



Marines with Ground Combat Element, Marine Rotational Force–Darwin, man fire support command center and process intelligence collected from small unmanned aerial surveillance drone Raven RQ-11B as part of force-on-force training in Mount Bunde Training Area, Northern Territory, Australia, July 20, 2020 (U.S. Marine Corps/Harrison Rakhshani)

# Design Thinking at the Enterprise Level

## Integrating Defense All-Source Analysis

By James Kwoun

There is no shared understanding within the Defense Intelligence Enterprise about how all-source analytic organizations at different

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echelons should collaborate to support civilian and military decisionmakers. The enterprise produces assessments at the tactical, operational, and strategic levels to offer tailored support for decisionmakers with specific roles. Although leaders within the enterprise and the broader Intelligence Commu-

nity (IC) have taken steps in the past few decades to enhance horizontal integration between all-source analytic organizations, insufficient focus on the vertical integration of analysis throughout the Department of Defense (DOD) persists. The all-source analytic workforce in DOD is diverse, consisting

of smaller communities at different echelons whose members are often unfamiliar with one another. This situation results in vertical misalignment in which analysts are unaware of how their work can impact the mission of their counterparts at other echelons. A design thinking framework applied at the enterprise level should mitigate this problem and encourage the informed interactions necessary to integrate all-source analysis across DOD.

At its core, design thinking is about removing barriers to creativity and promoting an environment that encourages people to experiment with novel ideas. Jeanne Liedtka, a professor at the University of Virginia's Darden School of Business, describes design thinking as overcoming "human biases . . . or attachments to specific behavior norms . . . that time and again block the exercise of imagination."<sup>1</sup> Anthropologist Marcus Griffin defines it as adopting a certain "mindset" and applying "a set of methods" as part of a coherent "system of activities" to promote creativity.<sup>2</sup> Other scholars, such as Ben Zweibelson from the Joint Special Operations University, provide a more abstract definition. He describes design thinking as the use of "one's understanding of yesterday and today to create a different tomorrow by combining established ideas and practices with unexplored or novel ones in emergent ways."<sup>3</sup> Design thinking is an ambiguous concept that scholars and practitioners continue to debate, but many of them agree it is an interdisciplinary field associated with creativity, innovation, and divergent thinking.

The Defense Intelligence Enterprise needs to promote a particular form of creativity that will improve the integration of all-source analysis across tactical, operational, and strategic levels. Creativity in this context involves more than just helping analysts visualize a wider range of possibilities about how adversaries are likely to behave. Analysts must also be creative about how they organize and with whom they collaborate throughout all stakeholder communities. Design thinking is well suited to the goal of pushing people to broaden

their horizons and expose themselves to different perspectives through new interactions. Specifically, it can dislodge an analyst's dominant mental models about a national security issue, expanding perspectives on the stakeholders who should assist in future collaborative working groups. It can also address the tendency to habitually interact with the same colleagues using standardized processes that stifle innovation. Ultimately, design thinking encourages curiosity and a culture of inclusion to overcome intellectual stagnation.

To achieve enterprise-wide integration, leaders must apply a design framework beyond the individual level. The purpose is to expand the collective number of mental models, affording unique perspectives for any given issue. Cultivating creativity in individuals, although important, can go only so far because human beings have limited capacity to accumulate new mental models or expand existing ones. Creativity must be thought of as a collective issue for each organization and ultimately for the enterprise as a whole. A design framework at the organizational level should focus on expanding the pool of mental models within the workforce and fostering an environment where analysts can endlessly broaden their horizons. At the enterprise level, it should focus on establishing shared understanding of the DOD all-source analytic community and devising novel ways to facilitate a complex system of interactions between analysts at all levels. In essence, the framework's goal is to yield new insights by merging existing mindsets throughout a large and diverse workforce.

