Lastly, the study reviews U.S. policy (economic and military) to

determine, (1) its effectiveness in judging system narratives, and (2) to determine its effectiveness in reducing conflict and creating stability. The aim of this section is to test Dent's crisis of perception theory, and Jervis's and Schirch's theories concerning linear cause and effect strategies.

Historical Overview- El Salvador Civil War

El Salvador is located in Central America wedged between Honduras, Guatemala, and Nicaragua. Two mountain and volcanic ranges divide the country's 8,124 square kilometers into two distinct cultures of farmworkers and city dwellers (U.S. Central Intelligence Agency 2014). A strict caste system further demarcates the populace into two categories; the fourteen elite families known as "*los Catorce*" controlling fifty percent of the wealth and sixty percent of the land, and the working class²⁷ (LeoGrande and Robbins 1980). Tired of inequality and landowner oppression, peasants led by Farabundo Marti caused a momentous jolt to the Salvadorian system in 1932.

Two major consequences resulted from the peasant revolt against *Los Catorce* in 1932. First, an alliance formed between "*los Catorce*," chief military officers, and the military political wing, the Revolutionary Party of Democratic Unity (PRUD)--later known as the PCN. Second, inspired by the death of thirty thousand peasants and its leader Farabundo Marti, civil action leaders would form the umbrella revolutionary group, the Farabundo Marti Liberation Front (LeoGrande and Robbins 1980).

A power struggle between political systems in the environment brewed for the next forty years until the "Football war" with neighbor Honduras brought to light

²⁷Los Catorce--the term is referred to denote the original fourteen wealthy families who controlled a majority of the land and resources in El Salvador.

unresolved contentions.²⁸ Issues including economic inequality, land disputes, and refugee reforms that had been boiling beneath the surface become the center of attention for politicians vying for power. While political rivalries publicly criticized PCN directives, a leftist political movement was gaining clout among the oppressed peasant population. Political groups collided again in during the 1972 election. Aggravating an already contentious political environment, PCN illegitimately removed and stole the 1972 election from the opposition, the Christian Democratic Party (PDC).²⁹ This jolt caused systems to disburse, self-organize, merge, or create other systems, which became key actors during the civil war.

After the 1972 election, fragments of the PDC conspired to commit a coup with Army “progressives” to overthrow the regime.³⁰ Although the coup failed, it led the PDC to realize that arms were necessary to defeat government forces. Accordingly, the PDC formed a relationship with a guerrilla group known as the Revolutionary Army of the People (ERP).³¹ Inspired by communist sentiment, student unions and Catholic

²⁸“In 1969 Honduras fought the so-called "Football War... A series of football matches between the two countries inflamed nationalist feelings on both sides, but at the root of the dispute was a disputed border area and the emigration of around 300,000 Salvadorans to Honduras in search of land and employment” (Jane’s Sentinel 2014).

²⁹Although El Salvador employed open elections, the military’s control of ballot boxes ensured the elite and their own military political party, the Revolutionary Party of Democratic Unity (PRUD) retained “perpetual electoral victory.” Although, the party later changed its name to the Party of National Conciliation (PCN), it retained ties with *los Catorce* (LeoGrande and Robbins 1980).

³⁰Progressives were young Army initiatives which opposed the mainstream military regime.

³¹The ERP becomes the PDCs permanent military wing. The group later changes its name to the Armed Forces of National Resistance (FARN) (LeoGrande and Robbins 1980).

organizations collaborated with peasant communities in the formation of various liberation and activist groups who would align under the FMLN umbrella.

Fearing usurpation from the opposition, most of *Los Catorce*, who fled to the United States, sponsored paramilitary groups known as *Los Escuadrones de la Muerte* (death squads) to eradicate the opposition and its support base³² (LeoGrande and Robbins 1980).

A Snapshot in Time

El Mozote

For decades, unbeknownst to the rest of the world, the Salvadorian populace suffered human rights violations amidst government-sanctioned paramilitary groups and the opposition. However, in 1981, Rufina Amaya, a thirty-year old female peasant, caught the attention of the American media with her story, bringing the miniscule country to the forefront of media and political forums around world. Her story starts in *El Mozote*, a rural community near the Honduran border in the state of *Morazan*, approximately sixty miles from the Salvadorian capital.

Under the perception that Russia and Cuba were instituting a communist “take-over” in Central America, the U.S. enacted a priority list to remove communist support to Nicaragua, El Salvador, Honduras, and Guatemala. To that extent, the Salvadorian Army

³²After the war, United Nations human rights reports attributed 85 percent of tortures and killings against the civilian populace to government-sanctioned groups such as, *Los Escuadrones*, while only five percent of the cases were attributed to FMLN guerrilla operatives (Arnson 1993, 4).

became the recipient of training, and a logistics package to eradicate FMLN operatives and Sandinista-backed networks as part of a U.S. counterinsurgency strategy.³³

The *Atlacatl* battalion, from now on referred to as *Atlacatl*, was a U.S. trained elite counterinsurgency unit responsible for targeting and eradicating FMLN strongholds and red support zones in *Morazán* as part of *Operation Rescue*.³⁴ *Atlacatl* in conjunction with the Salvadorian Air Force, carried out a bombardment campaign against FMLN strongholds that lasted a few days. Finally, on 8 December, *Atlacatl* began the three-day land operative. Amaya recalls the soldiers entering *El Mozote* and placing residents on the ground while being questioned on the whereabouts of guerrilla operations. Unhappy with their responses, Army commanders placed residents on “house arrest” (Danner 1994, 65).

Hours later, in the veil of darkness, hundreds of residents would line up for hours in the plaza center. Residents were segregated in groups by gender and age, and placed in different control points for further questioning. Dissatisfied with the information the women presented, Army soldiers focused their efforts towards the men. Amaya recalls seeing blindfolded men marching out from the hamlet’s church, being shot, and decapitated just steps from where the women and children were held. Returning to the women’s house, soldiers removed groups of young women, leaving mothers and children

³³The Sandinistas in Nicaragua were a revolutionary group committed to socialism and to the overthrow of the Somoza family. (Britannica 2013)

³⁴Red Zones- geographic locations noted as well-known guerrilla support and operating bases. Operation Rescue had multiple names, such as Operation Hammer and Anvil and Operation Scorched Land (Danner 1994).

wailing inside the house, as soldiers beat, raped and massacred pre-pubescent girls along the hillside.

