Indian and Gurkha soldiers inspect captured Japanese ordnance during the Imphal-Kohima battle in World War II, 1944. The tide of the battle turned in favor of the British and Indian forces when savvy commander Field Marshall Viscount William Slim was able to discern the intent of his enemy and take advantage of the situation, providing a good example of what the author of this article refers to as the emergence of exceptional information. (Photo courtesy of the Study Collection at the National Army Museum)

# Connecting the Dots

## Developing Leaders Who Can Turn Threats into Opportunities

Lt. Col. Richard A. McConnell, DM, U.S. Army, Retired

*Within a week of the start of the Japanese offensive … it became clear that the situation in the Kohima area was likely to be even more dangerous than that at Imphal. Not only were enemy columns closing in on Kohima at much greater speed than I had expected, but they were obviously in much greater strength. … I had been confident that the most the enemy could bring and maintain through such country would be 1 regimental group … I had badly underestimated the Japanese capacity for large scale, long range infiltration, and for their readiness to accept odds in a gamble on supply. Luckily, Major General Soto, Commander of the Japanese 31st Division, was without exception the most unenterprising of all the Japanese generals I encountered. He had been ordered to take Kohima and dig in. … It never struck him that he could inflict terrible damage on us without taking Kohima at all. … I have said I was saved from the gravest effects of my mistake in underestimating the enemy's capacity to penetrate Kohima by the stubborn valor of our troops; but it needed the stupidity of the local enemy commander to make it quite sure.*

—Field Marshall Viscount William Slim

## Then the Unexpected Struck

The unexpected emergence of either threats or opportunities during battle is called exceptional information (EI).[1] The above account by Field Marshall Viscount William Slim is an excellent description of EI emergence. Most notably, Slim recognized the threat when he realized that he had underestimated his opponent. However, Slim also recognized his opponent was incapable of discerning the opportunity with which he, Slim, had been presented. In this case, Slim's ability to perceive the emergence of EI helped him turn a threat into an opportunity. If commanders could recognize EI that helped them mitigate threats, seize opportunities, and turn threats into opportunities, would they do it? Why would they not? Moreover, since commanders are not always present when EI emerges, it would be valuable for them to educate their subordinate leaders to recognize EI and exploit it. Although EI exploitation is not a guarantee of success, commanders who can inflict surprises upon their opponents through the exploitation of EI have a much better chance of seizing the initiative and prevailing during battle.

Interestingly, once military professionals begin looking for examples of EI in operations, numerous examples emerge.

**Battle of Antietam.** Leading up to the Battle of Antietam during the Civil War, Confederate battle plans were discovered wrapped around a bundle of cigars.[2] Leaders in the Union army were slow to recognize this EI and slow to grasp the opportunity with which they had been presented. Recognizing the opportunity early on when there was a chance to act might have prevented the bloody outcome of Antietam.

**World War II.** During the 1940 German attack into France, there were indicators that the Germans might be attacking through the Ardennes Forest toward the city of Sedan.[3] Large amounts of straw had been delivered to the vicinity directly across the Meuse River from the Allies, even though there were few cows or horses in the vicinity that could use the fodder. It turned out that the Germans were using the straw to deaden the sound of their tank tracks when they attacked through the Ardennes Forest. Additionally, French reconnaissance aircraft noticed a large traffic jam of tactical vehicles on the German side of the Ardennes.[4] The emergence of the traffic jam EI combined with the straw EI should have been compelling but was ignored by the Allies. This failure to recognize EI was repeated in December 1944 when soldiers in the Bastogne area began reporting that large amounts of straw were being delivered there by the enemy, even though there were not many cows or horses in the area. Allied leaders failed to grasp the significance of this EI, and their first indication of the emerging threat was when hundreds of German tanks emerged from the forest.