### What Is Design Thinking?

Design thinking mitigates two powerful factors that hinder creativity: cognitive biases and institutional norms. Cognitive biases occur when people make inaccurate judgments or visualize a narrow range of possibilities because of a tendency to rely on what Richards Heuer calls a "simplified mental model of reality."<sup>4</sup> Mental models exist at the subconscious level as paradigms people use to filter information and make ana-

lytic judgments.<sup>5</sup> Because these subconscious paradigms develop based on the influences of each individual's unique life experiences, they vary considerably in a large community of analysts. Thus, military intelligence analysts may recognize different patterns and arrive at contradictory conclusions when monitoring the same enemy unit on a battlefield. Mental models are valuable as coping mechanisms for complexity and information overload; their downside is that they often lead to cognitive biases as analysts extrapolate insights from previous experiences while subconsciously ignoring important factors in the current environment.

Institutional norms can also impede creative thinking when incentive structures and general expectations result in a high level of conformity. In the military, norms originate from things such as doctrine, culture, rank structure, and a hierarchy. For practical reasons, these norms are necessary to a certain extent, but they also discourage the fresh thinking the military needs. For example, Servicemembers may not offer new ideas during working groups because of doctrinal roles assigned to certain leaders and a reluctance to speak out of turn in front of senior officers. As a result, working groups sometimes become nothing more than a series of isolated briefings by leaders waiting for their turn to speak. In the realm of intelligence, the military's culture of emphasizing battlefield lethality creates incentives that cause all-source analysts to focus on the enemy at the expense of other variables with greater strategic relevance. Over time, an institution's norms will generate cognitive biases in its members, which in turn will further reinforce existing norms.

Design thinking is a paradoxical concept: It is prevalent and ambiguous at the same time. Christopher Paparone from the National Defense University sums up the ubiquitous nature of the concept with a rhetorical question: "Who doesn't do design?"<sup>6</sup> According to Paparone, "If you're applying meaning to situations, you're designing."<sup>7</sup> The problem is that design thinking is difficult to define and

“comes in many flavors, tribes, and forms,” as Zweibelson writes.<sup>8</sup> Harold Nelson, former professor at Carnegie Mellon University, calls design thinking “a mystery,” despite everyone being “totally immersed in it” in their lives.<sup>9</sup> This situation creates a temptation to simplify and standardize the application of design thinking to maximize the number of people who understand it; however, simplification and standardization promote conformity rather than the divergent thinking required for innovation. For this reason, Zweibelson advises against a “cookie-cutter design approach” and cautions that “no innovation occurs in standardization.”<sup>10</sup>

Design thinking is an interdisciplinary field with separate civilian and military movements. It emerged in the 1950s as a tool for civilians to use for industrial purposes.<sup>11</sup> Today, many different methodologies collectively address a wide spectrum of issues. The first attempt to formally apply a design methodology for military purposes was in Israel in the mid-1990s, when Brigadier General Shimon Naveh led the development of systemic operational design (SOD).<sup>12</sup> This Israeli approach was a radical deviation from conventional military planning because it applied a mix of philosophy, architectural design, complexity theory, and operational art.<sup>13</sup> Some SOD proponents even argued that learning ballet dancing could offer a unique mental model with which to think creatively about military issues.<sup>14</sup> According to Zweibelson, SOD was “dense with philosophical language and . . . very abstract concepts,” which eventually led to its rejection by the Israel Defense Forces between 2005 and 2006.<sup>15</sup> Zweibelson still considers Naveh “the ‘father’ of the military design movement” for his role in inspiring subsequent measures in other countries.<sup>16</sup>

The U.S. Army’s experimentation with design thinking initially mirrored the Israeli approach, but the final methodologies the Army and joint force adopted in their doctrine ended up being significantly different from those in SOD. In the mid-2000s, the U.S. Army’s School of Advanced Military Studies began working with Naveh, resulting in

an elective course in SOD by 2006 and its incorporation in the core curriculum in 2008.<sup>17</sup> This initiative started as an attempt to help Army officers generate novel ideas by using theories and tools unencumbered by military planning doctrine. Starting in 2010, however, the Army began simplifying its design methodology, largely abandoning the original SOD-like approach.<sup>18</sup> Furthermore, this new simplified approach incorporated concepts that have long been associated with linear military planning processes, such as decisive points, centers of gravity, and lines of operations. The Army and joint force wrote their current design methodologies for a wider audience by using familiar military terms, including some first referenced a few centuries ago by theorists Carl von Clausewitz and Antoine-Henri Jomini.

