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Chasing Relevance: Building Actionable Intelligence Analysis

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About the Forum

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Abstract

The US Air Force currently possesses the resources and talent to revolutionize its intelligence analysis capabilities. However, the service lacks an adequate foundation in current doctrine for how to collectively apply analytical principles to its mission, from the operational to the tactical level.

In order to be relevant, improvements must address the fundamental issue: how to deliver intelligence analysis to a decision maker exactly when needed. Four interlocking concepts are vital to making intelligence analysis actionable. These are: properly defining intelligence analysis, strengthening the process of analysis by understanding and applying the competing theories of intelligence, building a model for the effective delivery of actionable intelligence to decision makers, and focusing roles and responsibilities to build an analytical enterprise. This paper proposes intelligence analysis is properly defined as answering questions about an adversary for a decision maker, and that intelligence analysts can best facilitate this through adopting the "capabilities theory" as the core guiding principle of Air Force intelligence analysis to facilitate the orientation needed by decision makers.

However, this change will mean altering our analysis focus from predicting intent to identifying changes in enemy location and strength as the primary method of delivering combat relevant intelligence. By doing so, USAF will improve its intelligence enterprise and generate the decision advantage commanders need to succeed in 21st century conflict.

Introduction

The US Air Force currently possesses the resources and talent to revolutionize its intelligence analysis capabilities. However, the service lacks an adequate doctrinal foundation for how to apply analytical principles collectively to its mission from the operational to the tactical level.

This is synonymous with building an elegant house on the beach without a foundation; the house is unable to weather a storm without cracking or collapsing completely. This inadequate foundation is precisely what makes current analysis ineffective at delivering decision advantage to US military personnel in leadership positions, and at the leading edge of combat. When commanders ask for better analysis, they are not asking for more information. Rather they are asking for actionable intelligence, and the right information to make decisions.

In order to be relevant, improvements must address the fundamental issue of how to deliver intelligence analysis to a decision maker exactly when needed. A decision maker is defined here as anyone who requires knowledge of the adversary for decisions. The term applies to everyone from security forces and pilots to planners and commanders. Four interlocking concepts are vital to making intelligence analysis actionable:

1. Properly defining intelligence analysis
2. Strengthening the analysis process by understanding and applying the competing theories of intelligence
3. Building a model for the effective delivery of actionable intelligence to decision makers
4. Focusing roles and responsibilities to build an analytical enterprise

This paper asserts that intelligence analysis is best defined as answering questions about an adversary for a decision maker. Further, it argues that analysts can best facilitate this through adopting the "capabilities theory" as the core of Air Force intelligence analysis at wings and in air and space operations centers (AOCs). However, Air Force intelligence analysts must also be effective at applying additional theories (i.e., "descriptive," "expectations," and "intentions") to answer the myriad questions required to plan and execute operations. Finally, intelligence analysts must divorce themselves from defining their roles according to the quantity of sources they utilize and should instead focus on maximizing their strengths according to their analytical function.

Defining Intelligence Analysis

Before any attempts to improve intelligence analysis can begin, the Air Force must synthesize a definition for the role of an intelligence analyst. Sun Tzu's depiction of warfare and victory is summarized eloquently in his description of the relationship between knowledge of the adversary and of one's own forces: "Know yourself and know your enemy," wrote the famous Chinese general, military strategist, and philosopher of the fifth and sixth centuries B.C. "You will be safe in every battle. You may know yourself, but not know your enemy. You will then lose a battle for every one you win. You may know neither yourself nor your enemy. You will then lose every battle."[1] To be even more concise, victory requires knowing the adversary (i.e., intelligence) and knowing oneself. Therefore, intelligence in its basic form is knowledge of the adversary.

