

Enhanced Briefing: Increasing Situational Understanding using Cognitive Theories and Communications

A Monograph

by

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Abstract

Enhanced Briefing: Increasing Situational Understanding using Cognitive Theories and Communication, by MAJ Joshua M. Blanc, US Army, 47 Pages.

US Army commanders leading in multi-domain operations (MDO) are inhibited in rapid decision making due to an overabundance of information in the operational environment (OE). Additionally, US Army presentation methods lack the ability to properly display and communicate information for quick consumption and efficient decision making. Intelligence professionals serve crucial roles as informers of situational understanding and conduits of key decision making. Intelligence professionals can enhance their abilities by knowing cognitive theories and communications, providing a pivotal advantage to the commander and organization. This topic is approached in three major focus areas, doctrine, cognitive theories, and communications. Doctrine is evaluated, establishing an understanding of the roles of the commander, staff, and the intelligence professional. It also examines the evolution of knowledge management to build situational understanding, the operations process, and doctrinal shortcomings in communications and military briefings. This monograph addresses cognitive theories to include: thinking, learning, learning myths, dual coding theory, cognitive load theory, and the naturalistic decision making theory. Communications examined include: theories, processes, and methods, with additional detail on rhetoric, message context, brevity, persuasion, and influence, common lexicon and elements of visual presentation. The significance of an intelligence professional understanding cognitive theories and communications will promote increased learning through impactful message delivery. Improved briefing methods within an organization, using oral and visual presentation will furthermore result in enriched situational understanding for faster, efficient, and effective decision making in an increasingly complex multi-domain environment.

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Abbreviations

ADP	Army Doctrine Publication
BLUF	Bottom Line Up Front
BUB	Battle Update Brief
COA	Course of Action
EMS	Electromagnetic Spectrum
EW	Electronic Warfare
FM	Field Manual
GRINTSUM	Graphic Intelligence Summary
IC	Intelligence Community
IPB	Intelligence Preparation of the Battlefield
INTSUM	Intelligence Summary
JP	Joint Publication
MDMP	Military Decision Making Process
MDO	Multi-Domain Operations
MI	Military Intelligence
OE	Operational Environment
OPORD	Operation Order
PIR	Priority Intelligence Requirement
TED	Technology Entertainment and Design

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Introduction

US Army commanders leading in multi-domain operations (MDO) are treading water in a sea of information, paralyzing rapid decision making. Commanders need intelligence professionals to provide operational environment (OE) information and assessments leading toward faster, efficient, and effective decisions. Intelligence professionals can enhance their abilities in this instance by knowing and applying cognitive theories and communications. Cognitive theories include how people think, learn, and decide. Communications include theories, processes, and methods. Furthermore there must be a baseline understanding of doctrine to include the OE, staff roles, processes, and shortcomings. Knowing cognitive and communication theories enhances intelligence professionals to present the commander with essential information thus increasing situational understanding and allowing for faster decision making in the intensively complex multi-domain environment.

The methodology for this monograph consists of three major focus areas, doctrine, cognitive theories, and communications. Doctrine is evaluated, establishing an understanding of the roles of the commander as a decision maker, the staff, and the intelligence professional. It examines the evolution of knowledge management to build situational understanding and the commander's visualization, the operations process, and doctrinal shortcomings in communications and military briefings. This section concludes, linking the intelligence professional's enhancement by incorporating cognitive theories that include: thinking, learning, learning myths, dual coding theory, cognitive load theory, and the naturalistic decision making theory. Communications examined include: theories, processes and methods, with additional detail on rhetoric, message context, brevity, persuasion and influence, common lexicon, and elements of visual presentation. The significance of an intelligence professional understanding cognitive theories and communications will promote increased learning through impactful message delivery. Improved briefing methods within an organization, using oral and visual

presentation will furthermore result in enriched situational understanding for faster, efficient, and effective decision making in an increasingly complex multi-domain environment.

Doctrine

The Operational Environment (OE), is defined as “a composite of the conditions, circumstances, and influences that affect the employment of capabilities and bear on the decisions of the commander.”¹ The OE consists of physical domains of land, maritime, air, and space, and areas within the information environment, such as cyberspace and the electromagnetic spectrum (EMS).² The physical OE and the information environment are not separate. Activities occurring in both areas effect and impact military operations and increasing the overall complexity.³ Furthermore, postulated in the US Army Multi-Domain Operations (MDO) concept, the US Army will fight across all the contested domains in an increasingly lethal, complex environment, and expanding battlefield that demand more operational tasks across domains requiring higher cognitive demand.⁴ The commander and staff operate in this doctrinally defined dynamic environmental framework. This environment of increased complexity, speed, and volume, increases the importance of the commander making faster and more effective decisions in order to match the pace of all military operations across all domains.

The Commander and the Evolution of Situational Understanding

Army Doctrine Publication (ADP) 6-0, *Mission Command*, outlines the nature of command to include, “The authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military

¹ US Department of Defense, Joint Staff, Joint Publication (JP) 3-0, *Joint Operations* (Washington, DC: Government Printing Office, 2018), xv.

² Ibid.

³ US Department of the Army, Field Manual (FM) 3-13, *Information Operations* (Washington, DC: Government Publishing Office, 2016), 1-2.

⁴ US Department of the Army, Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028* (Washington, DC: Government Printing Office, 2018), 5,6.

forces for the accomplishment of missions.”⁵ ADP 6-0 describes the art of command as requiring the skill of exercising authority through timely decision making through judgement gained from experience. Decision making is one of the four elements of command, along with authority, responsibility, and leadership. Decision making includes the science of war, such as the technical aspects of weapons and equipment, and the art of war, such as operation complexity and enemy uncertainty which often demands additional focus and attention. Decision making, whether deliberate or quickly done by the commander, focuses on selecting a course of action (COA) to accomplish the mission and guide the force.⁶ Therefore, decision making is an imperative part of the commander’s duties and to arrive at a decision, information about the OE must be apparent.

The OE will always contain some degree of uncertainty and cannot completely be understood. Situational understanding of the OE is necessary in order to make a decision for an operational COA. Situational understanding is described in ADP 6-0:

Success in operations demands timely and effective decisions based on applying judgment to available information and knowledge. As such, commanders and staffs seek to build and maintain situational understanding throughout an operation. Situational understanding is the product of applying analysis and judgment to relevant information to determine the relationships among the operational and mission variables. Situational understanding allows commanders to make effective decisions and regulate the actions of their force with plans appropriate for the situation.⁷

Therefore, it is imperative that the commander build upon his understanding of the situation, develop his framework of the OE, to ultimately make decisions and enable tactical actions.

Three doctrinal manuals, ADP 6-0, Field Manual (FM) 6-0, *Commander and Staff Organization and Operations*, and FM 6-01.1, *Knowledge Management*, characterize how information is built upon to enable understanding. Data consists of collected, unprocessed observations from a sensor and is useful once processed and given contextual meaning, becoming

⁵ US Department of the Army, Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: Government Publishing Office, 2019), 2-1.

⁶ Ibid, 2-1,2-3.

⁷ Ibid, 2-3.

information. Information is then accumulated and applied with collective experience and judgement to aid in decision making. Next, knowledge contains analyzed and evaluated information using collective experience, practice and interaction for the application of operations. Knowledge consists of tacit knowledge, residing in an individual’s mind, and explicit, which is knowledge that can be documented and organized. The final step is understanding. Used as the basis for decision making, understanding is the synthesis of knowledge along with the application of judgment in the context of a particular situation.⁸ Figure 1, Achieving Understanding, displays the linear construction of this concept.

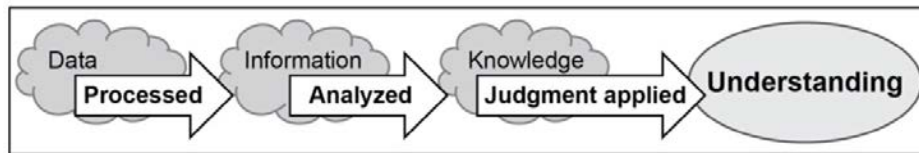


Figure 1. Achieving Understanding. US Department of the Army, Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: Government Publishing Office, 2019), 2-4.

Additionally in FM 6-01.1, figure 2, Creating Shared Understanding, provides a pyramid depiction of figure 1’s linear construct with additional emphasis on developing a shared understanding towards the ultimate goal: wisdom and decision making.

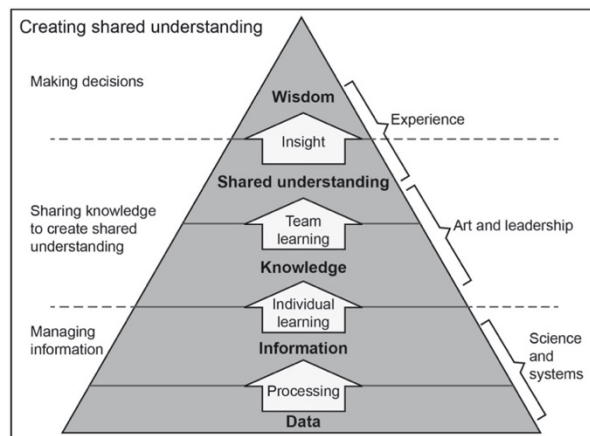


Figure 2 Creating Shared Understanding. US Department of the Army, Field Manual (FM) 6-01.1, *Knowledge Management Operations* (Washington, DC: Government Printing Office, 2012), 1-11.

⁸ Ibid, 2-4.

In order for a commander to increase his situational understanding through the accumulation of information and knowledge to ultimately make sound decisions, his staff must provide him with information and share collective knowledge. The staff has defined roles and functions to support the commander and assist in his situational understanding. They understand, visualize, and describe the OE, articulate decisions, assess operations, make recommendations, and provide timely, relevant, informative, and analyzed products.⁹ Furthermore, staffs apply critical and creative thinking within the operations process, assisting commanders in developing situational understanding and future decision making.¹⁰

The US Army's framework for organizing the command and control activities conducted throughout operations is called the operations process. The process includes planning, preparing, executing, and continual assessment. The scope of this process is to initiate planning, build the understanding of the OE, visualize and describe the operational approach, describe decisions, and lead and assess operations.¹¹ Furthermore, ATP 5-0.1, *Army Design Methodology*, discusses the operations process and the need for effective communication amongst the commander and staff. The commander encourages collaboration and dialogue by promoting a learning environment where the staff and junior soldiers can contribute information, ideas, and mental models to increase collective understanding and make better decisions.¹² As commanders engage in the operations process, they develop a commander's visualization, which is the mental process of developing situational understanding, seeking a desired end state, and envisioning an operational approach to reach it.¹³ The ultimate outcome of the operations process is intended to build

⁹ US Department of the Army, Field Manual (FM) 6-0, *Commander and Staff Organization and Operations* (Washington, DC: Government Publishing Office, 2014), 2-1.

¹⁰ Ibid, 2-3.