Amaya recalls noting a period of temporary silence amidst the chaos. Witnesses, clarified “the silent episode” as a meeting between key military leaders; Colonel Jaime Ernesto Flores Grijalba, Lieutenant Colonel Domingo Monterrosa, and other company Captains to discuss operative particulars (Danner 1994, 72). After the women were killed, arguments ensued among the soldiers over the fate of the children. One soldier would later admit they had no choice in the matter, as they were under pressure to eliminate residents by senior leadership. “We [soldiers] have to finish everyone . . . that’s the colonel’s orders. This is an *operativo de tierra arrasada* here--a scorched--earth operation-- and we have to kill the kids as well or we’ll get it ourselves” (Danner 1994, 74-75). Amaya would confirm the soldier’s statement in a witness statement, noting that soldiers stabbed, choked and hung young children while older children were killed by a firing squad inside the sacristy. Once the children were gone, Amaya recalls, soldiers went about slaughtering animals, and finally burning houses in the hamlet to ensure no living survivors remained (Danner 1994, 75).

However, since *Atlacatl* was unfamiliar with the terrain, local guides were required to lead the mountaineering effort through the hamlets in Morazán during Operation Rescue. Human rights groups would use the guides and other witness accounts to piece together the brutality that occurred in *El Mozote* and surrounding areas that had experienced a similar fate.³⁵ Days after *Atlacatl* left *El Mozote*, the ERP broadcasted their

³⁵Five companies of approximately four thousand U.S.-trained soldiers conducted the Operation Rescue in the state of Morazán. The operation commonly referred to

findings to FMLN's higher command and invited western journalists to document the area. Reporting on *El Mozote* highlighting the U.S. trained *Atlacatl* battalion sparked controversy over American aid to El Salvador.

Logics and Narratives

While the following narratives may present segments of multiple logics of explanation at play, this study focuses on analyzing the principal claim as actors involved in *El Mozote* displayed and conveyed it to others. Through this analysis, the study aims to explicate root causes that motivated stakeholders to take certain actions leading to and after the massacre in El Mozote to get a better understanding of why events occurred. The intent is then to explore causality, build a narrative, identify potential points for intervention, and determine potential second and third order effects.

Structural Claims

El Mozote Residents

Given Parsons's argument that "rational choice is a necessary component of structural explanation . . . people choose their actions as a direct function of things that are at least treated as material resources and constraints" (Parsons 2007, 54). Using this definition, this study argues that El Mozote resident's actions and behavior leading to the event were guided by structural logics.

scorched land aimed to exterminate FMLN operatives and support bases in Northern Morazan (affected towns include: *La Arambala*, *La Cruz*, *El Chingo*, *El Pinalito*, *Los Toriles*, *La Guacamaya*, *La Joya*). Although the number of dead varies by report, the *Atlacatl* battalion massacred approximately a thousand civilians as part of the operation (Danner 1994, 45-61).

El Mozote residents saw injustice and poverty as a function of their given position established by *Los Catorce* and the Salvadorian government. Settlements in the outskirts of the county relocated there for three reasons: (1) displacement and government relocation reform—*El Mozote* lots were inherited or government-owned; (2) limited farming opportunities in other areas; and (3) increasingly government-sanctioned attacks against civilians causing a migration to *El Mozote* and into neighboring Honduras.

While *El Mozote* was located in the outskirts of known red zones and a few miles from the guerrilla's radio station *Veceremos*, residents did not support FMLN operatives. Although *El Mozote* residents experienced government oppression, they feared Army retaliation should they support the insurgency. The Army and National Guard regularly patrolled *El Mozote* and neighboring hamlets, to purchase food or restock supplies from local vendors. Aware of this fact, FMLN operatives avoided military patrolled hamlets. Additionally, Mr. Marcos Diaz, *El Mozote*'s de facto mayor received warning about Operation Rescue from a military contact. Assured that no harm would come to the families, instead of flocking to Honduras as was the case in similar hamlets, Diaz convinced *El Mozote* residents to remain in their homes. Furthermore, heeding Diaz's advice, large migrations from nearing hamlets arrived to *El Mozote* seeking shelter³⁶ (Danner 1994, 65).

Ideational

The crisis that developed in El Salvador by the late 1970s had a variety of causes, all of which appear to have been necessary for social revolution to arise at that time . . . the strategies of revolutionary groups--opting for armed conflict with the

³⁶This account explains the increased body count human rights groups would find at the excavation site following the massacre in *El Mozote*.

regime; combining military actions and mass political organizing; and placing a major emphasis on mobilizing peasant support . . . contributed equally to the crisis of the late 1970s. (Byrne 1996)

Parsons describes ideational claims as practices, norms, or symbols that affect behavior. Furthermore, ideational claims demonstrate that “the proximate causal role of preexisting ideational elements do not just reduce to other immediate conditions, but focuses on conditions just prior to the action” (Parsons 2007, 112-113). This study argues that FMLN, FMLN supporters, the Catholic Church, and the media demonstrated a conduct that reflected pre-existing elements of culture, ideas, and norms driving their behavior leading to, during, and after *El Mozote*.

Reporting indicates that a combination of structural (Salvadorian oligarchy) and institutional uncertainty (political instability) gave range to various interpretations among the Salvadorian populace. While certain groups, including *El Mozote* residents, rejected revolutionary and religious activist ideology for fear of government retaliation, the following groups could not conceive a different alternative to achieve stated goals. As noted in the narratives, the following factions displayed and shared affective views including special vocabulary of values, norms, and cultural preferences. Consequently, the way in which these factions perceived ideational elements directly affected their actions and behavior.

Farabundo Marti Liberation Front

Farabundo Marti was the son of a peasant farmer whose land was repossessed by coffee barons in the early 1900s. Motivated by communist literature during his early college years, Marti sought likeminded groups to mobilize a peasant union against the oppressing ruling class. His demise during the 1932 peasant revolution catapulted Marti

to martyrdom status, making him the face of the revolutionary movement known as the FMLN. The group would also cling to the assassination of prominent Catholic figure and human rights activist Archbishop Oscar Romero as another example of government-sanctioned brutality, leveraging the event for a recruitment campaign.³⁷

Since its inception, FMLN used language such as companions, partners, and protectors to communicate a sense of “peoplehood” among its following. The word “struggle” became a rallying cry and a symbol among university students, religious activists, and the oppressed peasantry. After the war started, the guerrilla became a clan to many children and youth who found themselves orphaned or homeless following government-sanctioned operatives like Operation Scorched Land and Operation Rescue. Furthermore, continued government targeting of the civilian population, particularly in the rural areas where FMLN roots germinated, increased support for guerrilla groups and operatives.