**9/11.** Prior to the attacks on 11 September 2001, flight instructors in Minnesota reported "suspicious 747 flight training."[5] Zacarias Moussaoui had paid over $8,000 for rudimentary flight instruction, supposedly for recreation, but did not possess any flight certifications of any kind. It turned out that Moussaoui only wanted the basics and did not have time to do more than that. This, combined with recent upgrades to the 747 autopilot system that made it easier to manipulate, made flight instructors suspicious.[6]

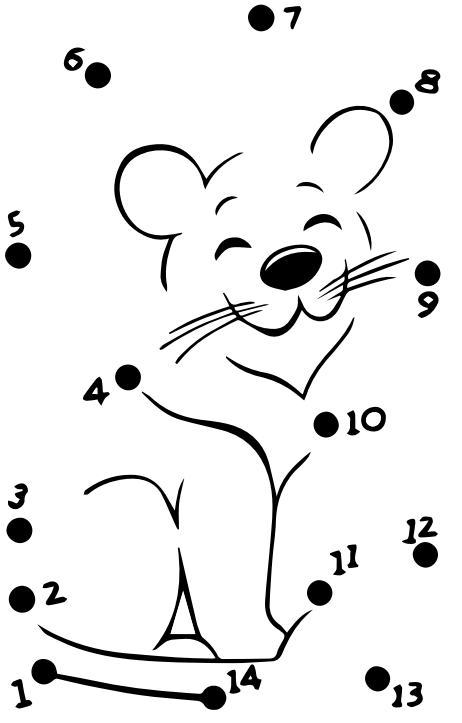
**The Big Short.** A few years prior to the 2008 housing market crash, Dr. Michael Burry noticed the emergence of EI in the form of increased mortgage failure rates amongst adjustable-rate mortgages in mortgage-backed securities.[7] This emerging threat might have discouraged Burry from investing in mortgage-backed securities. Instead, he negotiated with banks to build credit default

swaps that were in effect insurance policies to bet against the housing market. Because of his ability to turn this threat into an opportunity, Burry was able to return several hundred percent on his investment.

The above are just a few examples that illustrate the vital importance of cultivating the skills to recognize and exploit EI. Anticipating the unexpected is a skill that leaders can hone through practice and multiple repetitions. Furthermore, they should pass those acquired skills on to their subordinates. The key is to develop leaders at all levels who can capitalize on the recognition of EI rather than become victims of it. What follows is a deeper discussion of not only what EI is but also how commanders can develop in their subordinate leaders the skills to recognize it as it appears and exploit it to the benefit of their formations.

## Planning to Recognize EI

Before discussing how to recognize EI, it is important to clearly establish how EI is defined. U.S. Army doctrinal references in the past may provide meaningful definitions. For example, thirty years ago, Field Manual 101-5, *Staff Organization and Operations*, defined EI as "the emergence of an unanticipated or unpredicted event that may present an opportunity for success or reveal an immediate or impending threat."[8] This manual was very descriptive in explaining the various ways to recognize EI and what key leaders should do about it. Today, however, EI is only identified in one location within Army doctrine with a less explicitly useful definition. Field Manual 6-0, *Commander and Staff Organization and Operations*, describes EI as "information that would have answered one of the CCIRs [commander's critical information requirements] if the requirement for it had been foreseen and stated as one of the CCIRs."[9] This definition may not seem to be particularly useful in describing the concept of EI; Maj. Jason Wolfe argued in his master's thesis that this doctrinal gap should be corrected by updating doctrine regarding EI and educating leaders of its importance and application.[10] Some might argue that identifying and applying EI is inherently complicated by the fact that we do not know what we do not know, and any attempt to identify it is like fortune-telling or reading tea leaves. However, this practice is not an application of mysticism but instead is a combination of critical and creative thinking.




(Graphic courtesy of www.raisingourkids.com)

**Figure 1. Connecting the Dots**

Leaders can improve their ability to anticipate the unexpected through improving their visualization skills. Many people have improved their visualization skills without even knowing it. For example, as children, many of us were given connect-the-dots sketches where one draws a line between sequential numbered dots that eventually reveal an image (see figure 1). After we had done a few of these connect-the-dots exercises, we got better at anticipating what the image would look like. It simply is a skill of pattern recognition, making connections, filling in knowledge gaps about what we think we see. That is what identification of EI truly is—gaining understanding of the situation through the connection of clues. So if we use the connect-the-dots example, learners who can quickly identify an image without having to connect all the dots might be able to make a decision to either seize an opportunity or mitigate a threat before an opponent can do so. That is essentially what Slim did in the opening scenario of this article. He identified a threat more quickly than his opponent could anticipate an opportunity, and Slim seized the initiative. Currently, doctrine does not address EI to the extent it should; therefore, commanders

are less prepared to teach their subordinates how to identify and apply it to operations.

