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Applying a Critical Thinking Framework to Improve Intelligence Analysis

James Hess^A & Curtis Friedel^B

This study examined an intelligence analysis framework built using specific cognitive critical thinking skills. The framework demonstrated that intelligence analysis did improve, specifically with the novice analysts that participated, and there was demonstrated specificity in the respondents' analyses. A panel of experts provided insight and content assurance that demonstrated the intelligence analysis and products produced were valuable for use at the tactical level. Finally, this study examined successful historical counterinsurgencies in relation to the analytical framework utilized in order to understand how this analysis leads to operational success.

Keywords: *analysis, counterinsurgency, critical thinking, and operational environment*

Background

The intelligence community is responsible for providing competent analysis and assessments pertaining to the many significant geopolitical situations that affect or may potentially affect the nation's interests. The intelligence community has always experienced challenges living up to that charge, and while it may merely be a case of the nature of the profession, there are always lessons to learn and processes that may improve analytical processes. Critical thinking is a cognitive process that may be able to provide that improvement to analytical processes; when an analytical framework is built by applying these cognitive skills, the analytical effort may become more focused and meaningful.

While many intelligence analysts may believe they are thinking critically about the information they are receiving, in reality not many analysts are formally trained in applying critical thinking skills. The critical thinking process provides a framework for the analyst to ensure assessments are thorough and reasonably objective in nature. Moreover, by applying a critical thinking framework to intelligence analysis, it is possible to incorporate critical thinking into a domain-specific methodology instead of providing instruction in critical thinking with the hope of it transferring into the analyst's assessments. Critical thinking in itself will not provide that perfect assessment, but it

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may ensure the analyst has objectively valued his or her holdings while maintaining all pertinent and potential alternatives. Therefore, an analyst who applies critical thinking will ensure that biases will not dictate what the information means, and will determine the value of competing alternatives in order to mitigate rash judgments. Applying critical thinking to intelligence analysis is not only paramount for the quality of the analysis, but in today's unconventional environments, it is more important than ever. We are currently involved in counterinsurgency (COIN) operations in Iraq and Afghanistan, and the combating of terrorist or counterterrorism operations may become routine missions for the U.S. Army. As such, it is imperative that we modify our analytical procedures to face these challenges.

Conceptual Framework

Introduction

Since this study focused on the Critical Thinking applied to Intelligence Analysis Process (CTIAP) written by Dr. Curt Friedel and myself, as the primary researcher (Hess and Friedel 2008), I will discuss this first. The CTIAP was the conceptual framework examined for the course of this study. The CTIAP utilizes Dr. Peter Facione's research that produced a definition and specific cognitive skills necessary for effective critical thinking (Facione 2010), and applies it to the U.S. Army's intelligence analysis process found in FM 2-01.3 Intelligence Preparation of the Battlefield (IPB). Facione's six cognitive skills were interpretation, analysis, evaluation, inference, explanation, and self-regulation (Facione 2010, 5).

There are two predominate schools of thought pertaining to critical thinking: Facione (2010) and Paul and Elder (2002). Facione's research has focused on the critical thinking aspects applied domain specifically, while Paul and Elder's focus was more toward critical thinking as a standalone cognitive ability that generally improves thinking. I chose Facione's research as the basis for both the CTIAP (Hess and Friedel 2008) and for this study since I consider intelligence analysis a unique domain because it is tailored to the specific mission in which it may be utilized. For instance, intelligence analysis may take on a different role in conventional warfare that it takes in a COIN or counterterrorism operation.

CTIAP Discussed and Defined

The CTIAP was developed through an application of Facione's (2010) six cognitive skills to the steps of IPB. The following section discusses the six cognitive steps and how they might be applied to the intelligence process.

Interpretation was defined as the ability "...to comprehend and express the meaning or significance of a wide variety of experiences, situations, data, events, judgments, conventions, beliefs, rules, procedures, or criteria" (Facione 2010, 5). In other words, the analyst must understand the context of information being evaluated, which could be rooted in culture, religious ideology, political gain, or various other

nuances that could shape its meaning. The meaningfulness of the information may be categorized by its importance within these different domains or categorized by its meaning to different group stakeholders. Besides, the analyst must honestly consider personal experiences when evaluating information. Here alone the analyst can find tremendous amounts of bias or other superseding variables that affect how value is assigned to the information.

The cognitive skill *analysis* was defined as the ability "...to identify the intended and actual inferential relationships among statements, questions, concepts, descriptions, or other forms of representation intended to express belief, judgment, experiences, reasons, information, or opinions" (Facione 2010, 5). How the information relates to other holdings is one of the key aspects of analysis. The ability to study the parts separately (distinguishing facts from opinions and assumptions) and then holistically (forming arguments from facts, opinions, and assumptions) may be challenging to say the least, but this is the cornerstone of analysis. This definition, while short in words, is long in ideals. Constantly questioning or judging the information is a Herculean effort that cannot be taken lightly. Nor can it be something that we take for granted. Again, the analyst must understand how biases can affect the way they look at the information and apply it to a larger situation.

Evaluation as a critical thinking skill was defined as the ability "...to assess the credibility of statements or other representations which are accounts or descriptions of a person's perception, experience, situation, judgment, belief, or opinion; and to assess the logical strength of the actual or intended inferential relationships among statements, descriptions, questions or other forms of representation" (Facione 2010, 5). While evaluation may sound similar in wording to interpretation and analysis, it must be noted that the phrase "assess the credibility" should focus one to assess the source of the evidence with respect to the authority and expertise of the individual. Moreover, consider the logical strength of the information with regard to timeliness, implications, and other variables determined by the situation. Again, removing one's biases is paramount, but not a given. It should also be noted that it may be impossible to remove all of our biases, so an analyst must constantly struggle to mitigate them. Further, when this critical thinking framework is applied to intelligence analysis we will see techniques that can assist with removing biases in order to form stronger judgments.

Inference was "...to identify and secure elements needed to draw reasonable conclusions; to form conjectures and hypotheses; to consider relevant information and to deduce the consequences flowing from data, statements, principles, evidence, judgments, beliefs, opinions, concepts, descriptions, questions, or other forms of representation" (Facione 2010). In exhibiting this skill, the analyst determines what to conclude from the collective information. Developing initial hypotheses in order to test them in an unbiased and pertinent manner is where the analyst should be focusing his or her efforts. It is challenging and detail-oriented work, but important for the analyst to ensure that they let the information speak for itself and consider multiple options specific to the problem or situation that exists.