In *Morazán*, the People’s Revolutionary Army (ERP), one of five groups under the FMLN hierarchy controlled and managed guerrilla operatives near the hamlets. One of these operatives was Radio *Venceremos*, which played a significant part in the FMLN’s propaganda and psychological campaign against the Salvadorian government. The network’s daily broadcast focused on highlighting key Army operatives, government atrocities, American-sponsored events, and guerrilla civic support to transform peasant consciousness like Marti had done decades before. Similar to FMLN umbrella group, the

³⁷Romero outspokenly denounced government-sanctioned attacks against the Salvadorian civilian population and continuously used his sermons to persuade military members to disobey those orders. Investigators assessed the government-sanctioned death squad was responsible for Romero’s death and the shooting killing hundreds of mourners at his wake.

ERP reinforced an “us versus them” mentality in their broadcasts to justify brutality against Americans and other institutions aiding the Salvadorian government.

FMLN Supporters

While the ERP did not look to *El Mozote* for recruits, it is important to note that the anti-guerrilla sentiment among remaining survivors in the hamlets changed after Operation Rescue. Tired of the desecration in *Morazán* and after years of brutality at the hands of the government, survivors declared support to the ERP for four reasons: (1) to seek protection from military attacks; (2) to avenge the killing of relatives; or (3) to gain a sense of belonging that they otherwise could not attain based on their place in society (Wood 2003). Elisabeth Wood argues that the “Salvadorian conflict was not one in which ethnic cleavages or identities were salient but one fueled by economic and political exclusion” (Wood 2003, 15).

Wood denotes individuals weighted the decision to support the FMLN in terms of a cost and benefit analysis which shifted throughout the war. As violence and targeting against civilian activists increased in 1980 and 1983, civilians were compelled to seek more violent approaches to protect their interests. During the same period, the use of GOES-sponsored death squads against a civilian population inadvertently “reinforced the insurgent effort” (Wood 2003, 17). Between 1984 and 1990, rent-seeking agents “bandwagoned” with FMLN political groups creating cooperatives, which would later serve as the BATNA for negotiations during peace talks in 1990 and 1992³⁸ (Wood 2003,17-20).

³⁸BATNA- Best Alternative to a negotiated agreement. The term is used to denote the terms cooperatives ascribed in case negotiations with the government failed. Terms

Religious organizations

The battle between the Salvadorian Army and the Catholic church started early in the 1970s, but conflict ignited again when a government-sanctioned group called the *Union Guerrera Blanca* (White Warrior Union) released a death warrant to the Jesuit population in El Salvador under the pretense that the latter was implanting a socialist ideology (Byrne 1996, 45). The message urged Jesuits to leave the country or accept becoming military targets. The contentious relationship between the government and the clergy continued through the years as the latter experienced firsthand the atrocities military members committed near their parishes, and consequently divulged findings during sermons to dissuade support for the government.

Works like “*Death and the Hope for Life*,” written by a Jesuit priest after Romero’s death, highlighted “that all life in El Salvador is characterized by either death or the hope for life . . . the church [Catholic parishes] has now incarnated herself in this world of death.” Motivated by Archbishop Romero, the Jesuit stated that he was glad to see that clergy shed their blood alongside the poor who they claim to support (Byrne 1996, 152). Using language and symbolism to which followers could relate, the church normalized an ideation of revolt against government-sanctioned oppression, human rights violations, and inequality.

Institutional

Institutional claims document how man-made conditions, constrain or incentivize the behavior of individuals at the time of action. This typology then claims that although

included disbursal of land and other assets among FMLN supporters at both the macro and micro level.

people invoke objective rationality, behavior is assessed from previously determined man-made conditions. In the following examples, actors created organizations, rules, and other conventions amid structural ambiguity or unpredictability and remained on a path dependence “strategy” despite empirical evidence suggesting sub-optimal results.

Government of El Salvador (GOES)

El Salvadorian politics during the 1980s were becoming increasingly polarized. To one side stood the FMLN political group joined by disenfranchised activists, and to the other side, *Los Catorce*, holding on to a volatile relationship with the Army Officer Corps. In the 1970s, Wood notes, “the long standing oligarchic alliance of the economic elite and the military led to a highly unequal society in which the great majority of Salvadoran [sic] were excluded from all but the most meager life opportunities,” thus leading to what she refers to a “struggle of classes” that exacerbated existing micro-level cleavages (Wood 2003, 11).

GOES, had encountered coup attempts in 1960 and in 1979, and by 1980, endorsed the Army’s use of increasingly violent measures against “progressives” and other opponent groups. Under the threat of growing opposition, the then military government led by Major Roberto D’Aubuisson, enacted structures to support a “dirty war” policy against the left. D’Aubuisson, in cooperation with civilian intelligence networks and vigilante organizations, developed the framework for what became an independent targeting apparatus (Byrne 1996, 57). Using language and symbolism that justified violence against both Salvadorian and foreign civilian entities, D’Aubuisson and his supporters provided an illusion of validity for similar groups to flourish in the future.

The apparatus, funded by *Los Catorce* and other elites, was integrated at various levels within the “security forces, the national guard, the treasury police, national policy-- as well as in the intelligence sections of Army units” for the purposes of developing target lists and executing targets³⁹ (Byrne 1996, 58). While these institutions were directed by GOES, their intelligence and targeting mechanisms were subject to bribery and often used as “assassins for hire” by wealthy agents and military officers (Danner 1994, 25-26). While Atlacatl received military training and funding through the U.S. counterinsurgency strategy, Army recruits were poorly equipped and ill prepared. Consequently, Army officers were subject to bribery, stealing, and other illicit activities.

Similarly, *Atlacatl* and other Army units of the time adopted brutal counterinsurgency tactics which indiscriminately targeted civilians in their areas of operations. Given the aversion for the opposition and the disregard placed on human life by these groups, it was not a revelation for GOES to deny wrongdoing in *El Mozote* and surrounding hamlets. Initial GOES reporting denounced human rights groups and other reporting accusing *Atlacatl* of targeting minor children. The Provisional President, Jose Napoleon Duarte, denied the accusations, stating the incident “was a guerrilla trick meant to smear his government at the very moment when U.S. Congress was considering aid to the El Salvador⁴⁰ (Danner 1994, 89).

³⁹Groups under this apparatus included: the Union of White Warriors; the *Atlacatl* battalion; and the Maximiliano Hernandez Martinez Brigade, which carried out the assassination of Archbishop Romero, and over a thousand political killings a month (Wood 2003, 26)

⁴⁰President Ronald Reagan had recently signed a certification for congress, acknowledging that the GOES “was making a concerted and significant effort to comply with internationally recognized human rights” (Danner 1994, 90).