Identifying and applying EI to timely decision-making constitutes a knowledge gap for leaders attempting to operate in dynamic environments of uncertainty such as combat. Some leaders may have applied EI in planning and simply not been aware. For example, during the military decision-making process course of action analysis (wargaming) step, identifying EI is of paramount importance because identification influences the overall quality of the process and the resulting wargaming products. One key aspect to improving the process and the products is the quality of the thinking that underpins it all.

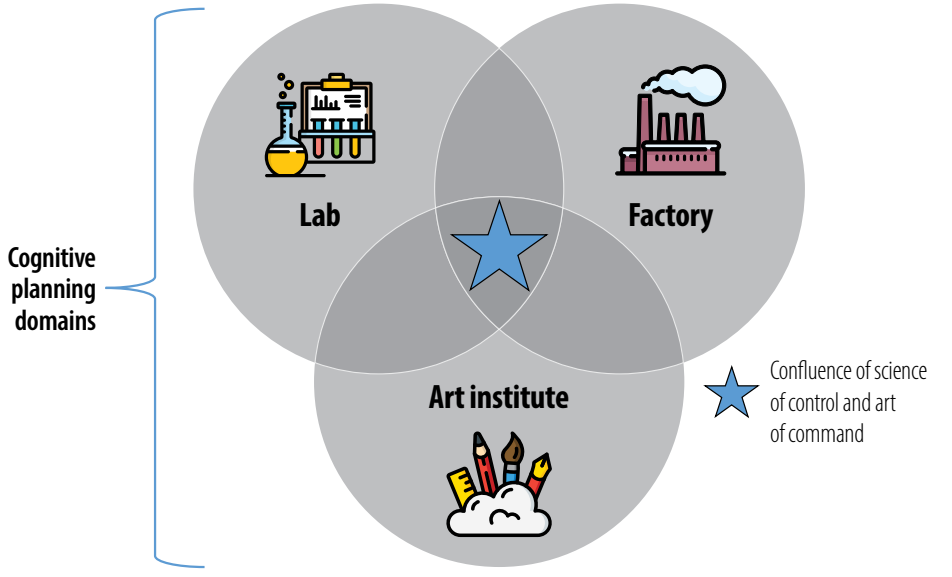
During an experiment examining wargaming at the U.S. Army Command and General Staff College (CGSC), Fort Leavenworth, Kansas, researchers designed a theoretical model to describe a reflective process they had observed during planning that identified three cognitive planning domains (see figure 2, page 31).[11] These cognitive planning domains were labeled the "factory," the "laboratory," and the "art institute." These planning domains are informative in helping understand the breadth and depth of thinking required to create detailed plans. The cognitive planning domains are also a useful construct to assist leaders as they exercise the cognitive skills required to recognize and apply EI.

In the factory, planners are focused on synchronization, integration, and executing the plan. In the laboratory, planners test assumptions and validate the plan. In the art institute, planners use creativity, imagination, and forecasting to determine the level of creative ingenuity within the plan. Where these domains intersect is the confluence of the science of control and the art of command. The key to this process of thinking is to gain a deeper understanding of the quality of thinking underpinning a plan. Investing time in each one of these cognitive planning domains is important to building a comprehensive, detailed plan. However, the utility of the cognitive planning domains goes beyond the mere formulation of a plan. These domains create the context for building EI recognition skills and at the same time building planner capabilities to apply EI once it has been recognized.

Perhaps leaders have heard the common lament of less experienced planners who believe their time was wasted if a plan was not executed the way it was anticipated. Experienced planners know that there is nothing wasted in the planning process. Products can be repurposed and redesigned based on emerging information. But more importantly, the thinking that produced those products constitutes a cognitive muscle exercised and made stronger and more capable by the process itself. This is why if leaders allow staffs to take shortcuts and abbreviate the process by focusing on the factory (such as directed courses of action), they may produce inexperienced staff officers who do not know how to validate plans or stretch their creative wings to ingeniously envision what might be possible. Planners with experience employ all three cognitive planning domains and have the skills needed to identify and apply EI. Proficiency at such skills have a direct impact on the level to which planners understand what is truly occurring in their environment. Therefore, planning processes are more than a means to create products. Rather, planning processes are a form of leader development designed to create planners and leaders who are better thinkers that can make sense of what they see.