Design thinking in a military context involves examining complex issues at an abstract level before engaging in the detailed task of developing executable plans. The design methodologies in Army and joint doctrine are similar; both emphasize the importance of establishing a conceptual foundation that enables the more practical aspects of planning. This foundation will be important, for example, when a joint task force (JTF) receives vague policy guidance and faces ambiguous circumstances as it prepares for combat operations. The JTF may need to undertake careful framing and conceptual thinking about the fundamental nature of its mission. The detailed task of synchronizing forces on the battlefield is relatively straightforward, but design of the overall campaign or operation represents the real creative challenge. After framing the major issues and developing a broad operational approach, JTF leaders can begin translating the abstract concepts produced during design sessions into a comprehensive plan. Plans with a strong conceptual foundation prevent situations in which well-executed operations end up supporting the wrong objectives.

DOD intelligence organizations also apply frameworks and techniques consistent with design principles. The Defense Intelligence Agency (DIA) uses a process called analytic design to help

its workforce understand the broader framework within which all-source analysis occurs. This framework “connects the diverse, discrete tasks of analysis into a coherent pathway that encourages focused thinking about the nature of the intelligence problem,” according to DIA guidance.<sup>19</sup> It helps analysts appropriately scope and organize their work, while encouraging them to solicit diverse viewpoints from stakeholders inside and outside of government. Intelligence organizations also use design principles in a narrower context through structured techniques that facilitate the execution of specific aspects of analysis. Although not typically associated with design thinking, these techniques mitigate cognitive limitations and enhance one’s ability to think expansively about issues in a manner that may not be readily intuitive. Thus, design thinking in an intelligence context is both the larger system of activities within which analysis occurs and the specific techniques that aid in the execution of analysis.

Existing DOD design approaches are useful to an extent, but they do not go far enough in helping people overcome mental limitations caused by cognitive biases and institutional norms. Cognitive biases are so powerful that they remain “compelling even when one is fully aware” of their nature, according to Heuer.<sup>20</sup> Furthermore, DOD enforces norms through a rigid and hierarchical system, making divergent thinking difficult. Scholars use terms such as *disruptive innovation* and *destructive creativity* to emphasize the extent to which people must challenge the status quo before producing truly novel ideas.<sup>21</sup> Therefore, the military’s design methodologies are appropriate in their intent but fail to dislodge existing mental models and escape institutional norms. They rely too heavily on conventional military concepts with historical roots in linear planning processes. Additionally, DIA’s design process is merely a generic action plan for a specific community of strategic-level analysts. Integration of defense all-source analysis requires an ambitious design framework at a scale that leverages the perspectives of communities across an enterprise.



Airman from 118<sup>th</sup> Intelligence, Surveillance, and Reconnaissance Group, Tennessee Air National Guard, analyzes imagery from commercial satellites and open-source Web sites to determine extent and location of damage caused by Middle Tennessee tornados, March 4, 2020, Berry Field Air National Guard Base, Nashville, Tennessee (U.S. Air National Guard/Anthony Agosti)

### The Need for Vertical Integration of Defense All-Source Analysis

There is a vertical dimension to the challenge of integrating all-source analysis in DOD due to the intricacies involved in simultaneously supporting decisionmakers at the tactical, operational, and strategic levels. As an organization involved in both policymaking and warfighting, DOD maintains a vast intelligence enterprise in support of its civilian officials and military commanders. At each echelon, analysts derive their understanding of complex issues from relatively narrow vantage points. For example, some DIA analysts may possess expertise on the political-military affairs of specific adversaries and primarily focus on satisfying requirements from Pentagon-based policymakers. Meanwhile, analysts in an Army Corps G2 deployed overseas may assess

the same adversaries but concentrate only on those issues with operational implications for ground commanders. Most analysts will lack the wide-ranging view necessary to comprehensively understand national security issues in all their dimensions. The key to achieving a more holistic grasp of these issues is to combine the perspectives of stakeholders at every level.