Explanation was defined as "...being able to present in a cogent and coherent way the results of one's reasoning. This means to be able to give someone a full look

at the big picture: both ‘to state and to justify that reasoning in terms of evidential, conceptual, methodological, criteriological, and contextual considerations upon which one’s results were based; and to present one’s reasoning in the form of cogent arguments’ (Facione 2010, 6). For the intelligence analyst, the skill of explanation is used to present conclusions and assessments that are specific to the mission assigned. Providing explanation of the analysis of a situation that is not relevant or cogent to the larger task may be completely counterproductive. In addition, the employment of a strong explanation may ensure that the analyst is not providing an assessment that is vague or more “strategic” than applicable to a particular mission.

Lastly, *self-regulation* was to “...self-consciously monitor one’s cognitive activities, the elements used in those activities, and the resulted educed, particularly by applying skills in analysis, and evaluation to one’s own inferential judgments with a view toward questioning, confirming, validating, or correcting either one’s reasoning or one’s results” (Facione 2010, 7). Self-regulation may perhaps be the most crucial cognitive skill for the intelligence analyst. It is common for initial reports in the field to be unclear and usually far from accurate; these routinely contribute to the “fog of war”. Therefore, it is imperative for the analyst to acquire a final and complete report, as well as update on all products and assessments resulting from incomplete reports. As in the aforementioned discussion of each critical thinking skill, self-regulation may be applied with each skill throughout the critical thinking process. By doing so, the information gleaned by each skill is questioned, confirmed, and validated. Self-regulation is the step in which the analyst needs to ensure that various personal biases are removed as much as possible. Being aware of one’s biases is paramount to ensuring their presence is reduced.

The CTIAP method applies each of the six cognitive skills defined by Facione and determines how they affect each step of the IPB process (Facione 2010). According to FM 2-01.3, there are four steps in the IPB process: (1) define the operational environment, (2) describe environmental effects on operations, (3) evaluate the threat, and (4) determine threat courses of action.

The analyst begins the IPB process by utilizing a framework that is built using the operational variables of political, military, economic, social, infrastructure, and information (PMESII) and the urban terrain analysis variables of areas, structures, capabilities, organizations, peoples, and events (ASCOPE). Of note, an analyst may, and should, substitute these variables based on mission requirements. All information will be organized within this framework.

Next, the analyst will determine how he or she will evaluate information. This should be a 1–5 point scale that weighs the value of the source of information, as well as providing criteria to upgrade or downgrade the value based on data confirmed through other reporting. The intent of this analysis of the reporting and the value of the data are to enable the analyst to prioritize targets and threat intent.

The organization of the reporting through the framework may enable the analyst to determine whether he or she has sufficient collection. Through this analysis, the analyst may need to reprioritize collection strategies as well as evaluate the relationship between the variables of the framework.

Research Question

To test the Critical Thinking applied to Intelligence Analysis Process (CTIAP) in this context, the following research question was posed: Can a domain-specific application of critical thinking to intelligence analysis provide a holistic, comprehensive, and unbiased assessment that is pertinent to decision makers? I note that at the tactical level, decision makers are typically commanders.

To answer the research question, grounded theory was utilized in this study. Grounded theory was used to evaluate the products and assessments produced by a group of cadets at the United States Military Academy by comparing them with historical counterinsurgencies.

Methods

Research Design

This research was conducted utilizing grounded theory. I began by examining the effectiveness of the domain-specific application of critical thinking to intelligence analysis through a case-based scenario. Furthermore, I examined some commonalities of historical counterinsurgencies that contributed to success. The dependent variable for this research was the effectiveness of the analysis conducted by cadets at the United States Military Academy at West Point using a critical thinking-based model applied to intelligence analysis. The study examined a group of cadets at the United States Military Academy at West Point that had been taught intelligence analysis with the Critical Thinking Intelligence Analysis Process (CTIAP) (Hess and Friedel 2008). The study also examined historical counterinsurgencies to determine why a domain-specific application of critical thinking is important, and how the CTIAP may improve the objectivity, completeness, and applicability of intelligence analysis through semi-structured interviews.

This study was conducted utilizing a qualitative research approach instead of a quantitative approach. I chose qualitative because it was better suited to explore and understand how and why something works in a real-world situation. Qualitative research is more interpretive in nature, and provides more depth and understanding of the interconnectedness of the variables rather than attempt to control or isolate them. Moreover, quantitative research is more systematic, typically mathematically or statistically based, and provides validity that may be generalized to a larger population. Given this, my research question was not quantitative in nature, but rather more in line with the definitions of qualitative research (Merriam 2009; Miles and Huberman 1994; Rossman and Rallis 2003; Yin 2009).

I chose to utilize historical counterinsurgencies because they are well suited for studying real-life situations that involve processes and details that are suitable for understanding the attributes of successful counterinsurgencies (Yin 2009; Merriam 2009). According to the U.S. Army's Counterinsurgency Field Manual (FM) 3-24, intelligence is an essential part of any COIN operation, hence an important

consideration in the evaluation of the CTIAP. Therefore, the grounded theory approach best suited the overall objectives of this study. The design included historical studies as previously mentioned. The data analysis was conducted with the use of grounded theory, where “the researcher begins with a[n] interview...and compares it with another incident...” (Merriam 2009, 199-200). By analyzing the details of the interviews, I used a critical thinking framework to examine the context of the factors that contributed to successful historical counterinsurgencies.

Data Analysis

To fully understand the depth of the data collected in interviews, I evaluated the cadets’ responses and products through five major themes: (1) understanding the operational environment, (2) familiarization with the threat groups present in the case-based scenario, (3) details and completeness with the threat courses of action, (4) comprehensive target list, and (5) ease and comfort of using CTIAP.

The findings of my study were arranged by the five themes mentioned. For each theme, I further broke down the respondents’ answers specific to each point. All the subsections were organized using the following format: an explanation of how that specific subsection builds to a holistic assessment; the cadets’ responses that provide details on how the CTIAP ensured their products and analysis were comprehensive; and a summation for each subsection where I explain how the cadets’ answers based on the CTIAP ensured that they remained as objective and unbiased as possible.