While this knowledge is required, for it to be effective, the Air Force must tailor it and deliver it exactly at the right moment. If decision makers need to gain understanding or knowledge of an adversary, then they must have questions that, when answered, will provide the necessary information to attain victory. This brings forth the definition of intelligence analysis: to answer questions about an adversary for a decision maker. The specific analytical technique used to generate these answers is irrelevant to the decision maker. What matters is attaining the knowledge of the adversary to assure victory.

This definition identifies intelligence analysis as the core, or purpose, of all intelligence. The *Merriam-Webster Collegiate Dictionary* defines analysis as the "separation of a whole into its component parts" or as "an examination of a complex, its elements, and their relations."[2] Put simply, analysis breaks something down into its component parts to gain understanding to answer a question. The theories utilized to answer those questions are where the Air Force will gain the improvements its commanders seek.

Answering Questions Using Intelligence Theories

How intelligence analysts answer questions is as important as the meaning of intelligence. Army Brig Gen Oscar W. Koch, intelligence chief to Gen George S. Patton Jr. during World War II, identified this central argument as being "as old as intelligence itself."[3] Examining other disciplines, such as diplomacy or economics, oftentimes reveals the concurrent use of multiple theories of analysis to answer questions. The field of intelligence should be no different. But in the past, this examination has often succumbed to arguments for or against one of the three primary intelligence theories: descriptive, capabilities, and intentions (and eventually, expectations theory). This paper does not argue which theory to use. Instead, what follows is an examination of how to apply each school of thought concurrently, at the different levels of war.

The first, and easiest intelligence theory to understand, is ***descriptive theory***. Simply stated, descriptive theory provides commanders with the facts and lets them generate their own estimates.[4] Application of this theory is well-suited for the tactical level of war where the cycle of decision-making is fast and the time for analysis is limited. However, if used alone, an analyst may become too concerned with details while missing the bigger picture; be overly reliant on facts while forgetting to account for logical assumptions; and might eliminate additional questions to analyze due to a lack of information collected.

Capabilities theory is centered on providing two essential items to the commander: enemy location and strength.[5] As Koch identified, "No matter what the intentions of the enemy might be, he must have the capabilities to execute them; the converse is not true. He may have the capabilities and yet not execute them for reasons of his own."[6] The adversary's location and strength are the foundational elements needed to identify centers of gravity as well as exploitable weaknesses from the tactical to the operational levels of war.

A thorough analysis can even allow an analyst to prioritize the adversary's capabilities from most to least dangerous in relation to friendly courses of action. However, if analysts are too focused on identifying adversary capabilities, then they may not be able to answer other pressing questions or may become too reliant on numbers for their assessments.

The third prominent school of thought is ***intentions theory***, which aims to predict adversary intent or the most likely course of action. The lure of predicting intent, or attempting to predict the future, promises great rewards at the operational and tactical levels. But the nature of warfare at or below the operational level is extremely dynamic, constantly changing, and wrought with denial and deception at a faster rate than at the strategic level. It is an environment not suited to intentions theory.

So why has the joint force adopted intentions theory as the core theory for intelligence support of warfare? Because the payoffs are seductive: get inside the adversary's mind and one can defeat him with ease. However, as then-Army Col Elias C. Townsend identified following World War II, "[Military] intelligence officers become their own worst enemies when they use the information they get in an attempt to make predictions, determine intentions, or just plain guess. This is the most serious fault in our combat intelligence operations."[7]

Another problem with relying solely on intentions theory is the adversary always gets a vote. Just as Air Force commanders will observe and modify their plans based on adversary activity, so too can the adversary. Even if the initial prediction of adversary intent were correct, the prediction could become invalid due to the interaction of war and the adversary's adaptation to friendly movements.[8] Therefore, intentions theory is best suited for the strategic levels of conflict where the pace of change is less dynamic. However, decision makers on the battlefield still want to know more than simply what the adversary is doing, so another theory is needed to "straddle the fence" between capabilities and intentions theory.[9]

Enter ***expectations theory***, which came along to fill the gap between identifying adversary capabilities and predicting adversary intent. Since focusing solely on capabilities or intent leaves significant room for error, expectations theory characterizes adversary trends to anticipate future actions and identifies deviations in trends to isolate changes in strength. While this theory sounds

similar to analyzing intent, the critical difference is it characterizes what an adversary has done in order to anticipate future activity, or it identifies what has changed from established trends. Intentions theory, for its part, forecasts what an adversary will do in the future. The difference is easily visible in financial analysis where consumer purchases or sales are based upon trends in a stock's activity rather than predictions of consumer intent.