¹¹ US Department of the Army, Army Doctrine Publication (ADP) 5-0, *The Operations Process* (Washington, DC: Government Publishing Office, 2019), 1-4.

¹² US Department of the Army, Army Techniques Publication (ATP) 5-0.1, *Army Design Methodology* (Washington, DC: Government Publishing Office, 2015), 1-7.

¹³ US Army, ADP 6-0, 2-15.

increased situational understanding, aid in commander's visualization, achieve timely and effective decisions, and operate faster than the enemy, eliminating their ability to compete.¹⁴

Sydney J Freedberg Jr. criticizes contemporary doctrine as reflecting the industrial age model of manual staff processes. Staffs gather and share massive amounts of information across physical and cyber domains to provide to the commander. These traditional processes are ineffective as there is a lapse of time to collect and evaluate all the information's accuracy. US forces therefore lose the tempo advantage to the enemy.¹⁵ While current doctrine properly identifies staff functions in the evolution of information to become understanding for command visualization and decision making, it falters in describing the emerging multi-domain OE. This information-rich, dynamic, and time sensitive, all domains environment requires focused information for command decision making and improved staff communication mechanics. Here the intelligence professional has a pivotal role, but currently relies on a lack of doctrinal comprehensiveness regarding military briefings and communications.

The Intelligence Professional

The roles and responsibilities for the Assistance Chief of Staff, G-2 (S-2), are outlined in FM 6-0 as the chief of the intelligence warfighting function and the principal staff officer responsible for providing intelligence to support operations and plans. The G-2 gathers and analyzes information on enemy, terrain, weather, and civil considerations to provide assessments for the commander and staff.¹⁶ Though this definition specifically outlines the role and responsibility for the chief intelligence officer, these responsibilities filter down to the remainder of the intelligence staff element including the officers, warrant officers, noncommissioned

¹⁴ US Army, ADP 5-0, 1-4.

¹⁵ Sydney J. Freedberg Jr., "'A 20th Century Commander Will Not Survive': Why the Military Needs AI," *Breaking Defense*, January 12, 2021, accessed January 19, 2021, <https://breakingdefense.com/2021/01/a-20th-century-commander-will-not-survive-why-the-military-needs-ai/>.

¹⁶ US Army, FM 6-0, 2-8.

officers, and enlisted soldiers. As the responsibility to provide situational understanding delineates to several intelligence personnel, it is important to address the proper title of the intelligence collective.

Within US Army doctrine there are several terms used to describe intelligence personnel such as intelligence analysts and intelligence leaders. The term analyst (along with the term collector) is denoted in many military occupational specialties and is a broad term associating more with enlisted personnel. Intelligence leaders are described in ADP 2-0, *Intelligence*, as the commander's primary advisors for the intelligence warfighting function, whether they serve on the intelligence staff or in the military intelligence (MI) unit.¹⁷ Intelligence leader is a powerful title, generally considered for officers. The title intelligence professional is used in Joint Publication 2-0, *Intelligence*, calling the attention of all intelligence practitioners. The term elicits a notion of discipline within one's given duties and is all-inclusive regardless of rank or position. This monograph uses the term intelligence professional to create a common baseline to denote the range of occupational skills amongst all intelligence personnel, both enlisted as well as officers.

As the term intelligence professional encompasses analysts of varying rank and skill, it is necessary to understand what they do, and their value for a commander. ATP 2-33.4, *Intelligence Analysis* states that they conduct intelligence analysis to produce timely, accurate, relevant, and predictive intelligence for dissemination to the commander and staff. Intelligence analysis is the process of using collected information, evaluated, and integrated with existing information production.¹⁸ JP 2-0, *Intelligence*, defines intelligence in three collective areas: as a product, an activity, and an organization. Intelligence is the product culmination of information about foreign nations, hostile or possibly hostile forces, or areas of operations that is collected, processed,

¹⁷ US Department of the Army, Army Doctrine Publication (ADP) 2-0, *Intelligence* (Washington, DC: Government Publishing Office, 2019), 2-2.

¹⁸ US Department of the Army, Army Techniques Publication (ATP) 2-33.4, *Intelligence Analysis* (Washington, DC: Government Publishing Office, 2019), 1-1.

integrated, evaluated, and analyzed. Second and thirdly, intelligence consists of the activities that result in the product and consists of the organizations involved in these activities.¹⁹ To expound on the relevance of intelligence as a development of a composite of collected information, JP 2-0 provides similar figures referenced previously in ADP 6-0 and FM 6-01.1. Figure 3 demonstrates the relationship between data collection in the OE and its evolution to information and intelligence through processing and analysis. This figure relates to those previously referenced as analysis is applied to information producing knowledge, which is parallel to intelligence, and both serve as a bridge to aid the commander in achieving a greater understanding.

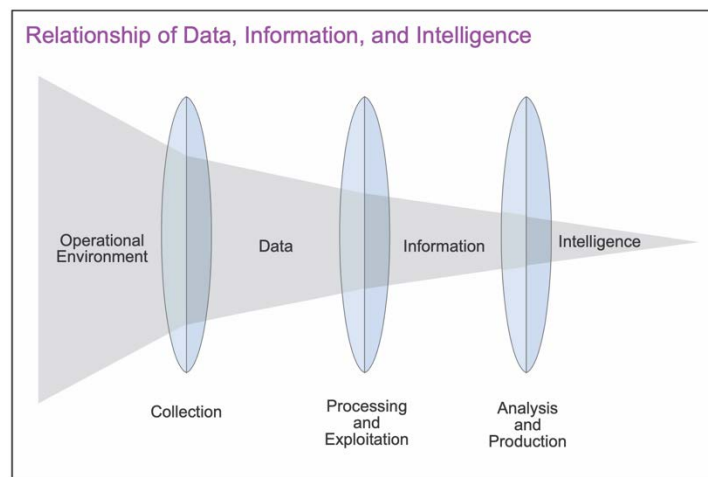


Figure 3. Relationship of Data, Information and Intelligence. US Department of Defense, Joint Staff, Joint Publication (JP) 2-0, *Intelligence* (Washington, DC: Government Printing Office, 2013), I-2.

The OE provides vast amounts of raw data that only provide utility for the commander if analysts scrutinize the information and draw conclusions, distilling it into a produced intelligence estimate. That estimate arms the commander with knowledge for better informed decision making, understanding of risk, and increased success rates. It also offers advantageous insight in understanding the adversary's decision making cycle, prediction of their possible COAs, and the

¹⁹ US Department of Defense, Joint Staff, Joint Publication (JP) 2-0, *Intelligence* (Washington, DC: Government Printing Office, 2013), GL-8.

ability to counter those COAs.²⁰ Intelligence professionals are thus a crucial element amongst the staff to assist the commander.

US Army Presentation

FM 6-0 describes the command and staff functions to exercise mission command, which include communication, production, and presentation, or collectively called briefing methods. It describes the characteristics of a staff, stating the following about communication skills:

Staff officers communicate clearly and present information orally, in writing, and visually (with charts, graphs, and figures). Staff officers routinely brief individuals and groups. They know and understand briefing techniques that convey complex information in easily understood formats. They can write clear and concise orders, plans, staff studies, staff summaries, and reports.²¹

The manual also outlines the four types of military briefings: information, decision, mission, and staff briefing. Information briefings present easily understandable facts without conclusions, recommendations, or necessitating a decision. A decision briefing seeks to obtain a decision for a COA and the commander is provided recommended solutions; the topic may be unfamiliar or familiar to the commander, in which the additional facts and assumptions can be presented. Mission briefings are information briefings which occur during operations and training and contain information critical to that mission. Lastly a staff briefing informs the commander and staff of a current developing situation and allow for coordination, synchronization, and information exchange to issue directives and provide further guidance. Additionally, FM 6-0 provides the format for the information and decision brief as well as the operations order format, and recommends their customization of one of the four military briefings.²²

An intelligence professional may brief any combination of the four military briefings but they often are specified differently. For example, in the US Army's iterative planning process

²⁰ Ibid, I-1-I-2.

²¹ US Army, FM 6-0, 2-3.

²² Ibid, 7-1-7-3.

known as the military decision making process (MDMP) the intelligence professional is the key for providing situational understanding during the mission analysis portion. Mission analysis, considered the most important step in MDMP, contains characteristics of all four briefings. Mission analysis provides an understanding of the situation and problem, and enables the commander to visualize future operations.²³ The essential feature presented in mission analysis is intelligence preparation of the battlefield (IPB). IPB is the process of analyzing mission variables of enemy, terrain, weather, and civil considerations in the area of interest, determining those effects on operations. The IPB products allow the commander to identify key aspects of the OE, assess facts about the OE, understand constraints of COAs, and an evaluate threat COAs.²⁴ The resulting IPB estimate is presented at the mission analysis briefing which informs the commander of the staff's situation analysis. This provides a shared understanding, visualization, and deeper meaning among the mission variables for inclusion in guidance, direction, and execution in future operations.²⁵

In addition to IPB, the intelligence professional provides a variety of intelligence products. Annex E in 2-33.4, *Intelligence Analysis*, contains an extensive list of types of intelligence products. The essential four categories are: threat and OE analysis reports, current intelligence reports, supplemental intelligence reports, and analytical assessments supporting orders and briefings. Within these four categories, additional products include the intelligence estimate, intelligence running estimate, Annex B to the operation order (OPORD), intelligence summary (INTSUM), graphic intelligence summary (GRINTSUM), and intelligence reports (periodic and supplementary).²⁶ All of these products (and many others not described here)

²³ Ibid, 9-6.

²⁴ Ibid, 9-8.

²⁵ Ibid, 9-13.

²⁶ US Army, ATP 2-33.4, E-1, E-6, E-7.

contain written analysis, may accompany graphic visuals, and can be briefed orally, exclusively to the commander in a desk side brief, or include the staff and wider audiences.

US Army doctrine provides a general structure for the four military briefings and generic formats for how to template products. The typical format is a Microsoft PowerPoint presentation, often referred to as slides, used to display the graphic information and text provided in many of the written OPOD documents. Though PowerPoint can work well as a presentation tool, slides often become saturated with information, such as paragraphs of text, or visual images clustered with excessive symbols. Elisabeth Bumiller discusses many common issues posed with deep entrenchment of PowerPoint in the military culture that are echoed in the reality of contemporary military planning and intelligence briefings. She notes the consuming time to develop PowerPoint presentations, the use of rigid bulletized lists, overwhelming visual graphics, and long duration of a multitude of slides leads to the commonly used phrase, “Death by PowerPoint.”²⁷

US Army doctrine provides sparse information for ways to provide an effective brief. Most techniques are learned in primary military education or through on-the-job training. Through these training gates and ad hoc steps, intelligence professionals learn the ins-and-outs of how to provide quality briefings. *Bringing Intelligence About; Practitioners Reflect on Best Practices*, compiles and reflects on best practices, aptitudes, and skills of intelligence practitioners throughout the intelligence community (IC).²⁸ One section focuses on intelligence analyst core competencies, particularly for analysts within the National Security Agency, but can aptly apply to intelligence professionals throughout the IC, including the US Army. One competency identified as “abilities,” includes communication. The latter lists three areas: aural, graphic/visual, and oral. Aural abilities are described as hearing, actively listening, taking in

²⁷ Elisabeth Bumiller, “We Have Met the Enemy and He is PowerPoint,” *The New York Times*, April 26, 2010, accessed November 23, 2020, <https://www.nytimes.com/2010/04/27/world/27powerpoint.html>.