To blend these perspectives, leaders must first understand all-source analysis at different levels. Strategic-level DOD analysts belong to the Defense Intelligence All-Source Analysis Enterprise (DIAAE), which consists of DIA, Service intelligence centers, and combatant command (CCMD) Joint Intelligence Operations Centers.<sup>22</sup> Elements of the DIAAE, namely DIA and the Service intelligence centers, represent the DOD analytic component of the national IC. The military Services also have intelligence personnel

who predominantly operate below the CCMD level and outside the DIAAE. They are funded and managed separately under the Military Intelligence Program, which is overseen by the Under Secretary of Defense for Intelligence. Thus, the Defense Intelligence Enterprise includes all-source analytic organizations that have a strategic-level focus as well as those that are primarily designed to support tactical and operational commanders.

Leveraging the collective wisdom of an entire enterprise is a creativity challenge that design thinking is well suited to address. Despite a common affiliation with a Cabinet-level department, defense all-source analysts belong to a diverse array of smaller organizations that have unique cultures and missions. This diversity affords an opportunity to harness the viewpoints of a workforce with a wide range of professional backgrounds, such as engineers, microbiologists, regional

experts, and military Servicemembers, among many others. The pool of valuable perspectives is even greater when factoring in the varying degrees of abstract thinking needed at different echelons. The mindset that analysts use in supporting the practical requirements of tactical commanders will be considerably different from the mindset necessary to support national policymakers. At any given time, there will be analysts throughout the tactical, operational, and strategic levels viewing the same

issue through their own mental filters. The enterprise-level design challenge is in facilitating informed interactions that merge existing mental models in new ways to generate novel ideas.

These interactions must occur across all boundaries, but the emphasis, at least initially, should be on vertical integration, as it represents the most significant deficiency. Many DOD analysts are unfamiliar with the role their counterparts play at different echelons, hindering the vertical fusion of assessments required

to holistically understand national security issues. That said, leaders have already taken steps, however imperfectly, throughout the past few decades to enhance horizontal integration. The Director of National Intelligence employs various leaders—such as national intelligence managers and national intelligence officers—to coordinate across interagency lines and conduct outreach with nongovernmental experts. Defense intelligence officers and senior defense intelligence analysts perform coordinating roles



Human intelligence collector with Bravo Company, 341<sup>st</sup> Military Intelligence Battalion, listens to role player during field training exercise Panther Strike Lite, on February 7, 2020, at Joint Base Lewis-McChord, Washington (U.S. National Guard/Joseph Siemandel)

similar to those of national intelligence managers and national intelligence officers, respectively, when it comes to strategic-level issues within DOD. Additionally, the increasing emphasis on joint operations since the Goldwater-Nichols Department of Defense Reorganization Act of 1986 has created a generation of military leaders, including intelligence personnel, who routinely work with other Services. The problem is that there are no corresponding efforts to coordinate intelligence activities occurring simultaneously at the tactical, operational, and strategic levels.

Recurring disagreements between military commands and national intelligence organizations attest to vertical integration problems. Intelligence staffs in military headquarters tend to produce more optimistic assessments than do national agencies. For example, during the Vietnam War, the U.S. military intelligence staff in the field estimated total enemy strength in 1966–1967 as 277,000 to 300,000 regular and irregular fighters.<sup>23</sup> DIA argued the total number was approximately 500,000, while the Central Intelligence Agency (CIA) estimated 600,000 enemy troops.<sup>24</sup> Two decades later, President George H.W. Bush learned of significant discrepancies in battle damage assessments right before the U.S.-led coalition initiated ground operations during Operation *Desert Storm*. As of February 23, 1991, U.S. Central Command (USCENTCOM) was reporting 39 percent of Iraqi tanks destroyed, much higher than the 16 percent and 12 percent estimates provided by DIA and CIA, respectively.<sup>25</sup> During both conflicts, these analytic incongruities were controversial at the time, requiring intervention by national-level leaders. The biggest divergence occurred between analysts assigned to military commands and their counterparts in national agencies in Washington, DC.