Planners continually gather data and process it into useable information. The sooner that information can be analyzed and developed into knowledge, the more likely it is to identify EI. Having identified EI, leaders can then apply judgment to their knowledge to directly affect how the commander understands EI's significance and how it applies to his or her situation.[12] This cyclical process is a skill that must be practiced, repeated, and taught to less experienced planners so that their ability to recognize it as it emerges continues to develop

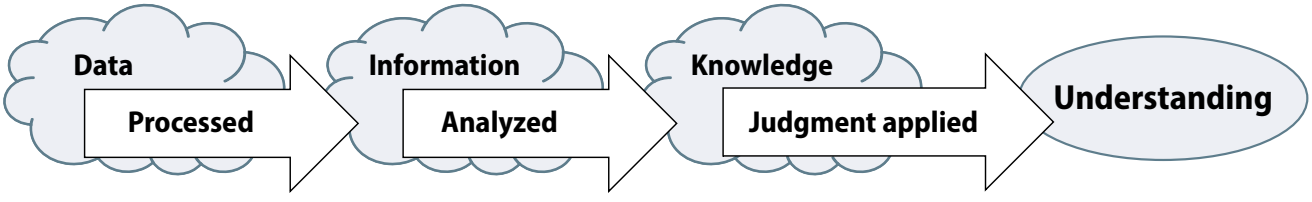
**Lt. Col. Richard A. McConnell, U.S. Army, retired,** is an associate professor in the Department of Army Tactics, U.S. Army Command and General Staff College at Fort Leavenworth, Kansas. He received his BA from the University of Wisconsin–Milwaukee in 1989 and served twenty-five years in the U.S. Army in artillery units in Europe, the Middle East, and the United States. He received his doctor of management in organizational leadership from the University of Phoenix, where his dissertation was an institutional microethnographic examination of the staff group advisor role at the Command and General Staff College at Fort Leavenworth.




(Figure by author)

**Figure 2. The Cognitive Planning Domain**

(see figure 3).[13] In this way, the deliberate planning process is a proving ground for EI's recognition and application as it emerges during execution. Leaders who are deliberate in instilling these skills into their junior planners will be more likely to swiftly identify, apply, and exploit EI, potentially seizing the initiative from their opponents.




(Figure from Field Manual 6-0, *Commander and Staff Organization and Operations*, May 2014)

**Figure 3. Achieving Understanding**

## Recognizing EI during Execution

Once a detailed plan has been formulated, planners are tempted to take up permanent residence in the cognitive planning domain of the factory, but that temptation must be resisted. Experienced planners know that plans rarely come out in the way they were initially devised. The enemy gets a vote, things change in the operational environment, and new information is learned that is turned into knowledge for use during decision-making. Therefore, decisions during execution tend to resemble active experimentation where planners can pair the current state with the envisioned end state while staying sensitive to the emergence of variances to the plan (either threats or opportunities) that might derail it (see figure 4, page 32).[14] In this model, there are two types of decisions: execution decisions and adjustment decisions. If planners effectively identify EI during the planning phase, then they have already anticipated execution decisions that will address threats or opportunities in order to get the plan back on course. However, often planners discover EI while in execution that had not been anticipated, resulting in the need to make adjustment decisions. If the planners are not sensitive to EI emergence, their chances of identifying these adjustment decisions may be hampered, ceding an opportunity to their opponents to recognize and seize the initiative.