²⁸ Russell G. Swenson, ed., *Bringing Intelligence About; Practitioners Reflect on Best Practices* (Washington, DC: U. S. Government Printing Office, 2003), 1.

information, and ultimately improving interaction with managers. Graphic/visual abilities are described as interpreting symbols and presenting information in a graphic or visual manner, which will effectively heighten the impact of the intelligence. Lastly, oral abilities are effectively communicating with spoken words, enabling understanding, and building one's credibility.²⁹ This emphasis on communication skills for presenting intelligence is essential in building better briefers, and increasing intelligence understanding and application in the operations process.

The amalgamation of data to construct information and then intelligence describing the OE are necessary in combat, but if not properly communicated or placed in the context for the commander to understand, the message is lost and the analysis useless. Therefore, the intelligence professional as the key breifer in providing an understanding of the OE, is in a unique position to provide a pivotal advantage to the commander and organization. Their advantage occurs as they can provide a briefing that is formed through an understanding of effective cognitive theories and communications to increase the connection of information absorption, to decision making. Understanding and applying how people think, learn, and decide along with the effective means to communicate orally, written, and through visual presentation, enhances the commander's situational understanding promoting effective decision making.

In summary, the OE is becoming increasingly complex across an expanding physical and intangible battlespace in all domains, inviting greater amounts of information to shape the environment at a faster rate. A commander, through the assistance of his intelligence staff, must see and understand what is relevant, process it, and decide faster than the enemy in order to positively influence the battlespace and achieve mission success. An intelligence professional can achieve this through a collective understanding of communications and cognitive theories.

²⁹ Ibid, 96, 108.

Cognitive Theories

The intelligence professional must capitalize on a personal understanding of a variety of cognitive theories. Knowledge of cognitive theories leads to an increased perception of how the commander and audience generally think, learn, and form decisions. Armed with this knowledge the intelligence professional will provide essential information in a format conducive to improved information absorption, retention, and processing. This monograph approaches this section on cognitive theories through several areas: thinking, learning, learning myths, dual coding theory, and cognitive load theory.

Section I: Learning Theories

For the intelligence professional, it is an operational necessity for understanding how people think and learn. When providing a military brief to a commander or staff, in essence the intelligence professional is teaching them about the conditions of the OE. The human brain is a system consisting of network linkages that chemically fire neurons shaping our perceptions, attention, cognitive processes, learning, emotions, and behaviors. Humans think in mental models, which are one's heavily protected existing beliefs of the world. Edward Hess, the author of *Learn or Die* describes mental models as difficult to rewrite, but can change in order to function in a new environment.³⁰ Behavioral economist Daniel Kahneman and author of *Thinking, Fast and Slow*, identifies two modes of thinking which he refers to as System 1 and System 2. System 1, operates quickly and automatically with little control or effort, and impulsively and intuitively organizes impressions and feelings of explicit beliefs in a manner of patterns. System 2 is slower and allocates effortful mental action toward complex computations and is associated with concentration and choice but is often lazy.³¹ Typically, System 2 will

³⁰ Edward D. Hess, *Learn or Die: Using Science to Build a Leading-Edge Learning Organization* (NY: Columbia University Press, 2014), 9-10.

³¹ Daniel Kahneman, *Thinking, Fast and Slow* (NY: Farrar, Straus and Giroux, 2011), 20-21, 48.

accept the suggestions of System 1 without alteration, such that immediate impressions, feelings, and impulses become beliefs and soon involuntary actions.³²

Learning is essential to how humans grow, develop, and adapt in an ever changing world and the journey for learning is expansive, dynamic, and lifelong. Hess describes its complexity, “Learning involves a diverse set of operations, including perception of stimuli, attention, encoding, pattern matching or recognition, short and long-term memories, recall, training, feedback, practice, and managing emotions and ego.”³³ This alludes to the many cognitive and learning theories still undergoing research. Some are learning myths that exist, perpetuate, and limit what individuals think they are aligned to. Such myths must be identified and debunked to foster effective learning.

A common frame of teaching that emerged in contemporary educational systems is that each person has their unique and preferred style of how they learn best and receive information. The three types of learning styles or learning modalities initially identified were visual, aural, and kinesthetic, and later a fourth style read/write was added; given the acronyms VAK or VARK, respectively. Learners supposedly have a preferred modality: for the visual, the learner prefers information depicted on a graphic; aural, the preference is for spoken information; read/write, information displayed as words; and kinesthetic, information that is demonstrated or simulated.³⁴

This model is now debunked and is regarded by practitioners and experts as a myth. One of the more powerful studies to challenge it was published in *Psychology Science in the Public Interest* in 2008.³⁵ It concluded there was virtually no evidence in how subjects prefer

³² Ibid, 24.

³³ Hess, 13.

³⁴ Neil D. Fleming, “The VARK Modalities,” VARK: Visual, Aural, Read/Write, Kinesthetic: A Guide to Learning Preferences, accessed November 25, 2020, <https://vark-learn.com/introduction-to-vark/the-vark-modalities/>.

³⁵ Harold Pashler, Mark McDaniel, Doug Rohrer and Robert Bjork, “Learning Styles: Concepts and Evidence,” *Psychology Science in the Public Interest* 9, no. 3 (December 2008): 105, accessed September 23, 2020, <https://www.jstor.org/stable/20697325>.

information presentation relating to their aptitude for learning and processing of different types of information. Moreover, there is no suitable evidence to justify incorporating learning style assessments for general education. Evidence continues to grow that people hold beliefs about how they and others learn resulting in non-optimal ways.³⁶ A concluding suggestion from the study was that optimal instructional methods likely vary across disciplines and that teaching should focus toward identifying and introducing experiences, activities, and challenges that enhance everyone's learning.³⁷ This suggestion is further expounded in Olga Khazan's article "The Myth of 'Learning Styles,'" asserting that learners should resist thinking of themselves solely as a visual or aural learner. Learners should realize instead that everyone is able to think in words and mental images and they should consider these methods as tools in a toolbox and call upon them as needed when focusing on the material at hand.³⁸

It is important intelligence professionals realize this debunked learning styles concept. Even lacking evidence, VARK learning styles remain a popular instructional framework that is embedded in many individual mental models and must be overcome. It is important to understand that regardless of whether someone believes they are a one-style learner, they can learn effectively in a variety of ways. Accepting this concept increases their learning potential as multiple modalities are combined and further optimized. Dual Coding Theory demonstrates this and is supported by evidence and research.

Dual Coding Theory, developed by Allan Paivio, explains how people process verbal and visual information in the brain. Later the information can be recalled two ways, either verbally or through a mental image, enabling us to have more working memory capacity. Furthermore,

³⁶ Ibid, 105, 117.

³⁷ Ibid, 116-117.

³⁸ Khazan, Olga, "The Myth of 'Learning Styles,'" *The Atlantic*, April 11, 2018, accessed August 31, 2020, <https://www.theatlantic.com/science/archive/2018/04/the-myth-of-learning-styles/557687/>.

instruction that properly accompanies text with images can allow for increased learning.³⁹ Dual Coding Theory suggests, “mental representations are associated with theoretically distinct verbal and nonverbal symbolic modes and retain properties of the concrete sensorimotor events on which they are based.”⁴⁰ This statement is depicted in figure 4, the Verbal and Nonverbal symbolic systems of Dual Coding Theory.

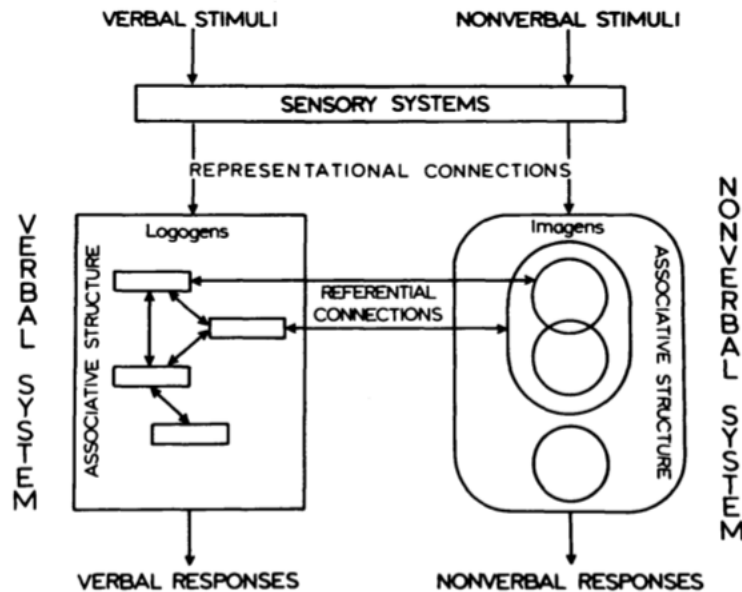


Figure 4. Verbal and nonverbal symbolic systems of Dual Coding Theory. James M. Clark, and Allan Paivio, “Dual Coding Theory and Education,” *Educational Psychology Review* 3 no. 3 (September 1991): 152, accessed October 2, 2020, <https://www.jstor.org/stable/23359208>.

Figure 4 also illustrates the representational units and their connections both within the system (associative connections) and between the system linkages (referential connections). The verbal system consists of multiple modality-specific areas that include visual, auditory, articulatory, and other verbal codes such as representations for words. For nonverbal representations, they are also

³⁹ Oliver Caviglioli, *Dual Coding with Teachers* (Woodbridge, UK: John Catt Educational, 2019), 20.

⁴⁰ James M. Clark, and Allan Paivio, “Dual Coding Theory and Education,” *Educational Psychology Review* 3 no. 3 (September 1991): 151, accessed October 2, 2020, <https://www.jstor.org/stable/23359208>.

modality-specific images such as shapes, sounds, sensations tied to emotions and other nonlinguistic objects.⁴¹

Researchers evaluated Dual Coding Theory in memory experiments using maps and text, discussed in “Comparing Elaboration and Dual Coding Theories: The Case of Maps and Text.” This study involved subjects receiving visual input, studying maps, and receiving verbal input, text about map features, and the relation to memory and recall. It concluded that Dual Coding Theory holds visual and verbal input as representations of distinct tracts in separate memory stores. Visual stimuli are represented as images and verbal stimuli, such as sentences, are coded as linguistic propositions. There are links between the verbal and visual stores that can access and activate information in the other code thus creating multiple codings that will increase the likelihood of recalling the information later.⁴² This study also integrated Cognitive Load Theory, another important theory in realizing human cognition capabilities and limitations.