Finally, in order to explain how well critical thinking encourages holistic, comprehensive, and unbiased assessment of intelligence analysis, I presented a case-based scenario to 26 participants (after data saturation, I used the products from five of the cadets, completely randomized) trained to use the CTIAP, and then conducted interviews with the cadets to answer my research question. I then presented the products resulting from the participants’ analysis to a panel of experts consisting of five colonels, all of whom were previous brigade commanders (all but one were from a combat arms branch, the remaining one was military intelligence). After their review, I conducted independent interviews with the colonels that have served in a capacity to provide insight and potential critiques to the study. Finally, I conducted a review of historical counterinsurgencies in order to provide a theoretical underpinning regarding successful counterinsurgencies. These comprise the four major sections under which I present the data: (1) cadets’ responses pertaining to using the CTIAP in the case-based scenario, (2) panel of experts’ responses of the cadets’ products and analysis, (3) historical counterinsurgencies providing insight into the effectiveness of the CTIAP, and (4) review of cadets’ products and analyses based on historical counterinsurgencies.

Findings

Introduction

My restated research question for this study is: Can a domain-specific application of critical thinking to intelligence analysis provide a holistic, comprehensive, and unbiased assessment that is pertinent to decision makers?

Summary of Findings

The cadets and the panel of experts agreed that the operational environment interface that created an analysis of both PMESII and ASCOPE variables was the single most important aspect of the CTIAP that focused analysis in a comprehensive, holistic, and unbiased manner. The interface ensured that the cadets' analyses focused on the aspects of the operational environment that are essential for mission success. The products produced based on the interface were pertinent and relevant for operational use, as the panel of experts attested numerous times.

Examining Historical Counterinsurgencies

Grounded theory was utilized to provide insight into why the CTIAP provides a comprehensive, holistic, and unbiased assessment, and two historical counterinsurgencies were examined: the Philippine-American War and British Malaya. As the operational environment proved to be the most important basis for the analysis conducted with the CTIAP, my analysis of these two conflicts likewise focused on the operational environment. Specifically, I examined how the counterinsurgent forces' focus on influencing the operational environment contributed to the successful outcomes of these counterinsurgencies.

Both conflicts, the Philippine-American War and British Malaya, were examples of a conventional army that deployed to suppress an insurgency. Both conflicts also demonstrated how traditional military powers deployed against belligerents alone had little to no success against an insurgency. Further, both conflicts illustrate that when military power is applied against an entire operational environment, the chance for success improves dramatically.

Philippine-American War

The Philippine-American War, 1899–1902, began when the United States annexed the Philippines after the United States' victory over Spain in the Spanish-American War. Armed revolutionaries fought for Filipino independence. The United States initially sent a small contingent of 5,000 soldiers to secure the island in 1898; the Filipinos met this action with resentment and frustration. By February 1899, armed conflict broke out between the Filipino revolutionaries and the United States.

Initially, the United States conducted military action in the Philippines in a very conventional manner, but quickly moved to a COIN operation under the leadership of Major General Elwell Otis. Major General Otis did not effectively integrate all subordinate efforts, which allowed subordinate commanders to wage the counterinsurgent fight in their own manner. After limited success in fighting the Filipino insurgents, the U.S. Army transitioned to a more robust COIN based way of conducting warfare. Brigadier General Arthur McArthur refocused the strategy to not only fight the insurgents, but also improve the overall environment for the population. One of the main strategies used during the Philippine-American War in the revised COIN phase was the creation of zones of protection. The zones of protection were areas that the U.S. Army established to separate average citizens from the insurgents. While this strategy had its critics, overall it proved successful and was a significant COIN effort that helped realize the eventual end of the war in favor of United States.

The Operational Environment in the Philippine-American War

The successful conclusion of the Philippine-American War is a demonstration of leveraging the operational environment to achieve the objectives of the military mission. U.S. forces recognized the need to focus on improving the operational environment as a whole, and benefitted accordingly.

Brigadier General Samuel B. M. Young initially was not a supporter of providing for the greater good of the society. He mentioned in September 1900 that "...what was required were 'the remedial measures that proved successful with the Apaches'" (Linn 2000, 211). In other words, Young wanted a harsh campaign against insurgents and civilians alike. However, by the March of 1901, Young realized the benefit of focusing on improving the operational environment that affected both insurgent and civilian, when "...he had established 203 schools serving 10,714 students...there was a strong element of enlightened self-interest..." (Linn 2000, 258).

Young did not stop with building schools; he focused his efforts on rebuilding the entire civil structure, his operational environment. "Young and his brilliant chief of staff, Major John G. Balance, embarked on a comprehensive effort to build roads and schools, establish financial solvency, and bring order and good government to the population" (Linn 2000, 261). It seems clear that Young truly began to grasp that insurgents thrive due to a lack of effective legitimate governance. By focusing on building or maintaining societal norms for the populace at large, the operational environment benefits favorably toward the counterinsurgents as the insurgents lose the ability to manipulate the people.

To note, reconstruction efforts not only helped the operational environment, but supported the counterinsurgent military effort as well. "Major Carter P. Johnson urged the construction of roads, both because they were 'productive to the civilization of the country' and because they would allow troops to move rapidly" (Linn 2000, 263). When counterinsurgent forces improve the operational environment in which they are conducting operations, the operations also improve as freedom of movement

improves; this is true in both physical as well as civil improvements. “Americans could not force the guerrillas into battle, but...through the capture of lists of contributors, [they were able] to dismantle the guerrillas’ supply organization” (Linn 2000, 265).

Ultimately, the U.S. Army was able to effectively fight and destroy the Filipino insurgents through the various COIN operations they conducted. The insurgents began to run out of safe havens, and they were unable to maintain logistical bases either. After less than a year of implementing the various actions toward improving the operational environment, in November 1901, “...the Americans’ counteroffensive was in full swing as district commanders pursued the guerrillas into previously inaccessible area” (Linn 2000, 273). Filipino President and strongman Emilio Aguinaldo was captured in April 1902, six months after full implementation of this COIN strategy, effectively ending the Philippine-American War.