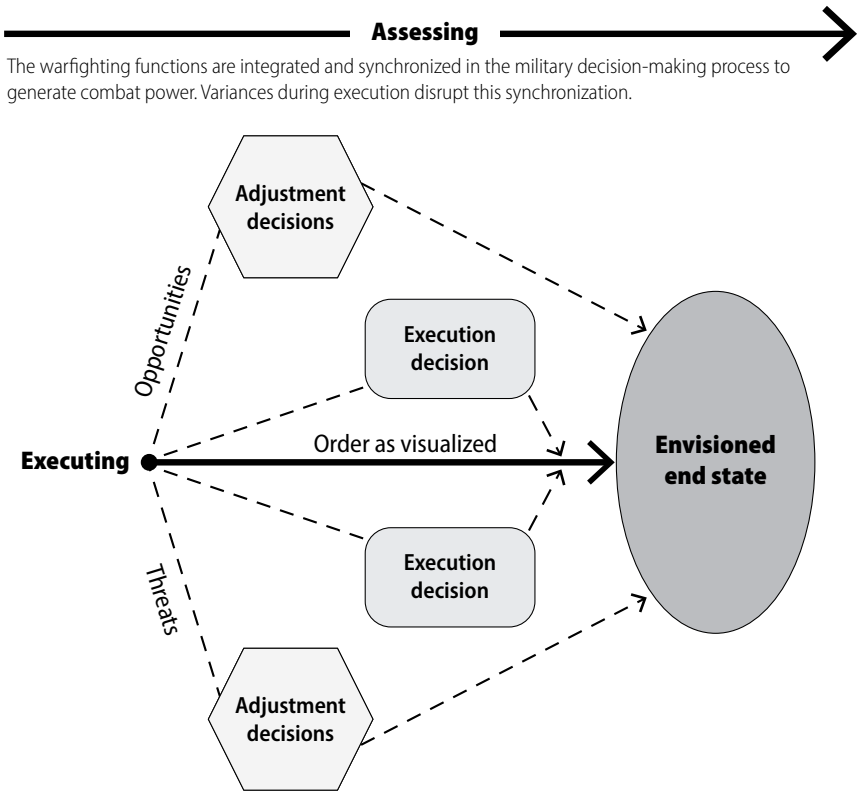
Planners have a process for making adjustment decisions known as the rapid decision-making and synchronization process (RDSP).[15] The RDSP can only work when planners recognize EI emergence. Accordingly, a way for planners to remain sensitive to EI emergence is to maintain the type of thinking employed during planning and to employ all three of the cognitive planning domains. In this regard, the Army design methodology (ADM) may be useful beyond

conceptual planning and employed as plans unfold during execution.

Planners experienced with the ADM are aware that the process is one where leaders identify the current state and the desired end state, frame the problem, develop an operational approach, and then develop the plan (see figure 5, page 33).[16] The model explicitly states "continuous assessment and reframing as required," implying that this model can be useful throughout planning and execution. Constant assessment and reframing should be applied to all of the elements in the ADM. For example, if the current state is incorrectly assessed, it could negatively influence everything that is subsequently developed based on that assessment.

Continual reassessment must also apply to the problem statement. In a recent Small Wars Journal article, CGSC associate professor Dale Spurlin argued that although Army doctrine prescribes problem statements to be developed during planning, once the problem statement is written, many planners never look at the problem statement again.[17] Problem statements should be part of the ongoing assessment process but are often not included. For example, in the opening epigraph regarding Kohima, Slim's initial problem statement might have been: How can the Fourteenth Army prevail against one Japanese regimental group in the vicinity of Kohima given restricted terrain, extended lines of communication, and shortness of time? If Slim's staff had remained focused on continual assessment and reframing, they would have recognized the emergence of the EI of a bigger force moving faster than they expected. In such a case, the problem statement would have had to be adjusted to replace one regimental group with one division—a significantly more difficult problem to solve.

Slim's headquarters was actually experienced at recognizing EI because of its experience with failure earlier in the war; Slim and his soldiers had faced horrendous defeats the year prior to the battle for Kohima. Nevertheless, leaders should consider how they can get their staff and subordinate leaders to gain similar experience through experiential learning without having to face defeat in actual combat in real time. One way to improve EI recognition skills is to deliberately design events that can be inserted into training and educational scenarios that stimulate leaders to use their visualization skills. Such deliberate, repetitive, learning-objective-focused experiences can help commanders develop leaders who can connect the dots to recognize and apply EI.




The warfighting functions are integrated and synchronized in the military decision-making process to generate combat power. Variances during execution disrupt this synchronization.