Researchers, Fred Paas, Tamara van Gog and John Sweller, discuss Cognitive Load Theory and its development in “Cognitive Load Theory: New Conceptualizations, Specifications, and Integrated Research Perspectives.”⁴³ Cognitive Load Theory involves learning complex cognitive tasks where learners are overwhelmed by the amount of information elements that require processing before learning can begin. The theory involves the human cognitive architecture that consists of an unlimited long-term memory and a limited working memory. Long-term memory stores previously learned information and the working memory processes information before it is stored as long-term memory. Long-term memory is viewed as the central

⁴¹ Ibid, 151.

⁴² Raymond W Kulhavy, William A. Stock, Kristina A. Woodard and Robert C. Haygood. “Comparing Elaboration and Dual Coding Theories: The Case of Maps and Text.” *The American Journal of Psychology* 106, no. 4 (Winter 1993): 484, accessed October 2, 2020, <https://www.jstor.org/stable/1422965>.

⁴³ Fred Paas, Tamara van Gog and John Sweller, “Cognitive Load Theory: New Conceptualizations, Specifications, and Integrated Research Perspectives,” *Educational Psychology Review* 22, no. 2 (2010): 115, accessed October 31, 2020, <https://www.jstor.org/stable/23364124>.

structure in human cognition, containing vast amounts of knowledge, organized in hierarchical schemas that can be categorized for appropriate situations.⁴⁴ Information is first processed in working memory before it is stored in long-term memory because working memory is limited by duration and capacity. Nearly all information can be stored in working memory within thirty seconds and not lost, even without rehearsal (duration), and the capacity is said to be limited to 4 ± 1 of an element.⁴⁵ This means working memory capacity is limited to three, four or five slots of input, for example digits, words, or letters.⁴⁶ Working memory is therefore limited in storing new information but previously stored information in the long-term memory can easily be brought back to working memory. The point of recognizing Cognitive Load Theory is that a learner's working memory can be overloaded by presented information. There must be a balance in instruction so that information has time to acquire in long-term memory and ensure the working memory is not debilitated.⁴⁷

In his book, *Dual Coding with Teachers*, Caviglioli uses his research combined with input from over forty educators, psychologists, and information designers to amass a comprehensive guide for using Dual Coding Theory and constructive visuals as a teaching mechanism. Dual coding relates to cognitive load through three significant effects: the modality effect, the split-attention effect, and the transient information effect. The modality effect is sharing the load between visual and auditory channels by combining a diagram with spoken explanations. The split-attention effect describes wasting mental effort when placing a graphic away from the text explanations. Finally, the transient information effect occurs when spoken words are lost before intake occurs resulting in an overload of auditory information.⁴⁸ Thus

⁴⁴ Ibid, 116.

⁴⁵ Ibid, 117.

⁴⁶ Caviglioli, 30.

⁴⁷ Paas, Van Gog and Sweller, 117.

⁴⁸ Caviglioli, 30.

during military briefings it is important to utilize images paired with text and oral instruction, recognize the cognitive effects of the audience, and determine if the methods are providing an optimal learning experience.

To culminate the understanding and integration of the two theories, Caviglioli describes the information processing of dual coding in an infographic-style flow chart, which is depicted as figure 5, a simplified model of Paivio's Dual Coding Theory.

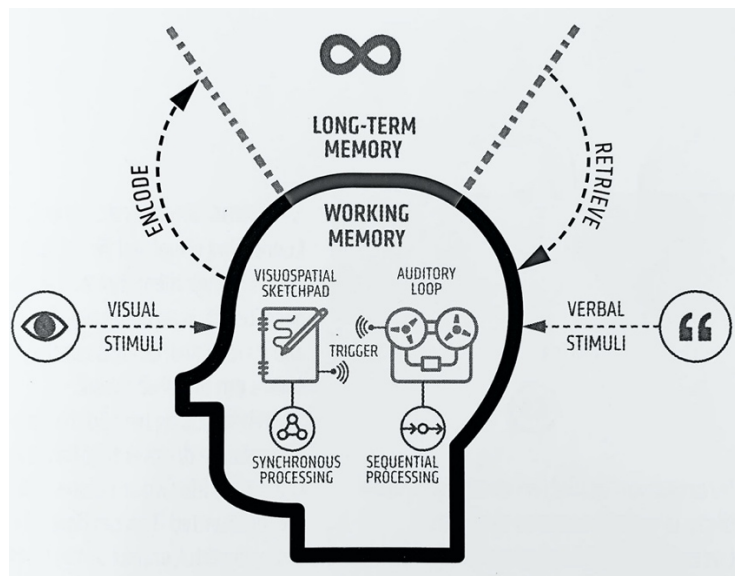


Figure 5. A simplified model of Paivio's Dual Coding Theory. Oliver Caviglioli, *Dual Coding with Teachers* (Woodbridge, UK: John Catt Educational, 2019), 23.

The process of information flow occurs through two information channels (verbal stores logogens and visual stores imagens) feeding the working memory. Though the two channels are separate, they are tethered via a triggered connection. Verbal information is processed sequentially and visual information is processed synchronously, meaning the details and the big picture are perceived simultaneously. Finally, content from the working memory moves to the long-term memory via the encoding process. The culmination of this process is when visual and verbal

information is strongly connected, it is called dual coding, creating a double memory trace, and greatly aids in memory retrieval from long-term memory to working memory.⁴⁹

As an intelligence professional, it is important to learn how people take-in and process information to accumulate their knowledge base. This acquired knowledge aids in how the commander and staff develop situational understanding of the OE and continue toward critical decision making. Although many military briefings and intelligence products are presented in somewhat of a dual coding method, including images, maps and graphics, along with written text, and an oral explanation; products are often oversaturated. Cognitive Load Theory enables intelligence professionals to be conscious of the audience's ability to process information through duration and capacity, especially when the information is new and unfamiliar. The presenter can better comprehend that a commander is likely facing a plethora of other issues and sensory inputs that impinge on his working memory, taxing the ability to process information. As newly presented information moves into the commander's long-term memory it can be fully synthesized and usable for effective decision making.

Section II: Decision Making Theories

An essential point of the operations process is for the commander to reach a decision and begin executing operations. New situational information can alter the current state and change plans and COAs. This calls for the commander to evaluate the situation internally and make rapid decisions, without the luxury of time and staff consensus. This monograph examines the naturalistic decision making theory, which includes the recognition-primed model, intuition, mental simulation, and decision making theories in emotions and identity, serving as models a seasoned commander may use.

David Jonassen, author of the article "Designing for Decision Making," succinctly describes several types of decision making models for problem solving, how decisions are made

⁴⁹ Caviglioli, 22-23.

and ways to develop decision making skills.⁵⁰ Jonassen states that decision makers seek to solve ill-structured problems evaluating two or more optional outcomes prior to committing. Jonassen describes two distinct conceptions of decision making, normative or prescriptive models, and descriptive or naturalistic models. Normative theories assume decision makers are rational people who seek to identify the best decision choice which maximize utility in an uncertain situation. Naturalistic models are based on research, examining how people actually make decisions and demonstrates that people are usually less rational and often influenced by unconscious drives, personal beliefs, emotions, and past experiences.⁵¹ The argument will focus on the latter, as they are more pertinent to understanding decision making in the OE.

Gary Klein studies naturalistic decision making, which is the study of how people use their experience in decision making to make choices in field settings. Klein's studies involve experienced decision makers familiar with high stakes choices in settings that include dynamic conditions and high stakes situations where new information may be received and old information may become invalid, resulting in changing the goal.⁵² Throughout *Sources of Power*, Klein, uses field evaluated scenarios that examine the particular type of decision making method or source of power. Three of these areas, the recognition-primed decision model, intuition, and mental simulation, are noteworthy for their applicability to the OE.

The recognition-primed decision model combines two processes, the way decision makers evaluate a situation to determine which COA makes sense, and how they evaluate the COA to use by imagining it.⁵³ Hess, who investigates Klein's decision making methods, further

⁵⁰ David H. Jonassen, "Designing for Decision Making," *Educational Technology Research and Development* 60 no. 2 (April 2012): 343, 357, accessed August 16, 2020, <https://www.jstor.org/stable/41488586>.

⁵¹ *Ibid*, 342-343.

⁵² Gary Klein, *Sources of Power: How People Make Decisions* (Cambridge, MA: The MIT Press, 2017), 1,4,6.

⁵³ *Ibid*, 24.

explains the recognition-primed decision model along with involvement in System 1 and 2 thinking. In such environments where decision making speed is imperative, there is typically little time to generate alternatives, weighing the pros and cons or in evaluating probability. A decision maker first senses, processes, interprets, and then forms pattern matching. Pattern matching is processing the environmental cues in the situation, and the decision maker creates a pattern of what they think is happening then match that pattern and “file it” in their mind. Once the existing situation is matched to a pattern on file in their minds they develop COAs based on prior learning and experience. Completing this process, the person doesn’t simply accept the immediate answer but they tap into their System 2 thinking, to visualize the outcome.⁵⁴ Through experimentation in this model, subjects underwent tough evaluation and had to make difficult decisions and evaluate different COAs. Klein determined that this method served as a frequently used strategy and proved widely accepted by decision makers as well.⁵⁵

The next decision model, is the power of intuition. Klein states, “Intuition depends on the use of experience to recognize key patterns that indicate the dynamics of the situation.”⁵⁶ Skilled decision makers can depend on intuition but these patterns can be subtle and are difficult to describe, assigning a strange reputation for intuition. For intuition to expand, a decision maker needs experience in pattern matching. The decision maker must train to recognize patterns in both familiar and difficult situations.⁵⁷

The last area of inquiry in naturalistic decision making is the power of mental simulation. Klein describes mental simulation as, “the ability to imagine people and objects consciously and to transform those people and objects through several transitions, finally picturing them in a

⁵⁴ Hess, 76

⁵⁵ Klein, 26, 28.

⁵⁶ Ibid, 31.

⁵⁷ Klein, 31, 42.

different way than at the start.”⁵⁸ Klein expounds, stating that this process is not just building a static snapshot but building a sequence of snapshots to play out and observe the outcome.⁵⁹ Jonassen discusses mental simulations and the close ties with scenarios in the cognitive process. Scenarios are stories constructed during periods of uncertainty to predict future events, and are important for assessing long-range developments. Similarly, mental simulations are constructed through experience and explain how events moved from past to present and project to the future. Mental simulations are valuable for experienced decision makers as they apply their past experience to the present aiding in their articulation of the decision options and possible outcomes, creating open-mindedness in the decision making process.⁶⁰ Finally, Jonassen cements the utility of this decision making model concluding, “If the decision maker employed a more naturalistic method for making any decision, such as constructing a scenario or mental simulation, then the quality of the decision will depend on how compelling the story was.”⁶¹

Hess offers another approach to decision making. He applies Kahneman’s System 1 and System 2 thinking and evaluates that System 2 thinking is necessary for learning and good decision making.⁶² Furthermore, Hess says cognition and emotions are inextricably intertwined, jointly contributing toward the conduct of mental activities and behaviors. When it comes to decision making, it is important to realize cognition and emotions interact. Emotions play a role in both System 1 and System 2 thinking, code the relevance in certain events and influence the ability in recalling them. Emotions serve as early warnings that something is wrong or a situation may be risky, often leading toward the notion of a “gut feeling.”⁶³

⁵⁸ Ibid, 45.