Trends are extremely beneficial for decision makers since they establish an expectation during planning by identifying an adversary's priorities. Any deviation from established trends often identifies changes in behavior or motivation. For example, if an adversary is increasing his capabilities, expectation theory helps to identify the amount of increase in strength and establishes a trend from which to expect future increases. This enables a decision maker to adjust planning factors to account for the expected change.

The drawback of expectations theory is that, like capabilities theory, analysts can become too reliant on numbers without accounting for other less-quantifiable factors. It is also time consuming, is less adaptive to rapidly changing environments, and is especially susceptible to conditioning (e.g., establishing patterns of behavior to mask true intent, such as flying similar routes along a border to desensitize an adversary towards future operations) and other denial and deception techniques.

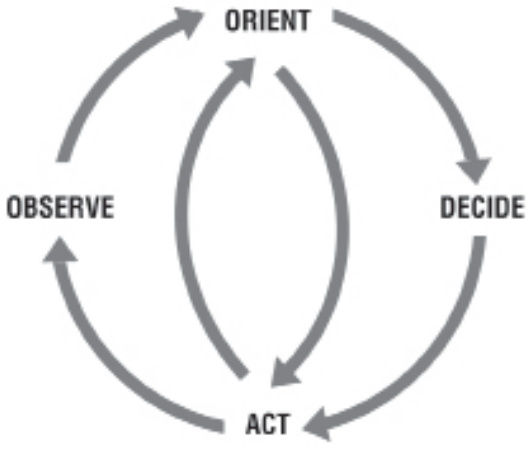

Figure 1: Col John Boyd's OODA Loop. As all four phases of the decision-making cycle are happening, what matters most is how quickly one can re-orient and then act.

While the singular use of intelligence theories does not enable an analyst to adequately answer the range of questions during military planning, their combined effect does provide the necessary framework. Therefore, intelligence analysts must be able to answer questions covering all four theories of intelligence. However, the analysts must prioritize analytical effort on adversary capabilities while relying on other agencies to provide assessments of intent.

Expectations theory, when applied in a continuous, sustained manner, enables analysts to identify changes in location and strength over time and better prioritize the adversary's capabilities. When information or data are not available to derive trends necessary for expectations theory, analysts should put their full weight of effort into depicting the location and strength of the adversary. If a new threat or problem arises that doesn't fit into previous models, then analysts must rely on descriptive theory and provide the facts until they can determine location and strength. The ability of analysts to utilize the different theories of intelligence concurrently will greatly increase analytical quality, but they must still tailor the information for a decision maker for it to be effective.

Delivering Intelligence Analysis

Utilizing intelligence theories to answer a decision maker's questions is not enough to improve intelligence analysis. Applying the four theories to a decision-making process, such as Air Force Col John Boyd's famous Observe, Orient, Decide, and Act (OODA) Loop (see Figure 1), does provide a framework to deliver answers about an adversary exactly when they are needed. Boyd created the OODA Loop to explain winning and losing in conflict; initially, he used air-to-air combat engagements to showcase the model.

Common misconceptions of the OODA Loop are that it is solely about tempo and information, and that a commander with information superiority can achieve victory by progressing through the loop faster than the adversary—thereby getting inside the adversary's own OODA Loop.[10] While Boyd often referenced speed in making decisions many times in his works, he also recognized the need for variations in tempo or variety in rhythm.[11]

This helps explain the need for dynamic as well as deliberate planning cycles. Therefore, intelligence analysis must have an adaptable framework for different decision-making tempos.