Similarly, the media employed ethically constitutive stories that included justifications supporting the Army's themes.⁴¹ For Example, a speech that propagated through various media outlets in which GOES noted that the operatives targeted FMLN guerrillas not the civilian population. If children died in crossfire, it only reinstated the FMLN's ill-use of children in their operatives⁴² (Rosenstiel and Mitchell, 2013).

Following this statement, *La Prensa Grafica*, one of the country's leading newspapers was the only media to report details about Operation Rescue. The newspaper reported that Colonel Jaime Ernesto Flores, Commander of the Third Infantry Brigade in San Miguel, along with *Atlacatl's* Battalion Commander, Colonel Monterrosa, participated in Operation Rescue. The newspaper noted that 175 guerrilla and 12 soldiers perished, but omitted any civilian casualties from the report. Instead, the paper warned anyone from approaching red zones or risk targeting by GOES forces (Americas Watch 1992).

Salvadorian Army—A *Tanda* of Warriors

The Salvadorian Army, and thereby the officer corps, followed strict awards and promotion systems that were institutionalized long before the civil war started. These institutions revolved on allegiance and had little to do with capability. Danner describes

⁴¹It is important to note that during this time, the Salvadorian media served as a GOES information tool propagating interests and values of its core constituents-- the elite and the Army Officer Corps. This study uses Roger Smith's description of ethically constituted stories in this regard, "[E]thically constitutive stories, then, are more likely to be "religious or quasi-religious, kinship-like, and gendered than economic or political power stories (Smith 2003, 69).

⁴²It is important to note that the Salvadorian Army drafted children to grow its formation.

that by “showing unstinting loyalty to the ‘institution’ and, above all, to one’s military academy class- one’s *tanda*, as it was called . . . these men would be promoted together, would become rich together, and would gradually gain power together” (Danner 1994, 23). If out of the *tanda*, some deviated to immoral and illegal paths throughout their career, the *tanda* would safeguard the officer, insofar as he remained loyal to the group. Furthermore, candidates for key positions in government, to include the presidency, were nominated from the *tanda*. Two consequences resulted from the *tanda* institution, officers pursued divergent agendas, and it perpetuated corruption and violence without fear of retribution.

Although Atlacatl trained under a U.S. counterinsurgency strategy, personal agendas often trumped strategic goals and objectives. Whilst the Minister of Defense ordered Monterrosa to “wrest the offensive from the FMLN,” his Vice-Minister, who like Domingo was obsessed with eliminating the FMLN radio station, ordered *Atlacatl* to “advance no matter what the cost until we [*Atlacatl*] reach the command post and *Radio Venceremos*” (Danner 1994, 21). Although officers disliked *Radio Venceremos*’ mockery against the Army and the government, Monterrosa took it as a personal mission. He set *Atlacatl* on a path-dependent road to find and destroy the radio station at any cost.⁴³

In the same way, personal agendas surfaced amid Death Squad leaders. Each Death Squad unit contained an intelligence and security capability responsible with vetting targets, however, unit goals and objectives varied by Command. Danner explains that, “as the repression went on, month after month, it became less and less

⁴³Atlacatl unit theme song reflecting the unit’s “kill the seed” mentality--“*Somos guerreros*: (We are warriors) We are warriors!, warriors all!, we are going forth to kill a mountain of terrorists!” (Danner 1994, 50).

discriminating . . . ‘by the end, the killing basically outrun the intelligence capability of the Army and the security services, and they [the death squads] began killing according to very crude profiles’” (Danner 1994, 27).

This “kill the seed” mentality, to which many senior officers in Monterrosa’s *tanda* adhered, invoked Martinez’s “*matanza*” strategy and the success this had five decades later. Danner notes, “when the infection [the opposition] raged once again in Salvador, those areas where the killing had been rampant five decades before remained remarkably quiescent,” and Atlacatl Commanders hoped to achieve similar results often deviating from U.S. strategy (Danner 1994, 26).

Weaknesses in the judicial system coupled with the corruptive *tanda* system allowed top military leaders to deviate strategy and commit atrocities without fear of retribution. Monterrosa, who placed fourth in his *tanda* of nineteen, was selected to lead the *Atlacatl* battalion in the counterinsurgency process. Years later during an interview, an ERP commander would attest this about Monterrosa, “[H]e executed the massacres not only because it was part of his military training and it was tactically approved by the High Command but also because he didn’t think it would become a political problem.” Lucia Annunziante, a war journalist, seconded the guerrilla commander by saying, “[H]e was not bloodthirsty, but he was so neurotically driven—he wanted all costs to win the war . . . And he [Monterrosa] understood that you do this as cruelly, as brutally as possible; you rape, impale, whatever, to show the cost” (Danner 1994, 145-146). For his efforts, Monterrosa was promoted to Commander of the Third Brigade replacing Flores.

Psychological

Not to be confused with irrational behavior, psychological claims state that people are hard-wired to use mental shortcuts to take certain actions. Parsons argues that in order for psychological claims to withstand, “instinctual motivation, affective attachment, or probabilistic causal pressure on action” must be evident in the subject’s behavior (Parsons 2007, 160-161). Kurt Weyland points out that “reliance on cognitive shortcuts is particularly pronounced under conditions of profound uncertainty . . . flooded with contradictory news about fast-changing events, they cannot ascertain its reliability and engage in systematic information gathering and deliberate decision-making” (Weyland 2012, 921). In this study, I argue that U.S. institutions (military and diplomatic efforts) heavily relied on set strategies, and used them as mental shortcuts causing them to react in systematic ways.

U.S. Diplomacy

Fearing a communist take-over in Central America, and considering that public support for the standing pro-American Salvadorian government was fading, Washington authorized an emergency package to El Salvador. According to the U.S. General Accounting Office, the U.S. government provided “\$3.5 billion of military and economic assistance to El Salvador in the 1980’s” (U.S. General Accounting Office 1990, 2). The same report notes, U.S. government military and economic institutions, set systemic processes to deal with problems other Central American countries experienced at the time. In Guatemala, U.S. institutions (military and economic) maintained a contentious relationship with the Guatemalan government, as the latter continuously violated human rights agreements in their attempts to remove the communist threat (U.S. General

Accounting Office 1990, 66). In neighboring Nicaragua, CIA operatives supported *Contras* rebel groups to defeat the Sandinista revolutionary movement and deny weapons trafficking from reaching *Morazán* and other Salvadorian states (Simpson 1995, 76-77).

However, in El Salvador, corruption was deeply entrenched in government and military branches, and the U.S. strategy failed to make progress during the early years as a result. Continued human rights violations and instability in El Salvador concerned Washington. Christopher Simpson writes that there was a distinct incongruence between Washington's public releases and discussions behind closed doors. Simpson notes U.S. President Ronald Reagan was under pressure to ensure aid provided to El Salvador squelched the communist threat and avoided the human rights scandal surrounding the Salvadorian government (Simpson 1995, 231). In May 1982, the U.S. government released NSDD 37 and 37A on Cuba and Central America. The declassified document denoted constant disagreement between the White House and Congress on aid packages provided to the GOES.