Military and national intelligence organizations continued giving conflicting assessments in the 21<sup>st</sup> century. The commander of U.S. Forces–Afghanistan disseminated a written assessment in 2011 that was “significantly more positive and upbeat” than were the views

of the IC, according to the National Intelligence Council chairman at the time.<sup>26</sup> Three years later, in 2014, General Martin Dempsey, USA (Ret.), then–Chairman of the Joint Chiefs of Staff, learned of substantial differences between USCENTCOM and the IC regarding their outlooks on Afghanistan.<sup>27</sup> This disparity occurred as the United States was conducting a review of its Afghanistan mission in anticipation of troop withdrawal decisions by the President. Disagreements also arose between tactical and operational units below the CCMD level. In his memoirs, General James Mattis, USMC (Ret.), describes as “odd” the different ways the 82<sup>nd</sup> Airborne Division, V Corps, and USCENTCOM were characterizing the insurgency in Iraq when he was a division commander in late 2003.<sup>28</sup> Whenever contradictory assessments exist across various echelons, it is imperative to understand why all-source analysts interpret the same circumstances differently.

Analytic disagreements are healthy in many cases, but they are problematic without transparency and mutual understanding. The IC embraces a concept called competitive analysis, which induces continuous improvement by encouraging dissenting viewpoints.<sup>29</sup> However, this concept is primarily focused on horizontal integration among national-level organizations that consistently acknowledge and debate competing analytic positions. The cases cited earlier did not involve meaningful collaboration across vertical boundaries between analysts at different echelons. During the 1991 Gulf War, for example, it took White House–level intervention to adjudicate the dispute involving USCENTCOM, DIA, and CIA.<sup>30</sup> In 2014, General Dempsey directed an examination of contradictory USCENTCOM and IC assessments on Afghanistan prior to a National Security Council meeting.<sup>31</sup> These circumstances suggest there are vertical integration problems rooted in a lack of mutual awareness between national organizations and military intelligence staffs at the tactical and operational levels. Some former IC leaders even believe that policymakers should receive military intelligence

assessments separately from those produced at the national level, rather than integrating the two perspectives.<sup>32</sup>

## Recommendations

All-source analysts at every level need comprehensive education on human cognition to fully appreciate their mental limitations. Most strategic-level analysts learn about cognitive biases when they receive instruction on analytic tradecraft, such as in DIA’s Professional Analyst Career Education course. Similar education must occur at all levels within the Defense Intelligence Enterprise, not only in strategic-level organizations. Furthermore, strategic-level organizations must expand on existing curriculums by providing basic instruction on such topics as philosophy, cognitive psychology, and cultural studies. This interdisciplinary approach is consistent with the underlying purpose of design thinking: helping people to understand and leverage the wide spectrum of mental models underpinning how they think. Aaron Jackson from the Australian Defence Department cautions against “shallow or simplistic design methodologies,” as they are insufficient in developing the intellectual self-awareness required to overcome deeply entrenched barriers to creativity.<sup>33</sup> He argues for “more philosophically grounded methodologies” that enable “genuine reframing” and the “questioning of core beliefs.”<sup>34</sup> Rigorous education that includes such approaches is necessary for a profession in which the mere act of thinking is considered a core competency.

This education should be supplemented with cross-training in different analytic techniques used throughout the Defense Intelligence Enterprise. Civilian analysts working in national organizations may already be familiar with the techniques used by their counterparts operating at the same level. National IC organizations routinely collaborate and debate competing analytic positions on various issues; however, this same level of familiarity does not exist in all parts of the enterprise. For example, the DOD inspector general concluded in 2018 that

military analysts assigned to CCMDs “lacked formal training” on analytic tradecraft and were “less proficient . . . than their civilian counterparts” in this regard.<sup>35</sup> The military Services must ensure their intelligence analysts are able to think about complex issues using tools other than Joint Intelligence Preparation of the Environment (JIPOE) and Intelligence Preparation of the Battlefield (IPB). Conversely, many civilians often deploy to augment JTF intelligence staffs without appreciating JIPOE and the other doctrinal frameworks essential to military operations. For meaningful interactions throughout all levels of the Defense Intelligence Enterprise, leaders should ensure a sufficient level of cross-training.