Summary of the Philippine-American War

The Philippine-American War provides great insight into how an effective COIN strategy can defeat an insurgency. The strategy that the U.S. Army employed, while we would consider some of the methods harsh by today’s standards, were focused and enabled a succinct method to separate guerrillas from noncombatants. The strategy also improved the operational environment for the benefit of the counterinsurgents, and ultimately strangled the insurgents and their ability to fight.

One valuable lesson learned from studying the Philippine-American War and American strategy lies in how effective strategy can have dual uses. This duality within the strategy of denying the insurgents their ability to conduct operations while improving the counterinsurgents’ freedom of movement was no small detail. This lesson was not only important to understand, but also highlighted how imperative it may be to deny the operational environment to the insurgents. Insurgents and terrorists alike exploit the weaknesses within the operational environment, and the most effective strategies address that aspect and focus on combating and/or denying the insurgents’ or terrorists’ ability to utilize the operational environment in their favor.

British Malaya

The British Malaya conflict, also known as the Malayan Emergency, grew out of post-WW II economic collapse in Malaya. Britain, which had strategic interests in Malaya as it was its primary source of tin and rubber, soon found itself in the middle of an uprising due to the economic unrest. Britain responded in 1948 by sending 13 battalions under the command of Sir General Harold Briggs in order to suppress the uprising that adopted the communist ideology.

The conflict lasted for 12 years, 1948–1960, with British and Malayan forces eventually defeating the communist insurgents. Initially Sir General Briggs imposed a COIN doctrine that Britain used during the Boer Wars, where they created guarded camps or “New Villages” in order to separate the insurgents from the populace.

Unfortunately, Briggs' COIN strategy effectively ended there, as he did little to improve the operational environment and used the British forces in a very conventional manner. The British conducted large movements-to-contact in order to engage the insurgent forces in the jungles of Malaya. They found very little success, as the insurgents simply avoided the loud and cumbersome effort. In 1951 and 1952, Britain realized that it was making little progress, and as a result, Britain reviewed its strategy, replaced the commander, and began to implement a holistic COIN strategy.

The Operational Environment in British Malaya

After the first three years of the conflict, the British strategy was essentially one of conventional forces fighting conventionally. However, British commanders realized that they needed a change in strategy, and this can be best summarized by David Lloyd Owen's remarks: "They [British Soldiers] were flogging the jungle with enormous sweeps and that kind of thing, which is completely useless in this sort of war, and wasting a tremendous amount of effort" (Nagl 2005, 80).

In 1952, Britain selected a new commander of the British conflict in Malaya, General Sir Gerald Templer. Interestingly, amongst his experienced commanding traditional combat arms units, Templer also served as the Director of Military Intelligence on the Imperial General Staff of the Eastern Command just prior to taking command of British forces in Malaya. Templer approached the job with an understanding that insurgents, or combatants, had to be removed from the civilian populace if the British COIN operation would succeed.

One of Templer's first directives was to "impose a twenty-two hour daily curfew..." (Nagl 2005, 89), as well as inform the civil leaders that insurgent or terrorist attacks must stop. Shortly after this directive and a message to the civil leaders, information was supplied that led to "...arrests of some forty Communist supporters..." (Nagl 2005, 89). Templer understood that he must include the operational environment in his strategy if the Malayan Communist insurgents were to be defeated. His efforts had immediate impact on the Communist forces, and he began to form trusting relationships with the local populations through these efforts.

Templer furthered his strategy by incorporating essentially a general order for his subordinates. Templer appeared to understand that the conduct of all soldiers has strategic impact in a COIN. Templer's directive was important and rather simple: "(1) Get the priorities right. (2) Get the instructions right. (3) Get the organization right. (4) Get the right people into the organization. (5) Get the right spirit into the people. (6) Leave them to get on with it" (Nagl 2005, 90).

It is rather apparent that Templer understood sound COIN concepts. He successfully separated combatants from the populace, was hard but fair with the local leaders, and insisted on imparting effective standards for his subordinates. "Perhaps Templer's greatest contribution to the conduct of the COIN campaign was his ability to coordinate all of the efforts – social, political, economic, police, and military to move Malaya forward..." (Nagl 2005, 100). Templer understood that the operational

environment was his center of gravity and his actions reflected this as well. “Military force cannot change opinion. It can only create a framework in which economic reform and good government can take effect” (Nagl 2005, 101).

Summary of British Malaya

Similar to the Philippine-American War, British Malaya was a conflict that demonstrated the following key points: conventional forces need to be cognizant of their role and strategy when fighting an insurgency and normal conventional operations are not sufficient when fighting a COIN. Separating the combatants from the larger population is effective, although a substantial effort in itself. Counterinsurgent forces focusing on improving the operational environment for the population, while denying the insurgents the ability to manipulate it for their purpose, are essential: it facilitates the ability to employ lethal COIN operations.

Britain's efforts in Malaya were successful due to the realization that it needed to change from a conventional to a COIN -based effort. General Sir Gerald Templer brought a rich set of experiences to the conflict, and was able to understand that insurgencies are fought differently than normal army operations. He employed the key points mentioned when conducting COIN operations, and was successful in defeating the communist insurgents. Britain's efforts reflect a tremendous success story in which Malaya was ultimately able to realize independence and form Malaysia.

Summary of Historical Counterinsurgencies

Both historical examples of successful counterinsurgencies reflect the use of conventional military forces and their ability to transform into an effective COIN force. These examples demonstrate that the composition of military forces was not necessarily the key to defeat an insurgency, but rather the strategy used in employing the military forces needed to be sound.

Both examples also demonstrate how military strategy needed to evolve to combat an insurgency. When the strategy did evolve, the counterinsurgent forces were very effective against the insurgents. In addition, both counterinsurgencies demonstrate how important it is to focus a COIN strategy by leveraging the operational environment. The operational environment was necessary to both insurgents and counterinsurgents, and the main effort or the center of gravity of the conflict lies in controlling it.

Interestingly, both examples demonstrate the value of separating the insurgents from the populace. While both examples separated the insurgents by building what were effectively concentration camps, this strategy is obviously rather extreme. While this extreme implementation of concentration camps worked, means that are more humane can be found in current operations in Iraq or Afghanistan, where Coalition Forces live and work amongst the population. Regardless of the method, denying the insurgents the ability to manipulate while safeguarding the population is the lesson learned from these examples.