More importantly, the OODA Loop is less about decision-making than "a model of individual and organizational learning and adaptation in which the element of orientation … plays the dominant role," wrote Frans P.B. Osinga in his book *Science, Strategy and War: The Strategic Theory of John Boyd*.[12] To effectively orient a decision maker to the disposition of the adversary's forces, analysts must characterize the adversary's strengths and weaknesses and incorporate multiple variables, such as readiness, training, logistics, and attrition.

Additionally, "Boyd emphasizes the *capability to validate* [emphasis added] the [orientation] before and during operations and *the capability to devise and incorporate new ones* [emphasis added], if one is to survive in a rapidly changing environment," wrote Osinga.[13] Therefore, if the role of intelligence analysis is to provide the timely and accurate orientation of an adversary's capabilities for decision advantage, then the capabilities theory of intelligence must be the foundation of operational and tactical intelligence analysis. However, analysts cannot use capabilities theory alone; they must build upon it utilizing the descriptive theory during the OODA Loop's observe phase, as seen in Figure 2.

The task of analyzing and depicting adversary activity is rooted in descriptive theory since it identifies and documents an adversary's actions. The outputs are primarily focused on recording facts and are essential for establishing baseline and trend activity. This is where the plan, collect, process, analyze, and disseminate (PCPAD) cycle occurs within intelligence circles. Questions answered during the observe phase focus on what the adversary has done in the past. While certain observations, such as changes in force disposition, are immediately moved to the OODA Loop's orient phase, not all observed activity is identifiable as a change in location or strength.

Applying expectations theory next bridges the gap between the observe and orient phases by analyzing and depicting adversary trends to identify changes in adversary capabilities. The goal is to depict changes in behavior as well as identify strengths and weaknesses prior to, and during, a conflict. Questions answered utilizing expectations theory focus on what analysts expect an adversary to do based on current trends, so that analysts can quickly identify any variances from those trends. The results help identify changes in capabilities and re-orient the decision maker.

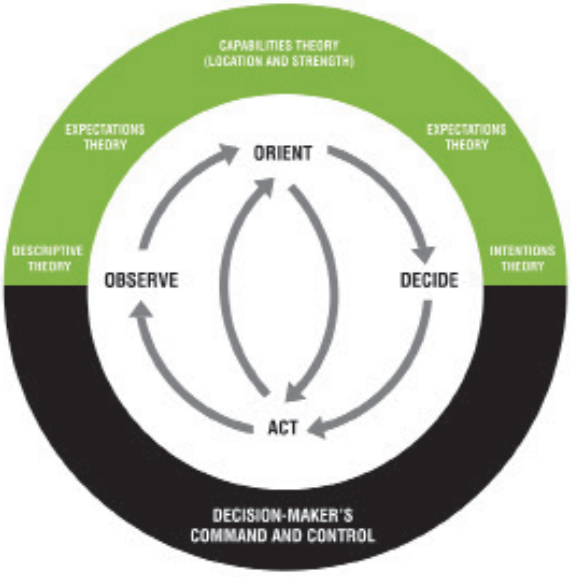

Figure 2: The application of intelligence theories to Boyd's OODA Loop.

After depicting capabilities and completing the orientation, prioritizing the capabilities for targeting or collection purposes provides maximum effect against adversary forces, especially when friendly resources are limited, and helps minimize the transition time from the OODA Loop's orient phase to its decide phase. The results from the application of capabilities theory provide the basis for the prioritization, but applying expectations theory helps identify an adversary's tendencies, or motivation, to choose one capability over another. Questions answered during this time provide an assessment of which capability is most dangerous or least dangerous to friendly forces. The final product provides the foundation for assisting planners to mitigate the adversary's capabilities.