Leaders should leverage this interdisciplinary approach to instruction to build a DOD all-source analytic community capable of exhibiting empathy for colleagues in other organizational boundaries and vertical echelons. This tactic would help analysts develop self-awareness, intellectual humility, and the patience to interact with colleagues who think using fundamentally different mental paradigms. Empathy is a key component in many civilian design methodologies and equally relevant in an intelligence context. The empathy challenge lies in understanding the opportunities inherent in the vast differences between analysts throughout the entirety of the Defense Intelligence Enterprise. If properly managed, disagreements and tensions within the enterprise have tremendous creative potential. In his book, General Dempsey describes the importance of turning disagreements between intelligence analysts into “creative friction.”<sup>36</sup>

DIAAE analysts can generate this type of creativity by integrating the perspectives of their counterparts at the tactical and operational levels when framing high-priority issues for senior decisionmakers. As the backbone of the DIAAE, civilian analysts are leaders in supporting the development of national policies and strategies. It is important that they interact with military intelligence staff in units responsible for implementing these policies and strategies. Service intelligence centers already have

strong relationships with warfighting units of common Service affiliations, but many civilians across DOD still lack familiarity with intelligence activities below the CCMD level. As a result, strategic assessments do not always consider the different mindsets that exist throughout DOD. In 2002, as USCENTCOM was preparing for Operation *Iraqi Freedom*, the Deputy Secretary of Defense at the time asked military planners, “We have a brigade on the ground. Why can’t we go now?”<sup>37</sup> The obvious unfeasibility of this suggestion illustrates the importance of presenting policymakers with strategic assessments, whether intelligence or otherwise, that are informed by tactical realities.

The DIAAE must also empathize on a deeper level with warfighters—especially military intelligence personnel at lower echelons—who rely on strategic analysis. A production category called foundational military intelligence is one of the primary ways the DIAAE supports warfighters. Lieutenant General Robert Ashley, USA (Ret.), former DIA director, called it the “core mission” of the agency in January 2020.<sup>38</sup> Service intelligence centers are also significant producers of what many would label as *foundational military intelligence*. The phrase itself is loosely defined, but DIA leaders commonly associate it with database entries on foreign units, equipment, facilities, and installations.<sup>39</sup> It also includes standardized products containing profiles of foreign military leaders, overviews of foreign defense forces, and assessments of adversary capabilities. While important, foundational military intelligence lacks empathy; it is narrow in scope and assumes that standardized products can satisfy the diverse needs of all warfighters. DIAAE leaders currently view foundational military intelligence as merely reference products rather than comprehensive knowledge tailored for commanders and their intelligence staffs in uniform.

Strategic analysts should tailor complex issues for military units at the tactical and operational levels. Civilians in particular could introduce divergent viewpoints within the joint force based on their interactions with policymakers, interagency colleagues, academic scholars,

and foreign partners. Commanders and their intelligence staffs need the help of civilian experts who have wider perspectives about the complex issues facing units in the field. General Michael Hayden, USAF (Ret.), contends that the role of national intelligence is setting “the right- and left-hand boundaries for any rational policy discussion.”<sup>40</sup> This same type of intelligence could be repurposed to frame ambiguous issues that military units at lower echelons may not fully comprehend without assistance. This repurposing would require familiarity with the military’s existing intelligence architecture and operational frameworks. The joint force already has tens of thousands of intelligence personnel in uniform who are organic members of warfighting units. The key for civilian analysts throughout the DIAAE is to more consistently contribute strategic insights during operational and even tactical forums.

Military intelligence staffs below the CCMD level must do their part by being proactive in soliciting these insights—to counter the joint force’s tendency to view topics through a narrow enemy-centric perspective. This perspective is the result of the military’s self-identity as a force whose primary mission is to exercise lethality on the battlefield. In the U.S. Army, IPB is the primary analytic process employed by tactical and operational formations; JIPOE is the equivalent joint process used by JTFs and CCMDs. Both IPB and JIPOE are structured processes that culminate in multiple enemy courses of action. In effect, they treat assessments of nonmilitary factors as subordinate to and merely tools in understanding the physical actions of an enemy force. Although useful in some circumstances, IPB and JIPOE are inadequate for addressing complex issues in a holistic manner. Joint and Service intelligence staffs at lower echelons could benefit from exposure to divergent thinking when assessing difficult topics beyond an enemy’s physical activities.