How the Cadets' Responses Relate to the Historical Counterinsurgencies

To demonstrate how the cadets' responses relate to the historical counterinsurgencies, I examined them in the context of the three major lessons learned through the examination of the Philippine-American War and British Malaya. These three lessons include: (1) Conventional forces need to be cognizant of their role and strategy when fighting an insurgency; normal conventional operations are not sufficient when fighting a COIN. (2) Separating the combatants from the larger population is effective, although a substantial effort in itself. (3) Counterinsurgent forces focusing on improving the operational environment for the population while denying the insurgents the ability to manipulate it for their purpose is essential; it facilitates the ability to employ lethal COIN operations.

Conventional Forces Need to be Cognizant of Their Role and Strategy when Fighting an Insurgency; Normal Conventional Operations are not Sufficient when Fighting a COIN

The cadets did recognize the difference between conducting operations in a COIN environment versus a traditional force-on-force conventional battlefield. The PMESII-ASCOPE interface was the first definitive understanding that the COIN environment was different. In a traditional force-on-force environment, the cadets would have produced a product that highlighted where formations of armor and infantry could and could not go on the battlefield. The PMESII-ASCOPE interface highlights the unique operations of an urban battlefield. While a traditional force-on-force battlefield can exist in an urban environment, the usage of PMESII is certainly more applicable to the COIN environment than the traditional force on force. The cadets fully recognized this aspect, as they all made mention that the PMESII-ASCOPE interface provided them a clear understanding of the environment within which the insurgents operate.

The cadets also demonstrated an understanding that conventional military forces will not typically be engaged in significant force-on-force fighting with insurgents. This resonated in the interviews, as the cadets appeared to value the data highlighted through their PMESII-ASCOPE interface, which they routinely referred to when approaching both collection and targeting efforts.

Separating the Combatants from the Larger Population is Effective, Although a Substantial Effort in Itself

A major point highlighted in both historical counterinsurgencies was the separating of the insurgents or combatants from the larger populace. It was important to point out that the way counterinsurgencies were conducted in both the Philippines and Malaya was not likely the way it would ever be conducted again. In both conflicts, the separation of insurgents from the populace was conducted in a rather brutal manner, and while it was ultimately effective, it was completely contrary to the manner

in which most Western militaries conduct themselves today. Furthermore, with the tremendous explosion of media coverage on today's battlefield, the harsh methods of yesterday have little chance of being viewed as an acceptable part of modern strategy.

In my interviews, the cadets did understand that they still needed to find a way to separate or identify the insurgents for successful deliberate operations to be conducted. This is one of the intelligence field's greatest challenges in the modern COIN environment. These types of surgical operations need to have tremendous fidelity and trust in the information that drives subsequent missions. The cadets commented that the CTIAP does indeed provide strategies to assist in separating the insurgents through both the PMESII-ASCOPE interface, and the evaluative method of qualifying reporting can assist in that process.

Counterinsurgent Forces Focusing on Improving the Operational Environment for the Population, while Denying the Insurgents the Ability to Manipulate it for Their Purpose is Essential; it Facilitates the Ability to Employ Lethal COIN Operations

An important axiom in COIN operations worthy of discussing was the battle for the hearts and minds of the population. There were certain to be significant areas of concern that affected the populace, or the insurgent forces would not have been able to find willing recruits. Truly, the counterinsurgent forces were conducting operations in order to combat the insurgency's ability to manipulate the population for their own cause.

The cadets also readily understood this issue, as they conducted their analysis and highlighted the significant issues within the operational environment that had the largest impact on improving the overall welfare of the population. Furthermore, they nominated targets that could deteriorate the insurgent's ability to influence the population.

Summary of How the Cadets' Responses Relate to the Historical Counterinsurgencies

The cadets demonstrated through both their responses in the interviews and the products they produced during the case-based scenario that they understood how the CTIAP affects the insurgent's ability to conduct operations in a COIN environment. They demonstrated a certain understanding that conventional military forces need to focus on improving the operational environment rather than on conducting large force-on-force engagements. In addition, they understood that there really was not a specific conventional operation that, if conducted, would defeat an insurgency. Rather it was a larger effort of removing the insurgents from the population, denying their ability to manipulate the operational environment, and improving the welfare of the populace.

Separating insurgents from the populace has been challenging in today's environment. This calls for clarity of analysis, focused collection, and meaningful targeting that incorporates both lethal and nonlethal capabilities in a united effort to

improve the operational environment. The CTIAP provides ways to identify potential insurgents and criteriologically evaluate reporting in a manner that can not only lead to better targeting, but also deny the insurgent's logistical efforts.

Finally, the most significant aspect of a COIN is removing the causes of the insurgency. Improving the operational environment in a manner that provides for the populace-at-large denies the insurgents the ability to recruit, and ultimately affects the insurgents' motivation and goals. Removing the insurgents' ability to manipulate the population is an important effort that simultaneously improves the operational environment. In these examples, there was a natural inverse relationship between the insurgents' goals and the counterinsurgents' efforts when battling for the hearts and minds of the people.

The Panel of Experts' Responses Relating to How the CTIAP was Effective in Counterinsurgencies as Related to Historical Counterinsurgencies

The panel of experts provided insight as to how the CTIAP would be effective in counterinsurgencies. I will highlight and discuss these insights in relation to the historical counterinsurgencies previously discussed. The three major themes that arose from the panel of experts (all of whom seemed to agree on the issues) were: (1) the PMESII-ASCOPE interface helps ensure intelligence analysts are focused on the operational environment and its impacts on the insurgents, (2) integrated targeting, lethal and nonlethal, ensures that all aspects of the warfighting functions are focused toward improving the operational environment, and (3) the focus of the CTIAP needs to be applied at the right level of command.

The PMESII-ASCOPE Interface Helps Ensure Intelligence Analysts are Focused on the Operational Environment and its Impacts on the Insurgents

All of the members of the panel of experts were in complete agreement that the single largest contribution of the CTIAP was the PMESII-ASCOPE interface. All respondents felt that the interface ensured that the cadets' analysis originated with and maintained an understanding of the operational environment. They further went on to explain that the unit commander should be providing direction that synchronizes the goals of accomplishing the assigned mission, which in turn should allow the intelligence analysts the ability to maintain their focus while analyzing the operational environment. They all felt that the PMESII-ASCOPE interface was the best product that they have seen to date that helped ensure that intelligence effort was focused along these lines.