During execution, commanders and staff also assess the underlying framework of the plan itself. This involves reexamining the original design concept and determining if it is still relevant to the situation.

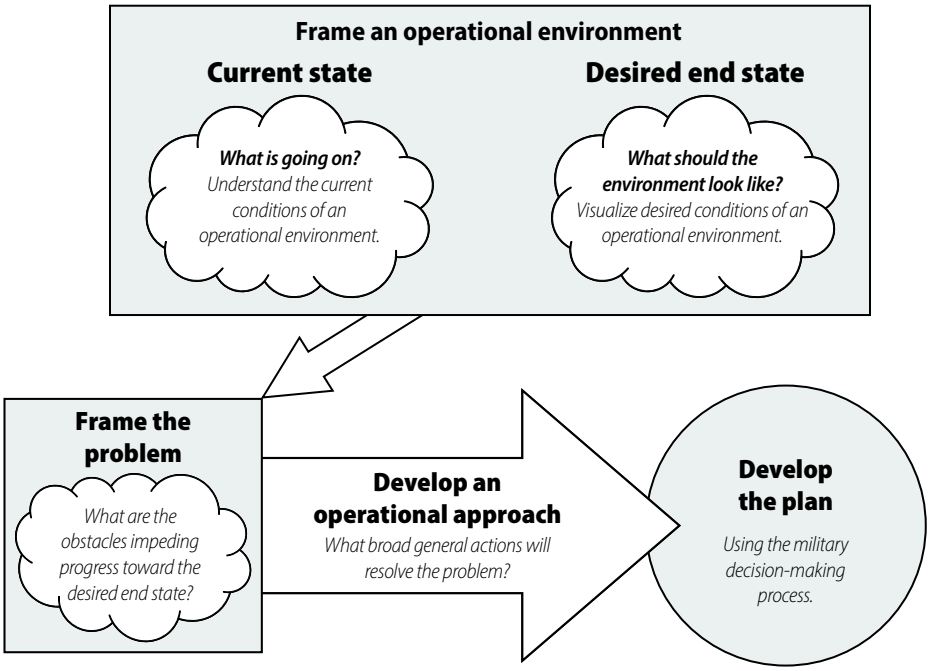
(Figure from Army Doctrine Publication [ADP] 5-0, *The Operations Process*, May 2012)

**Figure 4. Decisions in Execution**

## Developing Leaders Who Can Connect the Dots

In her book *Mindset: The New Psychology of Success*, Carol Dweck describes the difference between a fixed mindset and a growth mindset, a distinction that can be informative for commanders attempting to improve

subordinates' visualization skills.[18] Fixed-mindset people believe that they cannot improve their abilities cognitively. Conversely, growth-mindset people believe that with effort and practice, they can improve their cognitive skills. Commanders who encourage growth mindsets in their subordinate leaders through deliberate practice will have a better chance of making progress and gaining achievements in visualization skills, resulting in more successful EI identification and application.




(Figure from ADP 5-0, *The Operations Process*, May 2012)

**Figure 5. Army Design Methodology**

In her book *Grit: The Power of Passion and Perseverance,* Angela Duckworth describes two key concepts that would also assist commanders as they strive to improve subordinate visualization skills and EI identification.[19] First, Duckworth discusses how talent, skill, and effort relate to achievement, expressed mathematically as "talent x effort = skill" and "skill x effort = achievement." In other words, resilient people who improve their capabilities get double credit for effort. Therefore, commanders who do not deliberately expend effort to improve subordinate visualization skills to recognize and apply EI should not be surprised if their units do not improve at this skill. Secondly, Duckworth discusses the concept of deliberate practice, which includes four specific requirements:

- a clearly defined stretch goal,
- full concentration and effort,
- immediate and informative feedback, and
- repetition with reflection and refinement.[20]

Commanders who expend effort to achieve improvements in visualization skills by employing these requirements for deliberate practice may find that their subordinate leaders will improve in this vital skill.