Nonetheless, institutions remained in place and aid to El Salvador continued as part of a U.S. counterinsurgency strategy through the duration of the civil war. By not enforcing Salvadorians to produce efficient, accountable, and sustainable institutions, the U.S. government perpetuated perverse incentives through its cold war policies. The lack of accountability from higher government echelons in Washington seeped to the institutions actively monitoring aid on the ground.

Danner writes that the American envoy responsible for the massacre investigation never set foot in *El Mozote*. Instead, Assistant Secretary of State Thomas Enders quoted GOES statements, dismissing the incident as FMLN propaganda. At a Senate Foreign

Affairs Subcommittee and House Appropriations Subcommittee hearing, Enders testified a week after American journalists broadcasted the story, “there is no evidence to confirm that government forces systematically massacred civilians in the operations zone” (Danner 1994, 111).

Howard Lane, a public-affairs officer, noted that probably “with the exception of the White House, ‘there was no secret about who was doing the killing’ . . . In public, the fiction was resolutely maintained that the identity of the killers was a mystery- that the corpses were the work of ‘rightist vigilantes.’ This campaign of lies was designed to accommodate the squeamishness of the Administration in Washington” (Danner 1994, 28).

After *El Mozote*, Washington continued to support the Salvadorian government despite empirical evidence demonstrating a lack of initiative in improving human conditions. Americas Watch reported that Washington’s “denial or willful ignorance of human rights abuses during the 1980s reflected a structural flaw in administration policy. The Reagan administration believed that, by increasing U.S. training and equipping of the Salvadoran armed forces and by encouraging elections, the FMLN guerrillas could be defeated militarily and politically” (Americas Watch 1992, 3) The counterinsurgency strategy focused on rebuilding the military capability just as the military had done years before in Vietnam, in Guatemala, and Nicaragua.

Path Dependence in the U.S. Counterinsurgency Strategy

The apparent lessons of the Vietnam War have informed present counterinsurgency doctrine...the military fought the kind of war it knew how to fight best, making extensive use of mobility and firepower, and neglected the other war, the war for popular support. (Schwarz, 1992, 5)

At the time, the Salvadoran armed forces structure was in shambles. Despite having a military-leader at the head of government, the Salvadorian Army lacked the infrastructure, discipline, and training necessary to employ the counterinsurgency strategy that American advisors envisioned for the country. This presented three major problems for American military advisors: (1) corruption was deeply entrenched through military and political branches; (2) the Army lacked basic oversight mechanisms at every operational level; and (3) the coin strategy implied the equipping of an already “blood-thirsty” corps.

Danner notes that American combat forces clearly understood where they stood with the Salvadorian government and military, nonetheless, advisors continue to pursue an aggressive military training plan versus addressing root problems stifling progress. Phrases such as “We were on our last legs, and the institution [the Salvadorian Army] simply did not support people being good commanders” were commonly repeated among military advisors (Danner 1994, 22-23). An example was the development of Immediate Reaction Infantry Battalions (BIRI), like *Atlacatl*, which received equipment, basic weapon, and tactics training from Special Forces advisors.

For years, Monterrosa's *Atlacatl* battalion was used as a success story for the counterinsurgency effort in El Salvador despite the numerous human rights violation reports surrounding the unit. Expressions such as “*Atlacatl* achieved a commendable combat record for its tactical capability in fighting the guerrillas but also for its humane treatment of the people” and “the *Atlacatl* battalion is the best unit in the country”

reverberated during testimonies by defense officials and directors with regards to the military effort in El Salvador⁴⁴ (Danner 1994, 120-123).

A U.S. military attaché noted that Monterrosa was “one of the best officers” and “with a hot shot strategist like Monterrosa, who I'd put up against any American hot shot, things began to happen, and it began to make a difference in the theater” (Danner 1994, 39). The Assistant Secretary of State for Human Rights would second the comment at a senate hearing in 1982. He stated, “The battalion to which you refer [regarding the massacre at *El Mozote*] has been complimented at various times in the past over its professionalism and over the command structure and the close control in which the troops are held when they go into battle” (Danner 1994, 127).

Nonetheless, while some American advisors praised counterinsurgency proxies, others argued against the strategy, noting that unlike Guatemala and other places where the strategy may have worked, in El Salvador, mirroring FMLN operatives would only validate the continuance of human rights violations against a civilian populace. A military advisor serving in El Salvador pointed out that U.S. advisors failed to see the lessons learned from Vietnam and consequently committed similar mistakes. He added, “the US Army themselves were products of a system that teaches conventional military skills”, and consequently military advisors falling in the same trap were teaching these battalions “the wrong skills for a guerrilla war” (Schwarz 1992, 5). In 1990, General Maxwell Thurman, commander of the U.S. Southern Command, admitted, “since the

⁴⁴This statement would haunt military strategists years later when *Atlatl's* litany of massacres came to light. The “best American trained battalion in El Salvador” was responsible for the killing civilians in *El Mozote*, six Jesuit priests, and the rapes and killing of many others before the war ended (Danner 1994, 127).

government of El Salvador was still unable to defeat the rebels after ten years, the only way to end the fighting was through negotiations, and a sharp reversal of past policy (Schwarz 1992, 4).

Summary and Conclusion

The overall goal for this chapter was to present the information collected from an array of open source resources (academic and declassified military reporting), and process it through the proposed method of analysis. The intent was to test the functionality with respect to providing greater clarity and knowledge of factors coexisting in the OE. Using a case study from the Salvadorian civil war, actors, relationships, interactions, and connections were presented to analyze system behavior. Results from this analysis were used to determine motivating factors (root causes and causal claims) driving system conduct. The study compares system narratives against existing U.S. policy, and presents the following observations: (1) Systems Thinking provides a clearer picture of the OE when compared to other approaches.⁴⁵ (2) A Systems Thinking approach to analyzing the OE enhances knowledge on system behavior. (3) Logics of explanation (causal claims) explain system actions and behavior. (4) Cause and effect strategies do not work in complex environments. (5) The way causal relationships are understood affects the tools practitioners employ in the environment.