The one area that the panel of experts expressed concern with was that the intelligence analyst must constantly update their information in the PMESII-ASCOPE interface, as the COIN battlefield is fluid and dynamic. This was an area that many of the panel members felt that intelligence analysts frequently dismiss when they are busy and challenged by the daily rigors of combat.

Integrated Targeting, Lethal and Nonlethal, Ensures all Aspects of the Warfighting Functions are Focused Toward Improving the Operational Environment

A common theme expressed by all the members of the panel of experts was that units frequently fail to integrate lethal and nonlethal targeting into the larger objectives of the unit. One member described his experiences relating to this concern, "...the targeting meeting had all the typical lethal fire members present almost daily, while the nonlethal effort met once a week in the far corners of the headquarters without key members of the staff". All the members described similar situations, and few related any positive experiences when discussing their experiences with integrated lethal and nonlethal efforts. This was an extremely important finding, as one of the key functions of the CTIAP was to enable lethal and nonlethal targeting integration into operations.

The Focus of the CTIAP Needs to be Applied at the Right Level of Command

One of the key aspects of the CTIAP was that lethal and nonlethal targets should be executed as simultaneously as possible; in fact, many lethal targets should have nonlethal operations built into them in order to maximize the impact of the operational environment. During my first interview with one of the panel of experts, the member stated that in his opinion the CTIAP requires a significant force to execute properly. While we discussed what this strength requirement would be, he stated that he felt a battalion could conduct up to three targets given their personnel authorizations, but to fully realize the value of the CTIAP a brigade-sized unit would be more suitable.

I added this as a question for the remaining interviews with the panel of experts, and all agreed that a brigade did seem to be the most appropriate level for full implementation of the CTIAP, but that a battalion or even lower-sized unit still could focus on utilizing the process. Furthermore, one of the members mentioned that it is rare for a battalion to conduct more than three operations in one day anyway, or that a company would conduct more than one a day. Therefore, while the CTIAP seems to fit best with a brigade or larger unit, this did not seem to be an issue that the panel felt would hinder its implementation at any echelon.

Summary of the Panel of Experts' Responses Relating to How the CTIAP is Effective in Counterinsurgencies

The panel of experts' responses relating to how the CTIAP is effective in a COIN environment is reflected in both of the historical COIN examples. The PMESII-ASCOPE interface provides the counterinsurgent forces the ability to separate the insurgents from the population by identifying key nodes that are essential to the insurgents that can be influenced by the counterinsurgents. Another example shown in the historical counterinsurgencies was that the insurgents need the local populace for logistical support, and denying those resources leads to desperation by the insurgents that the counterinsurgent forces can leverage to engage the insurgent.

The integration of lethal and nonlethal targeting was very clearly demonstrated. The building of infrastructure that provides benefits to the local populace was an example of how counterinsurgent forces can gain the trust of the people, which leads to intelligence gathered from grateful citizens that do not want the violence that accompanies insurgencies. Many targets also contain both lethal and nonlethal implications to the operations that are conducted executing the targets. As the British Malayan conflict demonstrated, insurgents can also hold key or high ranking positions in the community. If a targeted insurgent is also a key member of society, then the counterinsurgent forces need to identify someone to fill the vacated licit role of the targeted insurgent.

A key insight provided by the panel of experts was the identification of the right unit echelon at which the CTIAP could be fully integrated. The panel of experts unanimously agreed that the brigade was the lowest level that has the personnel to execute all targets near simultaneously. This is an important aspect, as previously discussed with targeting; there could be multiple actions that would require specialized skills found at the brigade level and above. For instance, a civil affairs section is typically found at the brigade level and above, and when a unit is targeting an insurgent like one that was previously used as an example, the civil affairs section can assist the unit commander in identifying the prospective candidates.

Summary of the Findings

This study has demonstrated that a critical thinking-based framework can improve intelligence analysis in order to provide holistic, comprehensive, and unbiased assessments. Specifically, the CTIAP is the process that was utilized by a group of five cadets from the United States Military Academy at West Point who conducted analysis of a case-based scenario and produced the corresponding products. Semistructured interviews were conducted with the cadets, the products were presented to a panel of experts, and then subsequent semi-structured interviews were conducted with that same panel. What all of the interviews specifically expressed was that the CTIAP did indeed improve intelligence analysis in a holistic, comprehensive, and unbiased manner.

The cadets unanimously agreed that the CTIAP provided an organized and meaningful way to understand the operational environment, conduct predictive analysis, and build specific and integrated lethal and nonlethal targets. The panel of experts reflected the same opinion that the CTIAP was a tremendous improvement over current doctrinal processes, and they routinely mentioned that the products the cadets produced reflected the work of a very seasoned intelligence analyst.

The study of successful historical counterinsurgencies further provided tremendous insight into how the CTIAP works. The historical counterinsurgencies highlighted how the operational environment is a key factor for the counterinsurgent forces to control in order to defeat the insurgents, and separating the insurgents from the populace is essential. The separation of insurgents from the rest of the population

can be achieved through controlling the operational environment, and incorporating a dynamic and comprehensive targeting strategy that attacks both lethally and nonlethally.

The study revealed five major themes from the products the cadets produced and from the individual interviews I conducted with them. These themes are reflected in the interviews with the panel of experts, and are pertinent to the research question: how does a domain-specific application of critical thinking to intelligence analysis provide a holistic, comprehensive, and unbiased assessment that is pertinent to decision makers? The five major themes are: (1) understanding the operational environment, (2) familiarization with the threat groups present in the case-based scenario, (3) details and completeness with the threat courses of action, (4) comprehensive target list, and (5) ease and comfort of using CTIAP.

Three major lessons were identified through the study of the historical counterinsurgencies, which led to success in both conflicts. The strategy was more important than the composition of forces; in fact, both conflicts showcased that conventional military forces could effectively fight an insurgency. The operational environment is the center of gravity for both the insurgents and counterinsurgent forces. Finally, insurgents need to be separated from the population in order to be defeated.