The intelligence staffs in CCMDs, JTFs, and Service component commands should establish forums for analysts at all levels to converge and collaborate based on common interests. These



Intelligence analyst assigned to D Company, 326<sup>th</sup> Brigade Engineer Battalion, 1<sup>st</sup> Brigade Combat Team, 101<sup>st</sup> Airborne Division (Air Assault), plots named areas of interest on map, April 14, 2021, during MITS II at Johnson Field, Fort Campbell, Kentucky (U.S. Army/Vonnie Wright)

headquarters are ideally positioned in the DOD hierarchy to integrate multiple perspectives spanning the entirety of the Defense Intelligence Enterprise. Collaborative forums already exist, but many of them do not go far enough in affording analysts the occasion to interact with colleagues more than one echelon removed from their organizations. Many civilian analysts are unfamiliar with the vast military intelligence apparatus below the CCMD level. Furthermore, they may not be familiar enough with operational frameworks to truly empathize with commanders throughout DOD. Conversely, many analysts in uniform are largely unaware of intelligence capabilities at higher echelons and may lack the broader perspective required to assess issues beyond their local operational environments. Shared understanding of the DOD all-source analytic community will enable deeper interactions across all

levels. As Heuer argues, “New ideas result from the association of old elements in new combinations.”<sup>41</sup>

All-source analysts should leverage what their counterparts at different echelons are already doing and contribute insights in ways that complement others’ work. At the national level, DIA and Service intelligence centers deliver analytic continuity for DOD by maintaining a large civilian workforce with deep expertise on every major issue. For this reason, these national organizations are predominantly responsible for the database records and products composing foundational military intelligence. CCMDs, JTFs, and Service components operationalize and expand on existing foundational military intelligence products. At lower echelons, warfighting units employ organic intelligence capabilities to dynamically track and assess foreign forces, relying on work conducted at

national and theater levels as starting points. During a March 2020 presentation, Lieutenant General Scott Berrier, the Army G2 at the time, described the job of his Service’s tactical and operational intelligence elements as “turning gray icons red.”<sup>42</sup> Berrier was referring to gray icons as suspected enemy locations and red icons as confirmed enemy units. At any given echelon, all-source analytic organizations have their own comparative advantages that must be understood for integration to occur.

## Conclusion

Cognitive biases and institutional norms exert such powerful influences that they routinely limit the ability of all-source analysts to think imaginatively about national security issues. People often frame problems so narrowly that they end up predetermining the range of desirable solutions avail-





Hawaii Air National Guardsman and his Tentara Nasional Indonesia counterparts review intelligence portion of exercise scenario for operational design workshop portion of exercise Gema Bhakti, September 17, 2021, Jakarta, Indonesia (U.S. Air National Guard/Andrew Jackson)

able for decisionmakers. Thus, military intelligence staffs will fail in alerting commanders of larger situations if they constantly describe problems based only on the enemy's physical actions. Civilian analysts are equally vulnerable to narrow framing based on each person's dominant mental models and resultant biases. Subconscious biases commonly direct people toward certain solutions when they seek to understand a problem. For example, analysts will form vivid memories of their involvement in past operations that were successful in a foreign country. They may develop a tendency to describe problems in other countries using familiar terms, which suggests they are drawing parallels between the new issue and previous experiences. Many analysts will not realize they are subconsciously replicating past efforts—instead of objectively examining each situation—until they understand how mental models work.

The design framework proposed in this article could generate tremendous creativity without requiring changes to legislation, DOD policies, or organizational authorities. It provides a roadmap for leaders to introduce divergent perspectives in organizations that otherwise would be relatively insular. Analysts could coalesce around existing processes and forums, allowing the Defense Intelligence Enterprise to maintain continuity and momentum in meeting its current obligations. An emphasis on interdisciplinary education and cross-training would help analysts become aware of the cognitive factors that cause people to reach different conclusions about the same set of data. Leaders should not let anecdotes and local successes convince them that effective collaboration, particularly across vertical echelons, is already occurring. Integration of all-source analysis must be consistent and widespread throughout the entirety of the Defense Intelligence Enterprise. The all-source analytic

profession is easily the most diverse in DOD and consists of members with a wide range of professional backgrounds. There is enormous creative potential in ensuring that members of this diverse profession interact across vertical and horizontal boundaries. JFQ

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## Notes

<sup>1</sup> Jeanne Liedtka, "Why Design Thinking Works," *Harvard Business Review*, September–October 2018, available at <<https://hbr.org/2018/09/why-design-thinking-works>>.