Since the Carter administration, the United States government has placed considerable emphasis in implementing institutions to combat communism in Central America. These policies have aimed to solve macro-level concerns and have been

⁴⁵See Appendix C for a slide presentation on the OE using a Systems Thinking approach.

institutionalized with little success in solving deep-rooted issues. In linear systems, the direct link between cause and effect can be easily identified and implemented using simple strategies. In complex social systems such as El Salvador, however, where the attribution of blame for grievances rested in interrelated systems, cause and effect strategies had little correlation in solving underlying conflict drivers. This shortcoming caused two problems, it barred strategies that could sustain long-term effects, and it prevented an accurate understanding of factors driving conflict and impeding progress.

In El Salvador, the counterinsurgency policy assumed that democratic processes “would redress many of the grievances that spawn the insurgency” (Shwartz 1992, ix). This statement could not have been farther from the truth. Even if the counterinsurgency strategy decreased violence levels, it did not address the *tanda*’s corrupt system, human rights violations, and other legitimate grievances preventing sustainable progress.

Furthermore, while the Kissinger Report argued that more aid and more training would beget a “humane anti-guerrilla strategy,” the Kissinger report falsely assumed corruption and other root problems would dissipate. Units such as *Atlacatl* was one of the best U.S. trained units, and possessed superior equipment to any other Army unit in country. However, *Atlacatl* murdered over a thousand civilians in El Mozote (Schwarz 1992, 35). Benjamin Schwarz notes that the Kissinger Commission Report, which vouched that establishing social and political order would eradicate the FMLN movement in El Salvador, was not only wrong, but it “committed itself [the U.S.] to ameliorating the

pathology produced by centuries of abuse committed by the very governing elite and military that its policy supported”⁴⁶ (Schwarz 1992, v).

One only needs to remove the dates and names of specific locations and the resemblance to current conflicts becomes apparent. Warlords, insurgent networks, oppression, and political corruption are all issues warfighters faced in Iraq and Afghanistan. In 2011, General David Rodriguez reviewed progress in Afghanistan and noted that “criminal patronage networks have thrived on poorly managed aid dollars. And some of the practices of the coalition forces, such as their early reliance on casualty-heavy air strikes and brutish warlords, created legitimate grievances among the population” (Rodriguez 2011).

Rodriguez concludes that as the American people analyze lessons learned over recent conflicts in Iraq and Afghanistan, he hopes that practitioners heed to yet another truism: “equipment becomes obsolete, but leadership and people do not” (Rodriguez 2011). It is thus the overall goal of this study to recommend Systems Thinking as a method of analysis to increase knowledge and understanding of socio-political factors and causes stemming from these, to avoid making the same mistakes from the past. Details of these recommendations are found in chapter 5.

⁴⁶It is important to note, the U.S. counterinsurgency effort made positive progress towards a peace agreement once: (1) aid was contingent upon GOES reducing human rights violations; (2) the end of the cold war decreased the existential communist threat in El Salvador; (3) civic action programs were executed in conjunction with other military reform programs; and (4) social reform programs were instituted through local initiatives (Schwarz 1992, v).

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

Summary of Findings

Results from chapter 4 reveal that the proposed method of analysis provides greater granularity of understanding, thereby increasing comprehension of the conditions, circumstances, and influences in the environment. By analyzing the environment through narratives and explanations of logic, root causes that motivate stakeholders to take certain actions become apparent. In addition, findings reveal linear cause and effect strategies inherently engender a “crisis of perception.” The study theorizes that this probability increases when feedback mechanisms are omitted from analysis, or when analysis fails to account for a system’s emergent patterns of behavior. This inadequacy has the potential to mislead commanders to sustain path dependent institutions even when these offer sub-optimal results.

It is important to note that while the proposed method of analysis explicates how root causes drive actors to take certain actions, unforeseen variables (choice, opportunity, supernatural events) have the potential to affect systems behavior. Uncertainty is, after all, an unavoidable factor in the conduct of war.

Implications

Based on these findings, the study contends the following implications: (1) how practitioners see the environment matters; (2) linear models lead to linear explanations, (3) macro-level cause and effect strategies are ineffective when dealing with complex environments, particularly when these strategies do not account for local dynamics;

(4) cause and effect solutions can potentially perpetuate conflict; and (5) without the right method of analysis, military professionals will inherently resort to linear explanations to solve complex socio-political problems.

Recommendations

1. Provide a definition for Systems Thinking in Army doctrine, training directives and circulars, and institutionalize Systems Thinking as part of professional military education.
2. Doctrine recommends Systems Thinking at the operational level; systems analysis should be used regardless of the type of mission or level of war.
3. Propagate Systems Thinking and Complexity Theory concepts (i.e., relationships, interactions, connectedness, self-organization, and emergence) in professional military education and pre-deployment training. Understanding causation must be included as part of Systems Thinking.
4. Institute the use of narratives, causal claims, and feedback mechanisms as part of design in professional military education.
5. Institute a process for marrying micro-level and macro-level logics of explanations to understand the OE.

For further study

While some practitioners argue that a center of gravity analysis or a nodal analysis, commonly used in the military intelligence field, are useful techniques to understand the environment, this study did not compare these techniques against the proposed method of analysis.

Dale Eikmeier offers the acronym RAFT (relationships, actors, functions, and tensions) as a technique to identify the center of gravity as part of the curriculum at CGSC (Eikmeier 2010). I contend that while both the nodal analysis and COG techniques offer simple ways to denote stakeholder relationships, they do not explicate causation. Without a clear understanding of root causes driving conflict, I contend these techniques potentially mislead practitioners to solve superficial problems. Furthermore these techniques do not account for patterns of emergence or feedback mechanisms. Nonetheless, it would prove beneficial to compare both methods to identify gaps and improve the proposed method of analysis in this study.

Conclusion

After analyzing lessons learned from the last ten years of military conflicts, senior leaders urge military professionals to study the human domain to avoid committing the same mistakes. Seasoned military leaders like Odierno, Amos, and McRaven, continuously express that: “[the fact] that the competition and conflict are about people is hardly a revelation;” “the neglect or misjudgment of population-centric consideration in U.S. strategic calculations is easily documented,” and “one only has to examine our military interventions over the last 50 years in Vietnam, Bosnia, Kosovo, Somalia, and Afghanistan, to see the evidence and cost of this [misaligned strategies] oversight” (Odierno, Amos, and McRaven, 2013).

These are powerful convictions on military planners, staffers, and strategists coming from senior leaders with first-hand knowledge on how the Army profession plans for and executes operations in combat. Furthermore, when one takes into account the costs associated with OIF and OEF from an economic (\$4-6 trillion) and human (6,742

KIA, and 51,706 WIA) standpoint, the need for practitioners to understand the causes of conflict in the operational environments becomes even more powerful.⁴⁷

Army publications denote that military professionals must account for the “conditions, circumstances, and influences” in order to “understand” the OE (Department of the Army 2012). This study poses that the aggregate of frameworks that doctrine recommends are not sufficient for practitioners to attain a clear understanding of socio-political systems coexisting in a military’s area of operations and the driving factors motivating their conduct. This assessment is evident through published lessons learned from over a decade of military conflict (Walt 2012), in the challenges noted by the Joint and Coalition Operational Analysis division (Joint Chiefs of Staff 2007), and through the various thesis and monographs analyzed through this study.