Conclusions

Finding 1 and Conclusion 1: Understanding the Operational Environment

The cadets were able to build specific and detailed analysis of the operational environment through the PMESII–ASCOPE interface. They provided products that demonstrated specificity and understanding of the complex battlefield of the COIN or counterterrorism environment. The panel of experts agreed that the cadets' products were produced to a high level of proficiency and detail, and that it was perhaps the most valuable product produced.

Ernst and Monroe (2006) examined how the environment affects critical thinking skills and dispositions, and found that critical thinking skills can indeed be cultivated by incorporating environmental considerations into instruction. The CTIAP provided a means of incorporating specific environmental considerations, and with a case-based scenario, reinforced those critical thinking skills. The products, as well as the responses in the interviews of both the cadets and panel of experts, confirmed that these critical thinking skills could be honed and applied in a domain-specific manner.

Finding 2 and Conclusion 2: Familiarization with the Threat Groups

The cadets demonstrated the ability to organize and understand the threat groups present in the case-based scenario. The products, as well as the interviews

conducted, demonstrated a thorough understanding of the tactics that the insurgents utilize. The panel of experts also responded very favorably to the cadets' products, and felt that the cadets presented the threat as if they were seasoned analysts.

A study conducted by Sungur and Tekkaya (2006) found that problem-based learning enabled students to perform at high-order thinking levels. This was definitely found to be true in this study, as the cadets were able to correlate the information produced from their PMESII-ASCOPE interface into detailed products that demonstrated how the insurgents conduct operations. This is extremely valuable if an analyst is to effectively utilize data and transform it into actionable intelligence.

Finding 3 and Conclusion 3: Details and Completeness with the Threat Courses of Action

The major findings for the details and completeness with the threat courses of action were being reflected in the products and responses in the interviews with the cadets. The cadets had developed a holistic evaluation of the operational environment and threat models of the insurgents, and produced courses of action they expected the insurgents to conduct. They also established criteria in order to identify objectives and potential areas on which they would need to focus collection. The panel of experts agreed that the cadets had provided considerable detail and useful information on the insurgents' targeting and potential collection efforts to confirm or deny these indicators.

The study conducted by Schumm et al. (2006) that was conducted at the U.S. Army Command and General Staff College found that students benefited from collaborative exercises, Socratic questioning, and domain-specific applications of critical thinking skills. The cadets' products and responses agree with the findings, as in the instruction Socratic questioning was utilized and there was considerable collaboration as vignettes were discussed during the instruction. The CTIAP reaffirmed domain-specific application of critical thinking skills, and by the time the cadets were preparing threat courses of action, they were leveraging information that was built upon layers of data that was produced through the CTIAP process.

Finding 4 and Conclusion 4: Comprehensive Target List

The cadets produced comprehensive targeting lists that prioritized and organized lethal and nonlethal targets. This was extremely important, as the targets developed become operations that have a direct impact on the overall success or failure of the mission. The cadets' targets were specific to whom or what they believed had specific impact on the insurgents' objectives. The panel of experts agreed that the targeting methodology was useful, and the recommended targets were worthwhile. The cadets also recognized the importance of reviewing the successes and/or failures of targeting and those impacts on the mission objectives.

A study conducted by Facione (1998) found that effective critical thinking instruction motivates as well as incorporates critical thinking skills. The targeting

strategy and responses of the cadets demonstrated that they were indeed motivated in learning the CTIAP as well as participating in the case-based scenario. All five cadets were willing participants, and recognized that they were learning advanced skills for their experience level and level of responsibility. The cadets and the panel of experts all recognized that targeting is one of the most important aspects of the CTIAP and operations in general, and they spent considerable time understanding and incorporating the value of both lethal and nonlethal targeting.

Finding 5 and Conclusion 5: Ease and Comfort of using the CTIAP

The cadets reported in the interviews that they felt the CTIAP was relatively easy to learn and utilize during the case-based scenario. The cadets responded that the CTIAP was organized and was very sensible in its approach to conduct intelligence analysis. The cadets were novices when it came to intelligence analysis, and they had very limited training in intelligence as a whole compared with an intelligence analyst that has 10 or more years of experience. Interestingly, the panel of experts made comments that they felt that they were looking at products produced by analysts with years of experience, and in some cases, they liked the cadets' products better than anything seen before.

A study of nursing students and their dispositions toward critical thinking skills conducted by Colucciello (1997) utilized Facione's Delphi Study (1990) to develop a framework for domain-specific application of critical thinking skills. Colucciello identified critical thinking skills, through individual assessments and evaluations could be improved. Colucciello's research, along with Facione's (1998) research on motivation in critical thinking instruction, demonstrated how students not only develop critical thinking skills, but they can be improved, assessed, and provide motivation through domain-specific application of cognitive skills that are built into usable frameworks. The cadets' products and interviews demonstrated significant motivation, comparable to the level of a seasoned analyst.

Finding 6 and Conclusion 6: Strategy Focus on Insurgents (or Terrorists)

Both the Philippine-American War and British Malaya demonstrated how important it was to develop an effective strategy to fight an insurgency. In both historical examples, conventional forces were organized and utilized to fight an insurgency. The strategy was tailored to fight the insurgents in relation to their objectives, and the conventional forces were utilized in a manner consistent with the goals of the strategy. The conventional forces were not necessarily trained and organized to fight an insurgency, but as the right commanders ensured the appropriate strategy was communicated, the counterinsurgent forces became very effective in denying the insurgents the ability to achieve their goals.

In Schadlow's (2010) study of organizing the political terrain, she argues that military forces need to incorporate effective efforts when fighting insurgents. She

further argues that political and economic factors need to be incorporated into the military effort, but recognizes that military forces need to adapt in order to deny insurgents their goals and objectives. Schadlow's arguments were very important and were reflected in both historical examples, and reaffirmed the necessity to develop a sound COIN strategy with the forces available to them.

Finding 7 and Conclusion 7: The Operational Environment is the Center of Gravity

Both historical examples highlight the importance of the operational environment, and confirm that it is the center of gravity to the success of the insurgents. In both examples, the counterinsurgent forces denied the insurgents their ability to target governmental functions (after an effective strategy was in place), and other areas that supported the insurgents' goals. By focusing on the operational environment, the insurgents lost their ability to manipulate the situation that affected both the populace and the government, as counterinsurgent forces denied the insurgents' freedom of movement and ability to continue disrupting necessary goods and services. Members of the panel of experts pointed out that the strategy was immensely important, and even to the detail of indicating at what echelon the CTIAP should be implemented. The consensus was that the CTIAP could be implemented partially at all echelons, but for full implementation, it would need to be at the brigade and higher levels.