⁵⁹ Ibid, 45.

⁶⁰ Jonassen, 352, 354.

⁶¹ Ibid, 356.

⁶² Hess, 15.

⁶³ Ibid, 22, 23.

Emotions are an integral element in the decision making process. Jonassen states, “Emotion assigns values to things, and reason makes decisions based on those values. The mind is constantly making value judgements that affect our conscious judgements that are involved in decision making.”⁶⁴ Hess discusses emotions in uncertain environments such as fear, anxiety, and stress that activate one’s stress-response system, hijacking one’s thinking resulting in poor decision making.⁶⁵ Klein particularly states that in uncertain environments, stress affects the way we process information.⁶⁶ Hess summarizes the importance of understanding, having awareness, and managing emotions, so they do not work against thinking and decision making processes.⁶⁷

Another decision making model that poses a possibility for a commander’s decision making is identity. Jonassen discusses identity-based decision making, which is making decisions on the rules that follow identities. Organizations can socialize individuals to adopt identities, then behave and decide akin to that identity. When fulfilling an identity, the person may follow rules appropriate to their situation, such as thinking or deciding in a certain way.⁶⁸ A commander may take on an identity role of a certain type of military leader. This frame of mind could call for a maneuver commander to choose COAs that are more offensively focused.

Klein evaluates the naturalistic decision making models in conditions similar to the battlefield OE. He and others have identified several decision making models that are often utilized by an experienced commander. As an intelligence professional, having awareness of these models further emphasizes the importance that various elements play in the decision making process, such as System 1 and 2 thinking, rationality, intuition, pattern-matching, mental simulation, emotions, and identity. Considering these factors in commander thinking and

⁶⁴ Jonassen, 349.

⁶⁵ Hess, 27-29.

⁶⁶ Klein, 275.

⁶⁷ Hess, 29.

⁶⁸ Jonassen, 348-349.

deciding, it is useful to know during dynamic situations when to provide information for processing and action. Discussing information availability in uncertain environments, Klein states, “Key pieces of information are missing, unreliable, ambiguous, inconsistent, or too complex to interpret, and as a result a decision maker will be reluctant to act... Because it is impossible to achieve 100 percent certainty, decision makers must be able to proceed without having a full understanding of events.”⁶⁹ Regardless of the OE information provided, commanders must make decisions. Klein encapsulates the command presence of experienced decision makers, “Often we believe that we can improve the decision by collecting more information, but in the process we lose opportunities. Skilled decision makers appear to know when to wait and when to act . . . despite uncertainty.”⁷⁰

⁶⁹ Klein, 276.

⁷⁰ Ibid, 279-280.

Communications

The intelligence professional can understand the described cognitive theories but in order to apply them, one must be able to communicate effectively. The ability to communicate is essential as a component of the staff and necessary for presenting information. This monograph examines communication theories, processes, and methods, focusing additional detail on rhetoric, context in messaging, brevity, persuasion and influence, common lexicon, and elements of visual presentation. The intelligence professional armed with this knowledge is capable of more readily providing understandable and impactful OE information to influence efficient and effective decision making.

Communication Theories and Processes

Marianne Dainton and Elaine Zelley describe communication as a process by which people interactively create, sustain, and manage meaning. This process is a means of how we produce both personal relationships and professional experiences and relates to how we plan, control, manage, persuade, understand, and lead.⁷¹ The authors further illuminate that communication has different meaning depending on one's activity. For instance in the business world, the communication process is associated with the flow of information.⁷² Similarly, the US Army, is a military and cultural organization fostering both professional and personal relationships cultivating trust, and relies heavily on the exchange of information.

Brant Short describes several communications models that developed overtime. The first model is linear and focuses on message transmission from sender to receiver. This developed into the interactive model as scholars focused on the importance of context, feedback, and incorporating other transmission channels, beyond face to face such as, written, telephone, or

⁷¹ Marianne Dainton, and Elaine D. Zelley, *Applying Communication Theory for Professional Life: A Practical Introduction* (Thousand Oaks, CA: Sage Publications, 2005), 2.

⁷² *Ibid*, 2.

radio. The next shift, the transactional model, focused on the creation of meaning that emerged from the entire transaction. The meaning construction derives from components such as power, gender, class, and race. Short concludes that theories emerged exploring aspects of each model but the foundation for all is that, communication is a process.⁷³

Amy M. Corey addresses all three models and the communication process in *The Evolution of Human Communication: From Theory to Practice*. She explains that they all develop the communication process by emphasizing certain parts. In the linear model, figure 6, originally developed by social scientists Shannon and Weaver in 1948, describes simply how a sender transmits a message to a receiver. The sender is the source of the message, which consists of words, sounds, or behaviors and is transmitted through a channel or pathway for communication to the target recipient, the receiver. Additionally obstacles or noises exist in the process, which can be interference or distortion.⁷⁴

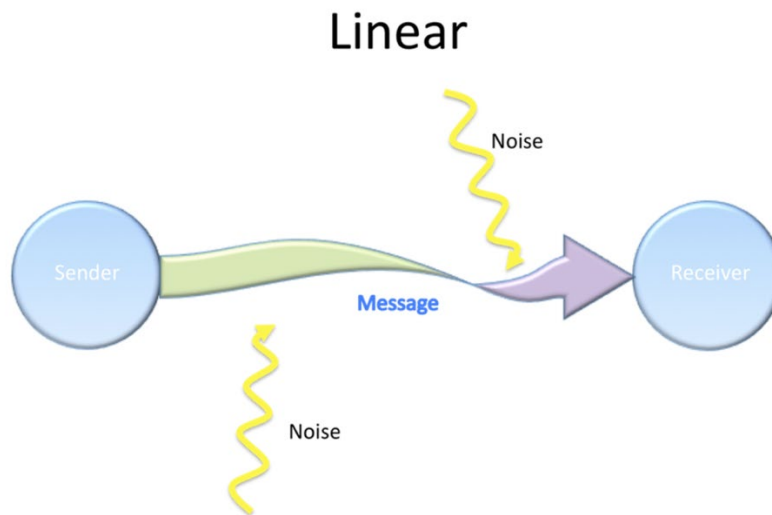


Figure 6. Linear Model. Amy M. Corey, “Chapter 1: Introducing Communications,” in *The Evolution of Human Communication: From Theory to Practice*, by Tess Pierce. Oshawa, ON: EtrePress, 2019, accessed January 6, 2021, <https://ecampusontario.pressbooks.pub/evolution-humancommunication/chapter/chapter-1/>.

⁷³ Brant Short, email message to author, October 22, 2020.

⁷⁴ Amy M. Corey, “Chapter 1: Introducing Communications,” in *The Evolution of Human Communication: From Theory to Practice*, by Tess Pierce. Oshawa, ON: EtrePress, 2019, accessed January 6, 2021, <https://ecampusontario.pressbooks.pub/evolutionhumancommunication/chapter/chapter-1/>.

The linear model is rather simple, as it only describes communication in one direction, but communication is much more dynamic, as recognized in the interactional model. The interactional model, figure 7, demonstrates the ongoing process in communication. It takes into account two channels for communication flow and feedback, (the response given from the receiver back to the sender) between sender and receiver. Feedback is acknowledgment and indicates comprehension. This model also includes the field of experience referring to how the environment, culture, and experiences can influence how a sender constructs their message.⁷⁵

Interactive

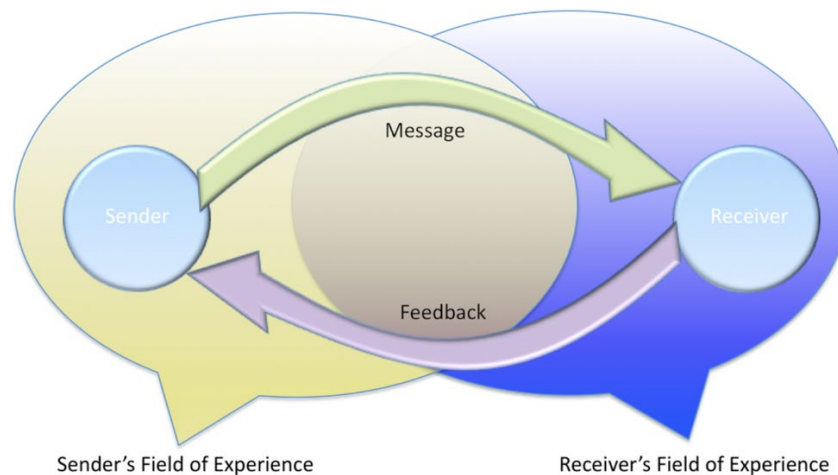


Figure 7. Interactional Model. Amy M. Corey, “Chapter 1: Introducing Communications,” in *The Evolution of Human Communication: From Theory to Practice*, by Tess Pierce. Oshawa, ON: EtrePress, 2019, accessed January 6, 2021, <https://ecampusontario.pressbooks.pub/evolution-humancommunication/chapter/chapter-1/>.

Finally, the transactional model, figure 8, is the most dynamic. In this model the person’s role is no longer sender or receiver but communicator, demonstrating that each participant can play both roles in the communication process. This model views communication as a cooperative transaction, as each person promotes the outcome and effectiveness of the interaction and creates a shared meaning. More focus in the transactional model is placed on the shared field of

⁷⁵ Ibid.

experience. The communicators must share some level of language, culture, and environment in order to communicate effectively. Lastly, this model demonstrates that the messages will influence one another's responses creating an interrelation and build upon each other.⁷⁶

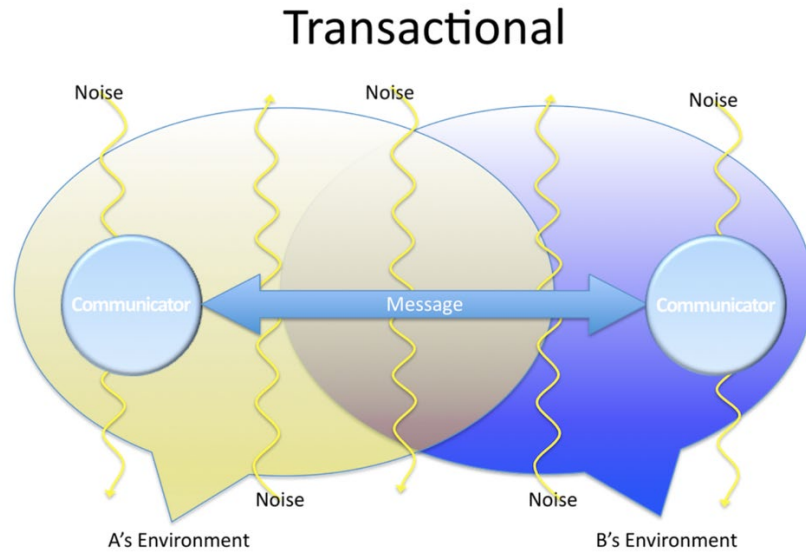


Figure 8. Transactional Model. Amy M. Corey, “Chapter 1: Introducing Communications,” in *The Evolution of Human Communication: From Theory to Practice*, by Tess Pierce. Oshawa, ON: EtrePress, 2019, accessed January 6, 2021, <https://ecampusontario.pressbooks.pub/evolutionhumancommunication/chapter/chapter-1/>.