<sup>2</sup> Marcus B. Griffin, "Operational and Strategic Level Design Integration and Innovation in Complex Military Contexts," video, 18:03 and 34:45, Joint Special Operations University, August 16, 2018, available at <<https://www.youtube.com/watch?v=KEQfj5eFudc>>.

<sup>3</sup> Ben Zweibelson, "The Multidisciplinary Design Movement: A Frame for Realizing Industry, Security, and Academia Interplay," *Small Wars Journal*, January 10, 2019, available at <<https://smallwarsjournal.com/jrnl/art/multidisciplinary-design-movement>>.

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<sup>4</sup> Richards J. Heuer, Jr., *Psychology of Intelligence Analysis* (Langley, VA: Central Intelligence Agency, 1999), 3, available at <<https://www.cia.gov/resources/csi/books-monographs/psychology-of-intelligence-analysis-2/>>.

<sup>5</sup> *Ibid.*, 111.

<sup>6</sup> Christopher Paparone, “International Military Design Panel Part 1: Design Theory, Practice and Leadership,” video, 33:14, Joint Special Operations University, Innovation Methodologies Defence Challenges Conference, Ottawa, Canada, January–February 2018, available at <[https://www.youtube.com/watch?v=NN8RtI\\_b39E](https://www.youtube.com/watch?v=NN8RtI_b39E)>.

<sup>7</sup> *Ibid.*, 33:16.

<sup>8</sup> Ben Zweibelson, “The Military Design Movement: Drifting Toward Embracing Uncertainty and Transformation in Complex Environments,” *Over the Horizon*, January 20, 2017, available at <<https://othjournal.com/2017/01/20/the-military-design-movement-drifting-towards-embracing-uncertainty-and-transformation-in-complex-environments/>>.

<sup>9</sup> Harold Nelson, “Design in the 21<sup>st</sup> Century: Intentional Change in an Unpredictable World,” video, 4:13, University of Idaho, November 5, 2018, available at <<https://www.youtube.com/watch?v=mW7p3nixxok>>.

<sup>10</sup> Ben Zweibelson, “Special Operations and Design Thinking: Through the Looking Glass of Organizational Knowledge Production,” *Special Operations Journal* 2, no. 1 (2016), 29, available at <<https://doi.org/10.1080/23296151.2016.1151753>>.

<sup>11</sup> Aaron P. Jackson, *Design Thinking in Commerce and War: Contrasting Civilian and Military Innovation Methodologies* (Maxwell Air Force Base, AL: Air University Press, December 2020), 13, 20, available at <[https://www.airuniversity.af.edu/portals/10/aupress/papers/lp\\_0007\\_jackson\\_design\\_thinking\\_in\\_commerce\\_and\\_war.pdf](https://www.airuniversity.af.edu/portals/10/aupress/papers/lp_0007_jackson_design_thinking_in_commerce_and_war.pdf)>.

<sup>12</sup> *Ibid.*, 30–31.

<sup>13</sup> Ben Zweibelson, “An Application of Theory: Second Generation Military Design on the Horizon,” *Small Wars Journal*, February 19, 2017, available at <<https://smallwarsjournal.com/jrnl/art/an-application-of-theory-second-generation-military-design-on-the-horizon>>.

<sup>14</sup> Mathieu Primeau, “Design Is Guerrilla Warfare,” video, 14:47, Joint Special Operations University, February 21, 2020, available at <<https://www.youtube.com/watch?v=C8YfQFwzI0>>.

<sup>15</sup> Zweibelson, “An Application of Theory”; Ben Zweibelson, “Changing Change While It Changes: The Rise of Disruptive Military Thinking (Part 2 of 3),” interview by John Sarubbi, *Over the Horizon*, December 5, 2018, available at <<https://othjournal.com/2018/12/05/changing-change-while-it-changes-the-rise-of-disruptive-military-thinking-part-2-of-3/>>.

<sup>16</sup> Zweibelson, “Changing Change While It Changes.”

<sup>17</sup> Jackson, *Design Thinking in Commerce and War*, 32.

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