The final step of intelligence analysis in supporting a decision maker is to assist in planning. During this process, analysts should have an accurate and prioritized depiction of adversary capabilities, but should now seek out assessments on an

adversary's intent. The application of intentions theory at the OODA Loop's decide phase helps decision makers and their planners understand how the adversary's capabilities fit into his overall strategic intent. Operational and tactical intelligence analysts should avoid focusing on attempting to examine an adversary's intent themselves, since most lack the expertise to do so accurately. Rather, coordination on questions regarding intent should occur with analysts at a joint intelligence operations center (JIOC) or other analytical organization where integration with national intelligence agencies and the presence of experts with 10 to 20 years of experience will generally lead to the creation of a more accurate estimate of what an adversary will do.

This model is directly applicable to analysts at Air Force wings and in AOCs. By focusing the mission priorities within Air Force organizations according to this model, the service can collectively answer the full spectrum of questions encountered. For example, imagine a scenario where a near-peer adversary moves a significant amount of air and air defense assets to a politically contested area. Analysts working in the Air Force's Distributed Common Ground System (DCGS) process and exploit multiple sources of intelligence and utilize the descriptive theory to fuse intelligence into a single product, describing the events that have occurred. This information, when passed to the analysis, correlation, and fusion (ACF) team within an AOC, is correlated with other sources and assessed according to capabilities theory to determine the extent of changes to the adversary's location and strength.

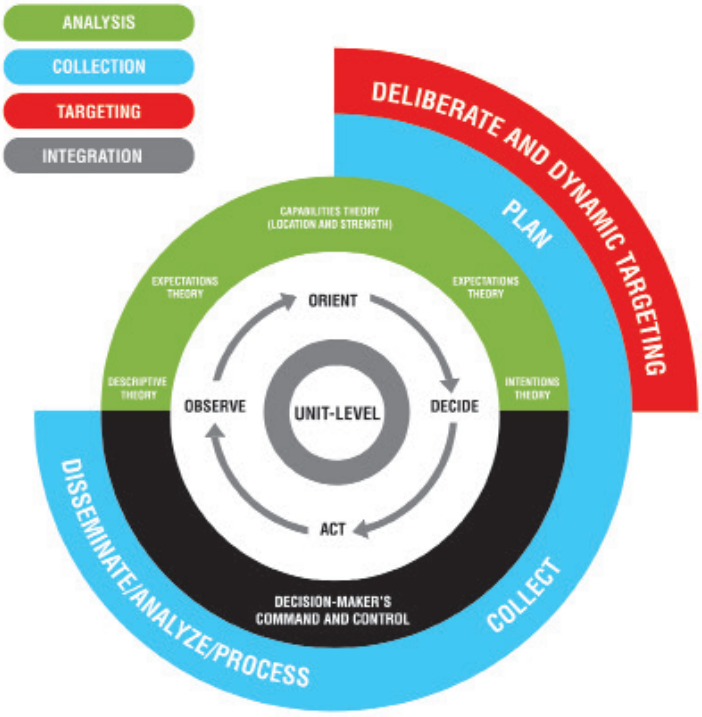

Figure 3: Air Force intelligence functional competencies aligned to Boyd's OODA Loop.

This work updates the orientation of forces in the area of responsibility (AOR), and when utilized with expectations theory, identifies if the adversary's activity falls into previous trends or is an abnormal event. Finally, close collaboration with a JIOC and with the 547th Intelligence Squadron at Nellis AFB, Nevada helps analysts to evaluate and assess the intent of the adversary's movements (the 547th IS analyses adversary tactics and provides threat expertise, linking tactical and operational units with the US Intelligence Community). This information is consolidated and distributed to Air Force wings within the AOR, which tailor it to their specific missions.

The cumulative effect of these focused analytical efforts is the ability to answer questions using all four theories collectively. When a commander asks about what happened, an analyst, after combining the assessments, can state what has moved, the extent of change to the adversary's capabilities, whether one can expect additional activity based on previous trends, and the adversary's possible intent. Analysts throughout an AOR can provide an assessment that fully answers the primary question without expending the analytical effort to answer each area separately. This frees up resources for Airmen to focus on the additional questions directly relevant to their individual missions.