The evolution to the transactional model has direct application to the intelligence professional and the commander. In order for the intelligence professional to brief the commander and further engage in a dialogue that promotes situational understanding and decision making, there needs to be a shared understanding. As both are in the US Army, often in the same unit and OE, they have some degree of shared experience. Their individual experiences and knowledge likely differ from one another but they each have a frame of mind of how intelligence and operations synchronize and what to bring to the communications process. A similar lexicon or language must be fostered to understand one another. This is developed through a foundation of doctrine, the OE, and force capabilities. The commander likely comes from an operational

⁷⁶ Ibid.

background and is proficient in maneuver warfare. In order for the intelligence professional to be understood, he must understand the maneuver frame of mind, speak the common combat lexicon, and present the message to the commander in that way.

Feedback is an important component in the communication exchange. As the intelligence professional briefs, the commander must engage with the briefer and material, acknowledging and providing feedback. This enhances the conversation creating understanding and inclusion in the commander's decision making process. Noise can be a primal inhibitor of fostering good communication. The commander often faces a great degree of noise such as conflicting intelligence reports, past knowledge that is now irrelevant, his own biases about intelligence value, and other issues amongst the command. Ultimately to improve the communications process, the intelligence professional must be cognizant of these factors and how to best convey their message.

Methods

Design and construction of one's message is the prime component of the communications process. An intelligence professional must brief a commander the OE situation, relevant intelligence, and their assessment. These communication methods must also integrate with cognitive theories, providing multiple modalities to promote learning, retention, and inclusion in decision making. These areas must be properly organized and given the appropriate input for one to have an informative brief.

Joseph McCormack provides valuable insight describing how people can communicate more effectively and efficiently by saying less. When constructing one's message, especially considering the vast amount of information to distill and disseminate, McCormack describes an outline mapping technique to organize and prioritize thoughts with clarity and logic.⁷⁷ Outlining one's message builds personal preparation, organization of ideas, clarity of points, context in the

⁷⁷ Joseph McCormack, *Brief: Make a Bigger Impact by Saying Less* (Hoboken: Wiley, 2014), 46.

bigger picture, and confidence in presentation.⁷⁸ A brief outline should consist of a background, reason, information, ending or conclusion, and follow-up.⁷⁹

For example, for a battle update brief (BUB), described in ATP 2-33.4 as, “the G-2/S-2 provides an assessment of the threat forces and identifies collection opportunities or requirements to answer the commander’s priority intelligence requirement (PIR),”⁸⁰ the intelligence professional can use McCormack’s outline construct to formulate his message. Beginning by describing the background, he provides an update of the enemy situation along with pertinent weather or terrain information. Next, he states the reason or purpose for the brief, such as to provide additional intelligence collected and its relevance. Key information is provided, such as the most pertinent intelligence collected and presented in a logical manner. He concludes with his assessment based off the gathered intelligence, and if necessary, provides a recommendation to the commander and staff. Finally, he awaits and is prepared for any follow-up questions, discussion, or additional analysis of enemy alternative COAs.

In addition to McCormack’s outline method, emphasizing one’s main points, and key conclusion or take-away is useful in the message structure. Provide the main points and those of importance and interest to the commander at the beginning and restate them at the conclusion. This is impactful as the most significant points remain in the forefront of the audience’s minds. Julie Dirksen, author of, *Design for How People Learn*, combines cognitive theories for practical uses and states, “repetition will refresh the information in working memory.”⁸¹ McCormack uses a method throughout his book at the beginning and ending of each chapter, titled “long story short,” which summarizes the main point one is about to read and recapping it afterwards. Similarly in the US Army, a common on-the-job-training method is the term ‘so-what’ or the

⁷⁸ Ibid, 48.

⁷⁹ Ibid, 51.

⁸⁰ US Army, ATP 2-33.4, E-11.

⁸¹ Julie Dirksen, *Design for How People Learn*, 2nd ed. (n.p.: New Riders 2016), 87.

acronym BLUF (bottom line up front) which is commonly used to describe the main take-away from a presentation slide. This is an excellent tool to give the commander an introduction of why the information is important and a concluding reminder.

McCormack provides a sounds structure for constructing one's message that is valuable in a time constrained environment. Other methods to include such as storytelling, using metaphors and analogies, can provide powerful reach to the audience. Carmine Gallo, for example, examines methods of successful public speakers, particularly for "TED" talks. TED – which stands for technology, entertainment and design – is a modern platform for leaders to provide impactful presentations in a digital era and has become the premier standard for public speaking. Gallo examines storytelling as a common successful method in public speaking. He states that brain scans reveal that stories stimulate and engage the human brain, allowing the speaker to connect with the audience. Simply put, storytelling reaches people's hearts and minds.⁸² In *Five Stars*, Gallo examines a story structure and its application to work place communications. Gallo states that this three-act structure – which consists of the set-up, the confrontation, and the resolution – ultimately makes a narrative easier to follow and satisfying.⁸³ Gallo compares how each act applies to a Hollywood screenplay and to a business presentation. During the set-up, characters and their world are introduced; the confrontation brings changes into the hero's world and obstacles to overcome; and the resolution sees problems solved and the hero's world transformed. Similarly in a business presentation, the current state of the company and industry are described followed by outlining the obstacles and possible solutions to overcome them, ending with presenting a company's product or strategy as the solution.⁸⁴

⁸² Carmine Gallo, *Talk Like Ted: The 9 Public-Speaking Secrets for the World's Top Minds* (NY: St. Martin's Press, 2014), 44.

⁸³ Carmine Gallo, *Five Stars: The Communication Secrets to Get from Good to Great* (NY: St. Martin's Press, 2018), 165.

⁸⁴ *Ibid*, 165.

In addition to storytelling, Gallo examines a rhetorical device, gleaned from Aristotle, the use of analogies and metaphors to increase the impact of one's message. An analogy is the comparison of two things and describing how they are similar and a metaphor is a literary device describing one thing in terms of another. Both tools encourage the listener to think differently about an idea.⁸⁵ Gallo interviews a cognitive scientist who examines the use of analogies and determines that because analogies are so ingrained in human thought, they prove efficient in conserving brain power.⁸⁶ An intelligence professional can design their message and increase its impact by using storytelling, analogies, and metaphors to explain complex information, making it simple, familiar, and relatable to the commander and staff. Making complex information understandable and relatable are key components in communication and are strengthened with elements found in Aristotle's rhetoric.

Rhetoric

For over 2000 years, rhetoric has remained the foundation of public speaking and persuasion, according to Short.⁸⁷ In *Rhetoric*, Aristotle writes, "Rhetoric may be defined as the faculty of observing in any given case the available means of persuasion. This is not the function of any other art."⁸⁸ Derek Sweet, defines rhetoric in greater detail and its implications in communication today. He expands on Aristotle's original meaning and incorporates communication concepts to define rhetoric as a communication practice to persuade an audience in both discursive (seen in speeches and essays) and non-discursive (seen in television, films, music and art) means.⁸⁹ Moreover, "Rhetoric is also intentional in that a rhetor chooses which

⁸⁵ Ibid, 191.

⁸⁶ Ibid, 193.

⁸⁷ Brant Short, email message to author, October 22, 2020.

⁸⁸ Aristotle, *Rhetoric*, bk. I, pt. 2.

⁸⁹ Derek Sweet, "Chapter 7: The Rhetorical Turn," in *The Evolution of Human Communication: From Theory to Practice*, by Tess Pierce, Amy M. Corey, Mark D. Johns, Kristin Moss, and Derek Sweet.

problems to address, issues to make salient, audiences to address, and rhetorical strategies to employ... rhetoric is always developed, and presented, in pursuit of a goal.”⁹⁰

An important characteristic of rhetoric is its focus on persuasion and the intent to change, influence, or move an audience. One such strategy developed by Aristotle is the three modes of proof: ethos, pathos, and logos. Ethos relates to trust in the speaker’s character, credibility, expertise, reputation, and an awareness of the cultural values and goals of the audience. Logos is an appeal to reason of logical argument. Pathos is the emotional appeal the speaker makes with the audience that can create powerful connections to persuade. Narratives developed with emotional language and dynamic images can stir feelings of love, laughter, guilt, shame, anger, nostalgia, or fear.⁹¹ Gallo emphasizes the importance of pathos as the key element of persuasion, as emotions are the driving force behind sparking other people’s inspiration and excitement. He confirms this, consulting with neuroscientists who analyzed brain imaging, concluded that emotions grab our attention and are better remembered. Gallo also reinforces Aristotle’s emphasis on pathos, as he believed appropriate emotions should guide our decisions.⁹² These details correspond with how emotions are intertwined in cognition processes and decision making.

An intelligence professional, using the three rhetorical modes can provide an informative, impactful, and memorable brief. To display ethos, an intelligence professional must possess an understanding of their occupational skill, the IC, knowledge of the OE and the organization’s goals, and display confidence, credibility, and honest assessments. He should incorporate logos through a structured message paired with sound evidence to reinforce his assessment. Finally, to display pathos, he must assess the degree of emotional usage. Too much emotion can wrongly

Oshawa, ON: EtrePress, 2019, accessed January 6, 2021, <https://ecampusontario.pressbooks.pub/evolutionhumancommunication/chapter/chapter-7/>.

⁹⁰ Ibid.

⁹¹ Ibid.

⁹² Gallo, *Five Stars*, 43-45.

fuel attention and premature action toward an incomplete situational picture. The right amount of appropriate emotion can trigger interest in the audience, tap their motivations, and encourage sound action based on the situational evidence, achieving a faster decision.