In his book *Nine Keys to Effective Small Group Leadership,* Carl George describes an effective, practical approach to build new skills in subordinate leaders through an iterative and progressive process that supports Duckworth's requirements:

*I do. You watch. We talk.*
*I do. You help. We talk.*
*You do. I help. We talk.*
*You do. I watch. We talk.*
*You do. Someone else watches.*[21]

In this approach, George gives commanders and organizational leaders a practical protocol for coaching subordinate leaders to improve. This approach would be especially useful as leaders endeavor to inculcate visualization skills and EI identification capabilities in subordinates. Both Duckworth and George emphasize reflection and refinement throughout the process of leader development. Importantly, George completes the process by describing leaders teaching someone else this new skill. This is especially important while improving visualization and EI recognition skills as it gives everyone involved multiple practice repetitions and reinforces the learning through teaching others.

Visualization and EI identification skills have been improved consistently for years during exercises using master event scenario lists (MESLs).[22] During the exercise design process for mission rehearsal exercises, exercise directors use MESLs to focus training to achieve desired learning objectives. Commanders can use the same process to improve subordinate-leader visualization skills. Through the after-action review process, commanders can identify deficiencies in visualization skills and set those as learning objectives for the next phase of the exercise. Various staff members can be enlisted to design MESLs to support learning objectives to improve visualization and EI identification skills. Such design work aids in leader development in two ways. First, it gives subordinate leaders experience in intentionally looking for holes in the plan to exploit in a form of red teaming.

> Red Teaming is a flexible cognitive approach to thinking and planning that is specifically tailored to each organization and each situation. It is conducted by skilled practitioners normally working under charter from organizational leadership. It uses structured tools and techniques to help us ask better questions, challenge explicit and implicit assumptions, expose information we might otherwise have missed, and develop alternatives we might not have realized exist. It cultivates mental agility to allow Red Teamers to rapidly shift between multiple perspectives to develop a fuller appreciation of complex situations and environments. This leads to improved understanding, more options generated by everyone (regardless of rank or position), better decisions, and a level of protection from the unseen biases and tendencies inherent in all of us.[23]

By encouraging the above cognitive approach to thinking and planning, commanders can nurture within their subordinate leaders the cognitive skills needed for improved visualization, EI identification, and application. Commanders can then incorporate these MESLs into their battle rhythm in the command post. For example, a best practice among effective units is to rehearse battle drills at the beginning of every shift. These MESLs can easily be inserted into that process, stimulating discovery-learning that has the potential of not only improving products, but more importantly, the thinking that underpins those products.

Second, commanders who encourage this kind of red team thinking can improve the climate and culture of their organizations. Encouraging red team thinking can support visualization that will make EI identification more likely. As discussed earlier, inexperienced planners are tempted to live in the cognitive planning domain of the factory. Encouraging planners to continue to operate in the cognitive planning domains of the laboratory and the art institute as well as the factory will support visualization and EI identification and application. By deliberately practicing the design process of MESLs during execution, commanders can encourage their subordinate leaders to maintain the balance of critical and creative thinking needed for EI identification.

## Conclusion

Few plans turn out the way planners expected they would. For unexpected variances that create threats and opportunities, planners should use the RDSP. However, if the staff cannot recognize and apply EI, they will never be able to commence the RDSP. Adjustment decisions are made necessary by EI emergence. Therefore, commanders should expend deliberate effort to improve their subordinate leaders' capabilities to recognize unexpected threats and opportunities and act on them. One way to improve these skills is to engage in ongoing exercise design throughout execution. This can be accomplished by crafting MESLs (monkey wrenches to throw into the plan) and ongoing reflection and feedback connected to deliberate goals such as learning objectives. EI recognition and application is not a form of magic but is a skill that leaders can improve through deliberate practice, multiple repetitions, and by transmitting this skill to the next generation of leaders. History is filled with examples of leaders who were able to seize opportunities and mitigate threats as they emerged as well as leaders who were punished for their lack of vision.

Uncertainty in warfare is a constant, change in warfare will accelerate, and the magnitude of change in warfare will increase. Therefore, future commanders can ill afford subordinate leaders who cannot connect the dots and turn threats into opportunities. ■

## Notes

**Epigraph.** William Slim and David Hogan, *Defeat into Victory: Battling Japan in Burma and India, 1942-1945* (New York: Cooper Square Press, 2000), 305, 311.