Establishing Analytical Roles

While applying theories to answer a decision maker's questions brings the Air Force closer to improving its intelligence analysis, the service must also address how to maximize its analytical capabilities and eliminate redundancies. To be effective, the Air Force needs to divide analysis into functional roles that complement one another and provide checks and balances instead of focusing solely on how many forms of intelligence each analyst uses.

The Air Force needs organizations, such as the DCGS enterprise, to use all available sources to focus on identifying what occurred during the OODA Loop's observation phase while accounting for factors such as denial and deception. Meanwhile, the ACF team needs to put its weight of effort into correlating all available observations and building an effective orientation of the adversary's location and strength. This is critical since it is the foundation for effective operations in an AOR. Not only are all targeting, collection, and planning efforts dependent on this orientation, but the role of integration hinges on its accuracy and timeliness (see Figure 3). Finally, the 547th IS can provide the continuity and trend data to each organization while liaising with JIOCs and national agencies on estimates of intent.

Although the Air Force should establish roles in order to get the most out of its analytical efforts, the analysts performing these duties must collaborate in order to maximize effects and provide checks and balances. The orientation of capabilities serves as the foundation for all organizations and, therefore, analysts should consistently feed and update this orientation as fast as possible. Analysts should challenge strategic assumptions or estimates made by national agencies or in JIOCs if tactical indicators observed in the DCGS contradict the standing estimates.[14] Conversely, if observed tactical indicators identify an adversary's possible intent, the analysts should immediately communicate them and incorporate them into new estimates.

Expectations and trends help focus analysis and collection efforts in the DCGS and in an AOC's Intelligence, Surveillance, and Reconnaissance (ISR) division. Analysts can generate these new expectations and observations at any level to aid their ability to detect change. The result is a combined analytical effort that maximizes strengths while consistently adapting to new information.

Conclusion

In order to gain relevance, Air Force analysts must learn how to apply the multiple theories of intelligence to answer decision makers' questions. Focusing analytical capacity at the operational and tactical levels to provide the timely and accurate orientation of an adversary's capabilities, while collaborating with other organizations to provide expectations and estimates of intent, is how analysts generate the decision advantage commanders require.

If the Air Force fails to focus on maximizing its analytical capacity and instead continues concentrating solely on attempting to predict an adversary's intent, the service will be the proud owner of a broken watch that will only be right twice a day. This change requires us to alter how we think about intelligence. The resources, personnel, and talent are already in place; now the service requires the right foundation to get started. The logical next step towards this goal is to identify and document the tactics, techniques, and procedures already developed and put them to use today to strengthen the service's analytical capabilities.

Footnotes

1 Gary Gagliardi, *Sun Tzu's The Art of War Plus The Ancient Chinese Revealed* (Seattle: Clearbridge Publishing, 2007), 39.

2 *Merriam-Webster Collegiate Dictionary*, 11th ed., s.v. "analysis."

3 Oscar W. Koch and Robert Hays, *G-2: Intelligence for Patton* (Atglen, Pa.: Schiffer Publishing, Ltd., 1999), 56.

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5 Elias Carter Townsend, *Risks: The Key to Combat Intelligence* (Harrisburg, Pa: The Military Service Publishing Company, 1955), 6.

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9 Davis, "Predictive Intelligence: Do We Really Need It?"

10 Frans P.B. Osinga, *Science, Strategy and War: The Strategic Theory of John Boyd* (New York: Routledge, 2007), 233.

11 Ibid., 236.

12 Ibid., 235.

13 Ibid., 236.

14 Richards J. Heuer Jr., *The Psychology of Intelligence Analysis*, 1999, 74-75, https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/books-and-monographs/psychology-of-intelligence-analysis/, accessed on March 16, 2016.

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