Brevity

The emerging complex and multi-domain OE will bring more battlefield effects causing commanders to act in shorter decision space. This constrained environment increases the significance of swiftly receiving information and demanding faster consumption and action. Therefore, brevity in one's briefing is increasingly more important. McCormack emphasizes similar time sensitive situations where speakers often miss the mark because of an inability to be clear, concise, and compelling. Having brevity is a compact quality of expression and one should always seek to say more with less.⁹³ McCormack discusses brevity from a logical approach advising a presenter to organize their message with the right amount of detail for easy consumption, listening, and understandability.⁹⁴ He recommends the power of threes, such as introducing three main points for discussion. This establishes logic in the message, allowing the audience to easily stay on track, manage their time, expectations, attention, and remain connected.⁹⁵ Similarly, Gallo endorses this powerful rule as people tend to remember information better in groups of three. Additionally the rule of three aides in condensing your presentation to eighteen minutes.⁹⁶

Chris Anderson, the curator of TED Talks, advocates for presentation literacy. He claims presentation literacy is a core skill for the twenty-first century to get one's ideas across in an

⁹³ McCormack, 10, 11.

⁹⁴ Ibid, 215.

⁹⁵ Ibid, 203, 211.

⁹⁶ Gallo, *Talk Like Ted*, 191.

interconnected and technology rich world.⁹⁷ A key factor in presentation literacy is time limitation. Anderson allocated eighteen minutes as the maximum time to conduct a TED Talk as it is both the precise amount to hold people's attention and enough time to be taken seriously.⁹⁸ Along similar lines, Paul King recognizes that thinking, speaking and listening are physically demanding activities that expend cognitive energy. As information accumulates, it increases one's cognitive load and causes cognitive backlog, which continually piles on material to be retrieved later. As the presentation drags on, it increases the listener's mental burden as they must continually organize, comprehend, and remember information.⁹⁹

In high tempo operations, less time will be allocated for staff briefings. Therefore, the presenter must condense their message and convey it as quickly as possible. Limiting time may seem like a constraint but it allows the presenter to show greater discipline in framing their message and focusing on their delivery. Brevity and the previously stated presentation methods apply to an oral presentation and written staff products. Written products often contain more descriptive information and must be formatted to provide the commander with the key message and supporting details. Concerning written communications, McCormack suggests using a strong inviting title, bolding key ideas, using introducing points with bullets or numbers, and trimming unnecessary fluff to make it consumable and concise.¹⁰⁰ McCormack summarizes the importance of brevity stating, "brevity plays an essential role in framing and sharing a big idea by making it easy to understand and quick to explain."¹⁰¹ A written intelligence product is a hallmark of an intelligence professional and when unavailable to provide an oral brief, the product should "brief itself" with clarity and if needed, accompanied by a supporting visual graphic.

⁹⁷ Chris Anderson, *TED Talks: The Official TED Guide to Public Speaking* (London: Nicholas Brealey, 2018), 10.

⁹⁸ Anderson, 34.

⁹⁹ Gallo, *Talk Like Ted*, 184-185.

¹⁰⁰ McCormack, 103.

¹⁰¹ *Ibid*, 154.

Visual Presentation

Upon reviewing a variety of sources on education, learning, public speaking, and presentations, there is a general consensus that many presentations fail due to incorrect use of PowerPoint. Common issues that result in “Death by PowerPoint” include, cluttered and disorganized slides with complex detailed graphs, bullet points, full sentences, and small text.¹⁰² Visual elements should serve to support one’s presentation and reinforce one’s message without being overwhelming. This can be achieved with proper attention to the form and display of content.

Garr Reynolds, seeks to improve presentation, primarily focusing on simplicity in design, incorporating comparative approaches found in Zen practice such as aesthetics, mindfulness, and connectedness.¹⁰³ The key tenet of the Zen aesthetic for simplicity is kanso, which is visual beauty and elegance. Kanso is achieved by elimination or omission, or achieving the maximum impact using the minimal means.¹⁰⁴ Simplicity, similar to brevity, is not “dumbing down” or laziness, but an intelligent desire for clarity that gets to the essence of an issue.¹⁰⁵ Reynolds seeks to remove the nonessential and allow visuals to have practical applications embracing the aesthetics and lead to a more enlightened design.¹⁰⁶ He provides many ways to reach simplicity, but two areas of emphasis, space and balance, stand out as useful elements in slide presentation. Often presenters make the mistake of filling every area of space with something. Empty or negative space may look lazy but it gives power to the few elements on the slide. Balance can be achieved symmetrically or asymmetrically, has a clear, unified message, and guides the viewer

¹⁰² Jonathan Schwabish, *Better Presentations: A Guide for Scholars, Researchers, and Works* (NY: Columbia University Press, 2017), 2-3.

¹⁰³ Garr Reynolds, *Presentation Zen: Simple Ideas on Presentation Design and Delivery* (Berkeley, CA: New Riders, 2008) 7.

¹⁰⁴ Ibid, 107.

¹⁰⁵ Ibid, 103.

¹⁰⁶ Ibid, 110.

where to look. Both space and balance draw the audience in and naturally allow the viewer to see the slide, not causing them to think where to look.¹⁰⁷

Simplicity is an excellent consideration in communications and aesthetics and has direct relation to the content on the slide. The slide content for follow-on discussion will include visual images, text, and color. Reynolds states the collective power of a presentation, “projected slides should be as visual as possible and support your points quickly, efficiently, and powerfully.”¹⁰⁸ Beginning with visual images, Jonathan Schwabish, advises to use images that support one’s spoken message and promote learning.¹⁰⁹ Visuals, which could include a photograph, graph, geographical image, map, or icon, should always reinforce one’s narrative and replace the need for excess words. When briefing an image, such as a map or graphical overlay, with templated military icons, orient the audience to the graphic from a macro perspective to the micro view, highlight the key features and discuss the main points of emphasis in relation to the theme of the briefing. In a military sense, the graphic along with the narrative should develop the audience’s situational understanding of the OE and paint the picture for the commander’s visualization.

Similar to a visual, text should be used to reinforce one’s points but used sparingly as more words may reduce the presentation’s impact. Schwabish cautions against using too many words as it causes your audience to read instead of listen. If the speaker solely reads the text, it causes the audience to tune out the speech and lose the message.¹¹⁰ Reynolds describes a traditional yet erroneous presentation rule for using a minimum number of text called the “1-7-7 Rule,” standing for one main idea per slide, a maximum of seven lines of text, and a maximum of seven words per line. He advises against this rule, as it overwhelms the slide with text. He also advises against bullet points as they prove more effective in written documents but lose their

¹⁰⁷ Ibid, 145-148.

¹⁰⁸ Ibid, 68.

¹⁰⁹ Schwabish, 117.

¹¹⁰ Ibid, 67.

effectiveness in a talk.¹¹¹ David JP Phillips concurs with other presentation authors on slide content. He states that too many objects on a slide are the problem, as more cognitive energy is required to count them. He finds that six total objects are the ideal amount for people to simply see them, requiring less cognitive energy.¹¹²

When using text, Schwabish provides some useful insights in making it stand out and exhibit benefit. Ensure the text has a purpose. Design the presentation like a billboard for the person in the back of the room using large type that is simple, direct, and memorable. He recommends bigger size text, such as twenty-eight, thirty-six, forty-eight point, or higher.¹¹³ Text font can direct the tone and feel of your presentation and affect the audience's perception of your content. When choosing a typeface, ensure it clearly shows letters and numbers and there are visible distinctions between regular, bold, and thin.¹¹⁴

The final portion to address in visual content is color. An important factor in creating colorful and impactful visual presentations is contrast. Reynolds describes contrast simply as meaning difference. Contrast is a powerful design concept and gives the slide its energy, promoting interest, and gets the viewer to your point quickly. Color and all other elements of design such as line, shape, texture, size, space, and type, can be manipulated to create contrast.¹¹⁵ Phillips emphasizes how contrast controls the audience's focus and recommends the use of the animation in PowerPoint to highlight objects to direct the audience along.¹¹⁶ Schwabish stresses color simplicity, suggesting to use a few appropriate colors to build highly visual and focused slides. He recommends using three or four colors plus black, white, and grey consistently

¹¹¹ Reynolds, 130.

¹¹² David JP Phillips, "How to Avoid Death by PowerPoint," filmed April 14, 2014 in Stockholm, SE, TED video, 20:31, accessed January 13, 2021, <https://www.youtube.com/watch?v=Iwpi1Lm6dFo>.

¹¹³ Schwabish, 51-52.

¹¹⁴ Ibid, 54, 57.

¹¹⁵ Reynolds, 153.

¹¹⁶ Phillips.

throughout the entire presentation and resisting the use of default colors in order to stand out from normal presentations.¹¹⁷ Schwabish emphasizes color contrast to provide ease of reading to the audience, directing their attention, and highlighting the important parts of the presentation.¹¹⁸

Schwabish states a major theme in aesthetic designing: “The design of your presentation plays a major role in what your audience sees, what they focus on, and how they perceive your message... The look and feel of your slides will set your audience’s expectations, draw them into your presentation, and keep them engaged.”¹¹⁹ The quality of an intelligence professional’s written or visual product builds confidence in the commander and staff, adding to his level of ethos. Quality use of speech including; a unified message, brevity, clarity, simplicity, along with pathos, will aid in getting the point across powerfully, ensuring it is understood, and incorporated in operational planning and decision making.

¹¹⁷ Schwabish, 31.

¹¹⁸ Ibid, 42, 50.

¹¹⁹ Ibid, 29.

Conclusion and Recommendations

Cognitive theories and communications must be applied to derive their effectiveness in combat operations. The following scenario illustrates an intelligence officer applying this knowledge. Consider in combat operations, collection efforts produce actionable intelligence permitting a fleeting window of opportunity to conduct offensive maneuvers against a vulnerable enemy. The intelligence officer evaluates, analyzes, and produces an intelligence update, preparing to brief the commander and staff in a BUB. The nature of the intelligence demands a sense of urgency, requiring brevity and word precision. In such circumstances, a single presentation slide is ideal, displaying a graphic of the OE, templated with the enemy's defensive position. Highlighted in the slide is the BLUF that succinctly describes the intelligence collection, the enemy's vulnerability, and the recommended friendly COA.

The intelligence officer provides a single graphic, few amounts of text, and an oral description of the intelligence enacting the Dual Coding Theory, eliciting multiple learning modalities. To eliminate the danger of reaching cognitive load, he uses brevity, clarity, and concise words to easily describe the complex OE. This quick and simplistic delivery increases his ethos and establishes logos in his argument. Demonstrating pathos, he directs the audience's attention, highlighting key details, and focusing on the confidence in the collected intelligence. The mutual trust in the briefer exhibits System 1 thinking within the commander and staff. If uncertainties arise amongst the audience, System 2 thinking occurs, promoting feedback in the transactional communication process. Group discussion using System 2 thinking further promotes situational understanding of the OE, building upon the commander's visualization. The experienced commander now takes-in all the information and formulates possible mental scenarios using the naturalistic decision making process and comes to a decision to act on the recommendation.