Henry Nuzum (2010) argued this same point when he examined the Vietnam War. He found that intelligence analysts need to understand and leverage the operational environment in their analysis, and then the goals of the insurgents become clearer. The historical examples agree with Nuzum's argument, as the operational environment is indeed the center of gravity, and the analysis should focus on ways to deny or influence the insurgents' objectives.

Finding 8 and Conclusion 8: Separate the Insurgents from the Populace

Perhaps the most important finding in both historical counterinsurgencies was the separation of insurgents from the population in contributing to the successful war efforts. In both examples, after the insurgents were physically separated from the populace the counterinsurgent forces were able to effectively find and ultimately defeat them. It was also important to note that the manner in which the insurgents were separated would not necessarily be readily embraced today, but the lesson remains: the insurgents need to be separated from the population.

Both Schadlow's (2010) and Nuzum's (2010) research argue the importance of leveraging factors of the operational environment to combat an insurgency. As previously noted, their arguments were sound, but they can also provide an intelligence analyst the ability to find indicators of insurgent activity. The CTIAP specifically focuses on establishing criteria in reporting in order to assess the quality of information based on sources of data. This may prove effective for an intelligence analyst in recognizing the insurgents' objectives and focusing collection on those indicators. The separation of

insurgents from the populace can be found in aspects of the operational environment that need attention and constant deliberation in order to build and recognize those indicators.

The cadets were able to identify these lessons in their conduct of the analysis produced in the case-based scenario. Their focus on the operational environment demonstrated that they recognized that influencing the PMESII and ASCOPE factors in the counterinsurgent forces' favor provided those forces a marked advantage. Further, the cadets built their objectives and enemy templates through areas within the operational environment that the insurgents would attempt to control, influence, or manipulate based on their *modus operandi*.

The cadets were also able to focus on arguably the most important aspect learned from the study of historical counterinsurgencies: separating the insurgents from the populace. The assessments produced provided various techniques that could either physically separate the insurgents from the populace, or potentially highlight indicators that could be collected in order to separate the insurgents. Through the separation of the insurgents, the intelligence analyst gains a position of advantage, as precision targeting is naturally more effective as it maintains a separation from the populace at large. Finally, the separation of insurgents from the populace allows a greater ability for the counterinsurgent force to apply both lethal and nonlethal targeting operations more effectively, and allows a more coherent way to assess achievement.

The CTIAP, an analytical framework built from the six critical thinking cognitive skills identified through Dr. Facione's Dephi Study (2010), provided the cadets the ability to incorporate critical thinking skills into a holistic, comprehensive, and unbiased assessment that could be useful to decision makers. The CTIAP effectively incorporated the operational environment into a single product that can be used to focus counterinsurgent strategies that have demonstrated success in historical studies. A panel of experts received the products of the analysts with great praise, and acknowledged that the CTIAP was a significant improvement in the conduct of intelligence analysis. Finally, all of these aspects demonstrate that effective COIN is fought over the operational environment where the insurgents and their goals can be combated both lethally and nonlethally.

Recommendations

There are many recommendations that I could focus on in order to continue both improving the CTIAP or encouraging effective ways to build critical thinking frameworks that may benefit intelligence analysis. There are two areas that I recognized over the course of my study that probably need the most attention: the proper echelon where the CTIAP could be fully integrated into real-world application and assessment of the CTIAP, and conventional warfare aspects that could be improved through the CTIAP or a similar model.

One issue that arose during my interviews with the panel of experts was the echelon in which the CTIAP should be implemented for full effect. The echelon issue

arose during my very first interview with a member of the panel of experts, and was addressed during my second interview. I quickly added it as a discussion in the last three interviews. All five members of the panel felt that this issue needed further exploration. In addition, all five also felt that they believed the brigade level would probably be the lowest level for full implementation. They did believe that the battalion level could implement the CTIAP, but for full implementation, where all targets could effectively be influenced by all aspects of military capabilities (lethal and nonlethal), brigade was the lowest level that could accomplish that feat.

The second area that needs additional research is the CTIAP's usefulness and potential when applying the process to a conventional force-on-force scenario. The CTIAP was specifically built for application in either a COIN or a counterterrorism environment. The specific build of the PMESII-ASCOPE interface to define the operational environment would not apply to a conventional scenario. There may be methodologies for the conventional environment, but that would indeed require additional research, testing, and evaluation. I believe it would be important to conduct an evaluation of the CTIAP or another critical thinking-based process that could provide holistic, comprehensive, and unbiased assessments in a conventional environment.

I speculate that one area needing special attention in the conventional environment may be the aspect of time. In a conventional environment, events on the battlefield may be fluid and rapid, with little time to second-guess or spend considerable amount of time trying to determine what a specific indicator might mean. Further, there may also be little time to evaluate conducting one operation over another. Regardless, incorporating critical thinking skills has shown to be effective in the CTIAP. For military intelligence instructors, a framework incorporating critical thinking skills in a domain-specific manner applied to the conventional environment may prove to be a worthwhile and valuable way to train intelligence analysts. This additional research would be important, and may result in saving lives.

An additional consideration needs mention, and that is the study of historical counterinsurgencies. This study examined two successful counterinsurgencies in order to understand factors that could lead to understanding the value of the CTIAP. Additional studies should be conducted that examine unsuccessful counterinsurgencies in order to identify the lessons that could be incorporated for future counterinsurgencies.

If future intelligence analysts utilize the CTIAP, they should consider a few issues prior to initiating their analysis. First, the CTIAP was built for COIN or counterterrorism operations. If an intelligence analyst finds himself or herself in a conventional war or peacekeeping operation, that analyst should understand that the CTIAP might not provide the level of detail as it does for a COIN or counterterrorism environment. Another issue for an intelligence analyst to consider is that the CTIAP is flexible. The process may need to be modified for a specific mission, and the analyst needs to understand the value of defining the operational environment prior to building insurgent or terrorist templates. The CTIAP may prove to be a worthy process to focus operations, which may result in increased effectiveness.

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