While both joint and Army doctrine encourage a Systems Thinking to analyze the operational environment, analysis in chapter 2, reveals that these publications provide conflicting information on the theory, the definition, and the proposed employment for the concept. Furthermore, these publications do not mention the use of Complexity Theory. With these considerations in mind and the findings noted in chapter 4, this study proposes a method of analysis that dissects narratives, system organization and logics of explanation—causal claims—to analyze and describe the OE. Through this method, this

⁴⁷Linda Bilmes from Harvard University dubbed the Iraq and Afghanistan conflicts “as the most expensive wars in US history-- totaling somewhere between \$4 to \$6 trillion” (Bilmes 2013, 1). To date the Department of Defense notes a total of 4,423 casualties and 31,941 wounded in action for Operation Iraqi Freedom and 2, 319 killed in action and 19, 765 wounded in action for Operation Enduring Freedom (Department of Defense 2014).

study theorizes that practitioners can garner the granularity necessary to develop strategies that penetrate conflict drivers more quickly and efficiently.

However, if the methodology to analyze the OE stays as it currently is, the quality of strategic plans will vary depending on the experience and knowledge of individual planners, staff officers, or analyst charged with developing the operational picture for the command. Though select students and instructors at CGSC, SAMS, and the War College use socio-political dynamics and concepts of Systems Thinking as part of design, these groups represent a small percentage of the military profession training on the approach. This study contends that codifying Systems Thinking and Complexity Theory in doctrine and including these concepts in military education will prevent disparity across commands and provides the Army with a more effective planning and operating capability.

GLOSSARY

Adversary. (DOD) A party acknowledged as potentially hostile to a friendly party and against which the use of force may be envisaged (ADRP 3-0).

Area of Operations. An operational area defined by the joint force commander for land and maritime forces that should be large enough to accomplish their missions and protect their forces (JP 3-0).

Army design methodology. A methodology for applying critical and creative thinking to understand, visualize, and describe unfamiliar problems and approaches to solving them (ADP 5-0).

Center of gravity. (DOD) The source of power that provides moral or physical strength, freedom of action, or will to act. Also called COG (ADRP 3-0).

Decision point. A point in space or time the commander or staff anticipate making a key decision concerning a specific course of action (ADP 5-0).

Evaluating. Using criteria to judge progress toward desired conditions and determining why the current degree of progress exists (ADRP 5-0).

Execution. Putting a plan into action by applying combat power to accomplish the mission (ADP 5-0).

Gap. Weakness in time, space, or capability.

Information. (DOD) The meaning that a human assigns to data by means of the known conventions used in their representation (ADRP 6-0).

Knowledge. Information analyzed to provide meaning and value or evaluated as to implications for the operations. It is also comprehension gained through study, experience, practice, and human interaction that provides the basis for expertise and skilled judgment (ADRP 6-0).

Operational Environment. A composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander (JP 3-0).

Situational understanding. The product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables to facilitate decision-making (ADP 5-0).

Unified Action Partners. Those military forces, governmental and nongovernmental organizations, and elements of the private sector with whom Army forces plan,

coordinate, synchronize, and integrate during the conduct of operations (ADRP 3-0).

PLANNING ASSESSMENT TOOLS FROM CGSC (CLASS 1401)

IPB I - Operational Environment (ASCOPE)					
Community, Neighborhood, Group (Center of Influence)					
Data		Use x Perspectives			
		Population	Insurgents	Counterinsurgents	
AREA (Where)	LOCATION				
STRUCTURE (Why Important)	LOCATION				
CAPABILITIES (Who Is Responsible)	STATUS				
Sewer					
Water					
Electric					
Academic					
Trash					
Medical					
Security					
Other Considerations					
Unemployment					
ORGANIZATION (What Groups in AO)	LOCATION/ DETAILS				
PEOPLE (How do they Communicate)	LOCATION/ RECIPIENT				
EVENTS (When)	DTG/LOCATION				



Blank outlines provided to Command and General Staff College (CGSC) students for planning purposes.

[illegible]

Source: Picture taken by author on 15 May 2014, from a staff group at the Command and General Staff College (Class 14-01) during a planning session.

APPENDIX B

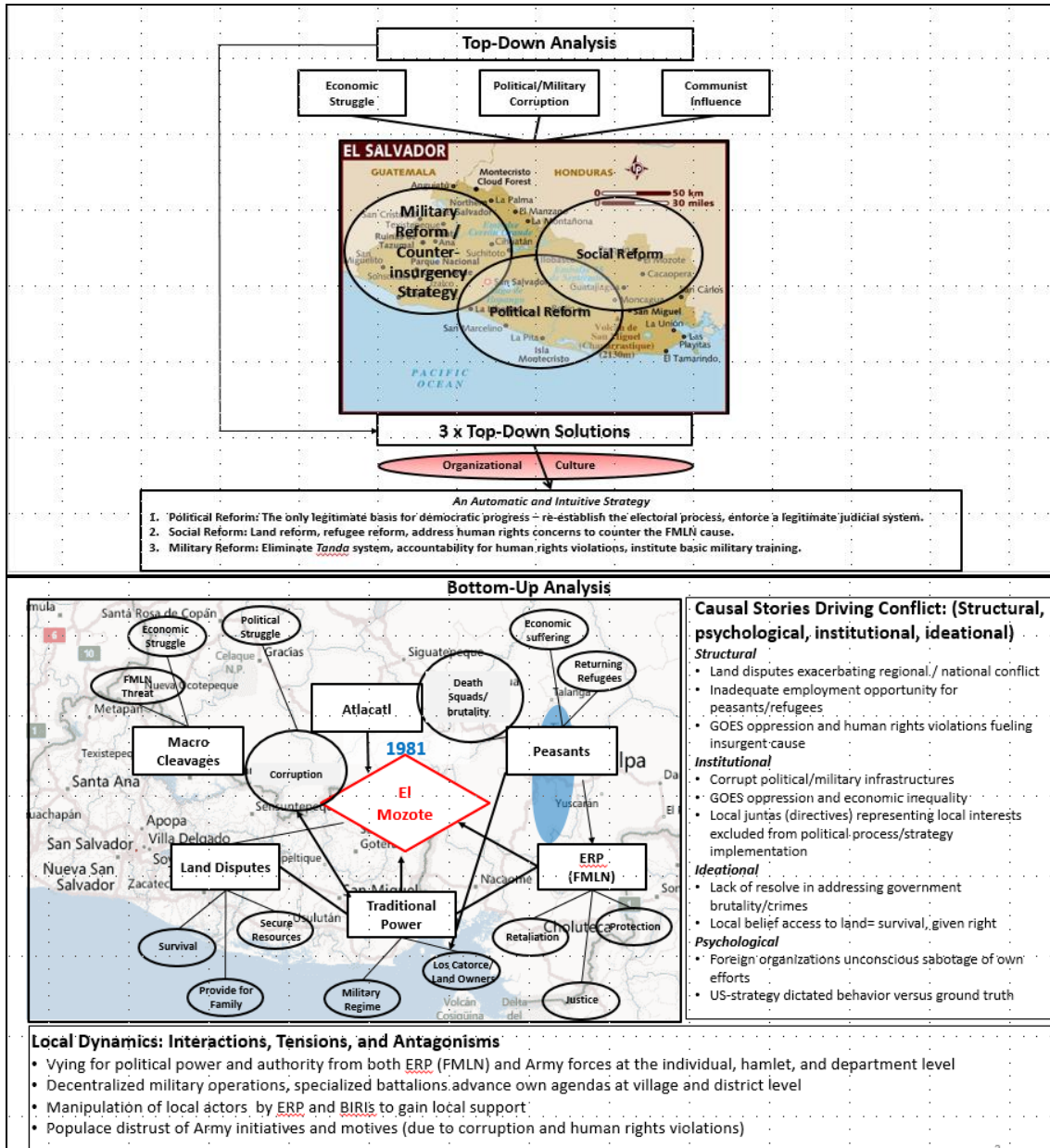
MISSION BRIEF PRODUCED BY STUDENTS AT CGSC (CLASS 1401)