This is an ideal scenario for an intelligence professional providing situational understanding leading toward faster command decision making. The intelligence professional enhanced their abilities in this instance by knowing and applying cognitive theories and communications. Cognitive understanding includes theories of how people think, learn, and make decisions. Understanding in communication includes theories, processes, and methods, which include, rhetoric, brevity, and visual presentations. Analyzing and synthesizing this knowledge illuminates the need for several recommendations concerning changes to current US Army doctrine and the practical application of engagement within presentations.

First, doctrine should be updated to offer more effective guidance for preparing US Army presentations. As stated from FM 6-0, there is minimal information about how to provide military briefings, yet communications are a key facet of staff processes. Furthermore in the intelligence manuals, there is also little description of public speaking or visual presentation, which are deemed core intelligence competencies. The US Army must change its current culture of the long, text and picture heavy, cluttered presentations, and that irritably cause “Death by PowerPoint.” Switching to slides solely for presentation purposes will be a positive shift in daily operations.

A second recommendation is engagement in presentations. Engagement with the audience and with the material is key to efficient learning. Engaging the audience’s thinking (both System 1 and System 2) using multiple learning modalities will enable greater apprehension, and memory recall, for constructing decision making processes. Caviglioli provides some suggestions for visual presentations. He recommends inclusion of the modality principle. This principle pairs visuals with narration, which distribute the information load evenly amongst auditory and visual channels. The modality principle proves more effective than typical presentations that use visuals and text, as both rely on the same visual channel.¹²⁰ On visuals, McCormack and others recommend using infographics. Infographics are compact, visually

¹²⁰ Caviglioli, 123.

appealing interpretations of numerical and verbal data. Infographics also distill complex information and are easy to consume.¹²¹

Another engagement solution, to captivate the target audience, is the use of simple illustrations instead of pre-designed PowerPoint presentations. Dan Roam, author of *Back of the Napkin: Solving Problems and Selling Ideas with Pictures*, is an advocate for simple drawings to provide powerful visuals to inspire leaders. He mentions that audiences tend to respond better to hand drawn images rather than polished graphics, as they are more inviting and easily changed.¹²² Drawing on a white board or paper creates engagement with the audience and encourages interaction and feedback in briefings and idea sharing, key in transactional communications. This is demonstrated in a personal briefing with the commander, providing a printed placement or as Caviglioli describes as a poster, to guide the commander through complex information. Caviglioli also states that posters can be used for many purposes, as they are larger and become like billboards, reaching a mass audience. They are organized for easy reading, chunking sections into recognizable units, and easy information navigation.¹²³ These posters or placemats can include infographics to distill complex information and make it more familiar to the commander.

Upon reviewing this monograph, recommendations are evident to promote rapid decision making within the complex OE. The current force must adapt to changes in staff processes. The scenario mentioned should be evaluated by intelligence professionals to exhibit prowess in providing situational understanding, leading toward faster command decision making. The most prominent take-away from this monograph is engagement in presentations. Engagement with the

¹²¹ McCormack, 92, 97.

¹²² Dan Roam, *Back of the Napkin: Solving Problems and Selling Ideas with Pictures* (NY: Portfolio Penguin, 2009), 23.

¹²³ Caviglioli, 62.

audience and with the material is key to efficient learning. These solutions will help streamline immediate and precise information to key decision makers for optimal planning and execution.

Bibliography

- Anderson, Chris. *TED Talks: The Official TED Guide to Public Speaking*. London: Nicholas Brealey, 2018.
- Axley, Stephen R. "Managerial and Organizational Communication in Terms of the Conduit Metaphor." *Academy of Management Review* 9, no. 3 (July 1984): 428-237. Accessed October 21, 2020. <https://www.jstor.org/stable/258283>.
- Bumiller, Elisabeth. "We Have Met the Enemy and He is PowerPoint." *The New York Times*, April 26, 2010. Accessed November 23, 2020. <https://www.nytimes.com/2010/04/27/world/27powerpoint.html>.
- Caviglioli, Oliver. *Dual Coding with Teachers*. Woodbridge, UK: John Catt Educational, 2019.
- Clark, James M., and Allan Paivio. "Dual Coding Theory and Education." *Educational Psychology Review* 3 no. 3 (September 1991): 149-210. Accessed October 2, 2020. <https://www.jstor.org/stable/23359208>.
- Dainton, Marianne and Elaine D. Zelley. *Applying Communication Theory for Professional Life: A Practical Introduction*. Thousand Oaks, CA: Sage Publications, 2005.
- Dirksen, Julie. *Design for How People Learn*. 2nd ed. N.p.: New Riders, 2016.
- Fleming, Neil D. "The VARK Modalities." VARK: Visual, Aural, Read/Write, Kinesthetic: A Guide to Learning Preferences. Accessed November 25, 2020. <https://vark-learn.com/introduction-to-vark/the-vark-modalities/>.
- Freedberg, Sydney J., Jr. "'A 20th Century Commander Will Not Survive': Why the Military Needs AI." *Breaking Defense*, January 12, 2021. Accessed January 19, 2021. <https://breakingdefense.com/2021/01/a-20th-century-commander-will-not-survive-why-the-military-needs-ai/>.
- Gallo, Carmine. *Five Stars: The Communication Secrets to Get from Good to Great*. NY: St. Martin's Press, 2018.
- Gallo, Carmine. *Talk Like Ted: The 9 Public-Speaking Secrets for the World's Top Minds*. NY: St. Martin's Press, 2014.
- Hess, Edward D. *Learn or Die: Using Science to Build a Leading-Edge Learning Organization*. NY: Columbia University Press, 2014.
- Jonassen, David H. "Designing for Decision Making." *Educational Technology Research and Development* 60 no. 2 (April 2012): 341-359. Accessed August 16, 2020. <https://www.jstor.org/stable/41488586>.
- Kahneman, Daniel. *Thinking, Fast and Slow*. NY: Farrar, Straus and Giroux, 2011.
- Klein, Gary. *Sources of Power: How People Make Decisions*. Cambridge, MA: The MIT Press, 2017.

- Khazan, Olga. "The Myth of 'Learning Styles'." *The Atlantic*, April 11, 2018. Accessed August 31, 2020. <https://www.theatlantic.com/science/archive/2018/04/the-myth-of-learning-styles/557687/>.
- Kearley Greg and Richard Culatta. "Learning Theories." Instructional Design. Accessed November 25, 2020. <https://www.instructionaldesign.org/theories/>.
- Kulhavy, Raymond W., William A. Stock, Kristina A. Woodard and Robert C. Haygood. "Comparing Elaboration and Dual Coding Theories: The Case of Maps and Text." *The American Journal of Psychology* 106, no. 4 (Winter 1993): 483-498. Accessed October 2, 2020. <https://www.jstor.org/stable/1422965>.
- McCormack, Joseph. *Brief: Make a Bigger Impact by Saying Less*. Hoboken: Wiley, 2014.
- Nordquist, Richard. "The Basic Elements of the Communication Process." ThoughtCo. Accessed October 21, 2020. <https://www.thoughtco.com/what-is-communication-process-1689767>.
- Pashler, Harold, Mark McDaniel, Doug Rohrer and Robert Bjork. "Learning Styles: Concepts and Evidence." *Psychology Science in the Public Interest* 9, no. 3 (December 2008): 105-119. Accessed September 23, 2020. <https://www.jstor.org/stable/20697325>.
- Paas, Fred, Tamara van Gog and John Sweller. "Cognitive Load Theory: New Conceptualizations, Specifications, and Integrated Research Perspectives." *Educational Psychology Review* 22, no. 2 (2010): 115-121. Accessed October 31, 2020. <https://www.jstor.org/stable/23364124>.
- Petersen, Martin. "What I Learned in 40 Years of Doing Intelligence Analysis for US Foreign Policymakers." *Studies in Intelligence* 55 no. 1 (March 2011): 13-20. Accessed October 16, 2020. <https://www.cia.gov/library/center-for-the-study-of-intelligence/csi-publications/csi-studies/studies/vol.-55-no.-1/what-i-learned-in-40-years-of-doing-intelligence-analysis-for-us-foreign-policymakers.html>.
- Phillips, David JP. "How to Avoid Death by PowerPoint." Filmed April 14, 2014 in Stockholm, SE. TED video, 20:31. Accessed January 13, 2021. <https://www.youtube.com/watch?v=Iwpi1Lm6dFo>.
- Pierce, Tess. *The Evolution of Human Communication: From Theory to Practice*. Oshawa, ON: EtrePress, 2019. Accessed January 6, 2021. <https://ecampusontario.pressbooks.pub/evolutionhumancommunication/front-matter/the-evolution-of-human-communication/>.
- Reynolds, Garr. *Presentation Zen: Simple Ideas on Presentation Design and Delivery*. Berkley, CA: New Riders, 2008.
- Roam, Dan. *Back of the Napkin: Solving Problems and Selling Ideas with Pictures*. NY: Portfolio Penguin, 2009.
- Roth, Rolf I. "The Rational Analytical Approach to Decision-Making: An Adequate Strategy for Military Commanders?" *Connections* 3, no. 2 (June 2004): 71-92. Accessed August 17 2020. <http://www.jstor.org/stable/26323035>.

- Schwabish, Jonathan. *Better Presentations: A Guide for Scholars, Researchers, and Works*. NY: Columbia University Press, 2017.
- Swenson, Russell G. ed., *Bringing Intelligence About; Practitioners Reflect on Best Practices*. Washington, DC: Government Printing Office, 2003.
- US Department of the Army. Army Doctrine Publication 2-0, *Intelligence*. Washington, DC: Government Publishing Office, 2019.
- US Department of the Army. Army Doctrine Publication 5-0, *The Operations Process*. Washington, DC: Government Publishing Office, 2019.
- US Department of the Army. Army Doctrine Publication 6-0, *Mission Command: Command and Control of Army Forces*. Washington, DC: Government Publishing Office, 2019.
- US Department of the Army. Army Techniques Publication 2-33.4, *Intelligence Analysis*. Washington, DC: Government Publishing Office, 2019.
- US Department of the Army. Army Techniques Publication 5-0.1, *Army Design Methodology*. Washington, DC: Government Publishing Office, 2015.
- US Department of the Army. Field Manual 3-13, *Information Operations*. Washington, DC: Government Publishing Office, 2016.
- US Department of the Army. Field Manual 6-0, *Commander and Staff Organization and Operations*. Washington, DC: Government Publishing Office, 2014.
- US Department of the Army. Field Manual 6-01.1, *Knowledge Management Operations*. Washington, DC: Government Printing Office, 2012.
- US Department of the Army. Training and Doctrine Command (TRADOC) Pamphlet 525-3-1, *The U.S. Army in Multi-Domain Operations 2028*. Washington, DC: Government Printing Office, 2018.
- US Department of Defense. Joint Staff. Joint Publication 2-0, *Intelligence*. Washington, DC: Government Printing Office, 2013.
- US Department of Defense. Joint Staff. Joint Publication 3-0, *Joint Operations*. Washington, DC: Government Printing Office, 2018.