1. Army Doctrine Publication (ADP) 6-0, *Mission Command: Command and Control of Army Forces* (Washington, DC: U.S. Government Publishing Office [GPO], July 2019), 3-7. ADP 6-0 describes *exceptional information* as "specific and immediately vital information that directly affects the success of the current operation."

2. Jason Wolfe, "Exceptional Information: Recognizing Threats and Exploiting Opportunities" (master's thesis, U.S. Army Command and General Staff College, 2017), 28–29.

3. Hugh M. Cole, *The Ardennes: Battle of the Bulge* (self-pub., CreateSpace Independent Publishing Platform, 2015), 70.

4. *Greatest Events of WWII in Colour*, episode 7, "Battle of the Bulge," directed by Nicky Bolster (Los Gatos, CA: Netflix, 2019), documentary series.

5. National Commission on Terrorist Attacks, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks upon the United States*, Authorized ed. (New York: W. W. Norton, 2004), 291.

6. Office of the Inspector General, *A Review of the FBI's Handling of Intelligence Information Related to the September 11 Attacks (November 2004)* (Washington, DC: U.S. Department of Justice, November 2004), 107, 110, 176, accessed 22 January 2020, https://oig.justice.gov/special/s0606/final.pdf.

7. Michael Lewis, *The Big Short: Inside the Doomsday Machine*, movie tie-in edition (New York: W. W. Norton, 2015), 26–31.

8. Field Manual (FM) 101-5, *Staff Organization and Operations* (Washington, DC: U.S. Government Printing Office, 1990 [obsolete]), 1-2.

9. FM 6-0, *Commander and Staff Organization and Operations* (Washington, DC: U.S. GPO, 2014), 14-4.

10. Wolfe, "Exceptional Information," 61–63.

11. Richard McConnell et al., "The Effect of Simple Role Playing Games on the Wargaming Step of the Military Decision Making Process (MDMP): A Mixed Methods Approach," *Developments in Business Simulation and Experiential Learning: Proceedings of the Annual ABSEL Conference* 45 (2018): 322–59; Richard McConnell and Mark Gerges, "Seeing the Elephant: Improving Leader Visualization through Simple Wargames," *Military Review* 99, no. 4 (July-August 2019): 107–15.

12. FM 6-0, *Commander and Staff Organization and Operations,* 3-1. "Knowledge management and information management assist commanders with progressively adding meaning at each level of processing and analyzing to help build and maintain their situational understanding. They are interrelated activities that support the commander's decision-making. There are four levels of meaning. From the lowest level to the highest level, they include data, information, knowledge, and understanding. At the lowest level, processing transforms data into information. Analysis then refines information into knowledge. Commanders and staffs then apply judgment to transform knowledge into understanding. Commanders and staffs continue a progressive development of learning, as organizations and individuals assign meaning and value at each level."

13. Ibid.

14. ADP 5-0, *The Operations Process* (Washington, DC: U.S. GPO, July 2019), 4-6.

15. Ibid., 4-9.

16. Ibid., 2-17.

17. Dale Spurlin, "The Problem Statement—What's the Problem?," Small Wars Journal, 6 August 2017, accessed 7 January 2019, https://smallwarsjournal.com/jrnl/art/the-problem-statement-%E2%80%93-what%E2%80%99s-the-problem.

18. Carol S. Dweck, *Mindset: The New Psychology of Success*, reprint, updated edition (New York: Ballantine Books, 2007), 16–17.

19. Angela Duckworth, *Grit: The Power of Passion and Perseverance* (New York: Scribner, 2016), 42.

20. Ibid., 137.

21. Carl George and Warren Bird, *Nine Keys to Effective Small Group Leadership: How Lay Leaders Can Establish Dynamic and Healthy Cells, Classes, or Teams* (Taylors, SC: CDLM, 2007), 61.

22. Center for Army Lessons Learned [CALL] Newsletter No. 09-28, *Mission Rehearsal Exercise* (Fort Leavenworth, KS: CALL, April 2009), 90.

23. U.S. Army Training and Doctrine Command G-2 Operational Environment Enterprise, *The Red Team Handbook*, version 9.0 (Fort Leavenworth, KS: University of Foreign Military and Cultural Studies, 2019), 3.