 <h4>Current OE Environmental</h4> <p>What's going on in the OE?</p> <table> <tr> <td data-bbox="243 451 527 619"> Political <ul style="list-style-type: none"> Kamon claim to Tytan lands/resources. Weak & corrupt government w/o rule of law and few institutions. </td> <td data-bbox="527 451 803 619"> Military <ul style="list-style-type: none"> Tytan Armed Forces weak <ul style="list-style-type: none"> 422nd BN (Level 3) Police Forces weak <ul style="list-style-type: none"> MPEF (Level 2) Police (Level 4) KAF on border Militia and IAG conflict (EKM ↔ FKA) </td> </tr> <tr> <td data-bbox="243 619 527 823"> Economic <ul style="list-style-type: none"> Poorest region in very poor country GAM is economic hub of region (illegal & legal) Wealth disparity between ethnicities </td> <td data-bbox="527 619 803 823"> Social <ul style="list-style-type: none"> Severe ethnic tensions (Melak/Klorid) Large IDP / Refugee issue (150-250k) Majority of population support Coalition. Wealthy Klorid minority and partisans do not support coalition. </td> </tr> </table> <p>ARCTIC WARRIORS! 9</p>	Political <ul style="list-style-type: none"> Kamon claim to Tytan lands/resources. Weak & corrupt government w/o rule of law and few institutions. 	Military <ul style="list-style-type: none"> Tytan Armed Forces weak <ul style="list-style-type: none"> 422nd BN (Level 3) Police Forces weak <ul style="list-style-type: none"> MPEF (Level 2) Police (Level 4) KAF on border Militia and IAG conflict (EKM ↔ FKA) 	Economic <ul style="list-style-type: none"> Poorest region in very poor country GAM is economic hub of region (illegal & legal) Wealth disparity between ethnicities 	Social <ul style="list-style-type: none"> Severe ethnic tensions (Melak/Klorid) Large IDP / Refugee issue (150-250k) Majority of population support Coalition. Wealthy Klorid minority and partisans do not support coalition. 	 <h4>Current OE Environmental</h4> <p>What's going on in the OE?</p> <table> <tr> <td data-bbox="812 451 1112 619"> Information <ul style="list-style-type: none"> Image of NATO presence a concern. Equal gov't support to all ethnicities questioned. Media biased (radio primarily) Varying quality of comm infrastructure. </td> <td data-bbox="1112 451 1360 619"> Infrastructure <ul style="list-style-type: none"> Essential services non-operational Damaged infrastructure </td> </tr> <tr> <td data-bbox="812 619 1112 823"> Physical Environment <ul style="list-style-type: none"> Refugee / IDP camps throughout AO Flood plains in east Mountains in West </td> <td data-bbox="1112 619 1360 823"> Time <ul style="list-style-type: none"> Immature theatre (<5 months) </td> </tr> </table> <p>ARCTIC WARRIORS! 10</p>	Information <ul style="list-style-type: none"> Image of NATO presence a concern. Equal gov't support to all ethnicities questioned. Media biased (radio primarily) Varying quality of comm infrastructure. 	Infrastructure <ul style="list-style-type: none"> Essential services non-operational Damaged infrastructure 	Physical Environment <ul style="list-style-type: none"> Refugee / IDP camps throughout AO Flood plains in east Mountains in West 	Time <ul style="list-style-type: none"> Immature theatre (<5 months)
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Physical Environment <ul style="list-style-type: none"> Refugee / IDP camps throughout AO Flood plains in east Mountains in West 	Time <ul style="list-style-type: none"> Immature theatre (<5 months) 								

Source: CGSC Students, "Class 1401 Mission Analysis Brief" (Presentation Slides, 10 January 2014), https://cgsc.blackboard.com/webapps/portal/frameset.jsp?tab_group_id=_2_1&url=%2Fwebapps%2Fblackboard%2Fexecute%2Flauncher%3Ftype%3DCourse%26id%3D_1980_1%26url%3D (accessed 19 May 2014).

APPENDIX C

SYSTEMS THINKING METHOD OF ANALYSIS (GRAPHICAL DEPICTION)



Source: Created by author using data from various sources as noted and referenced in chapter 4. (LeoGrande and Robbins 1980), (Jane's Sentinel 1914), (Arnson 1993, 4), (Danner 1994, 21-146), (Britannica 2013), (Parsons 2007, 54-161), (Wood 2003, 11-26), (Byrne 1996, 45-152), (Rosenthal and Mitchell 2013), (America's Watch 1992, 3), (Smith 2003, 69), Weyland 2012, 921), (U.S. General Accounting Office 1990, 2, 66), (Simpson 1995, 76-77; 231) Schwartz 1992, v; ix; 4-5; 35), (Rodriguez 2011).

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