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Everett S. P. Spain

J. D. Mohundro

Bernard B. Banks

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Intellectual Capital: A Case for Cultural Change

Everett S.P. Spain, J.D. Mohundro, and Bernard B. Banks

ABSTRACT: Statistical analysis indicates recent US Army promotion and command boards may actually penalize officers for their conceptual ability, which raises concerns over our transition to the Army of the future. If Army leaders emphasize the need for intellectual human capital (IHC), understand the intellectual capital system, and stress critical thinking while continuing to value the other domains of officership, the Army can capture the human capital it requires for Force 2025 and Beyond.

Selecting officers for early promotion and determining which ones will have opportunities for battalion command are among the most important decisions made by the US Army. Yet, statistical analysis indicates recent US Army promotion and command boards may actually penalize otherwise equivalent officers for conceptual ability, which should warrant concern with regard to how we transition to the Army of the future. If Army leaders at all levels emphasize the need for intellectual human capital (IHC), understand the intellectual capital system, and actively emphasize and role-model critical thinking while continuing to value the other major domains of officership, the Army can reverse this trend and capture the human capital it requires to meet the needs of Force 2025 and Beyond.

The primary intellectual engines of the US Army—such as Training and Doctrine Command (TRADOC) and the US Army War College—have rightly predicted our future combined and joint operating environments will be more complex than ever before in history.¹ As such, the *2014 Army Operating Concept* implores the total Army to broaden its approach to learning.² Considering this context within the aforementioned promotion board trends, such an approach may require a fundamental shift in how our Army selects and develops our future leaders.

The future force will require leaders who possess the enhanced conceptual tools necessary to win in a complex world. The authors recommend the Army critically examine and potentially change the manner in which it accesses, develops, selects, and sets the culture for future leaders. Doing so is especially important in order to foster officers' conceptual abilities. We offer our recommendations with humility,

¹ Army Capabilities Integration Center (ARCIC), "Force 2025 and Beyond Directorate," June 1, 2014, www.arcic.army.mil.

² US Department of the Army, *The US Army Operating Concept: Win in a Complex World*, TRADOC Pamphlet 525-3-1 (Washington, DC: US Department of the Army, October 31, 2014)

as grateful beneficiaries of the Army's current officer-talent management system. We acknowledge any criticism of the current system may also be a corresponding criticism of ourselves.

Although all "Army team" members—commissioned officers, warrant officers, non-commissioned officers, junior enlisted Soldiers, and Department of the Army civilians—are critical to the success of the nation, we will focus our recommendations on active-duty commissioned officers, though we encourage follow-on analyses of each of the aforementioned populations. Also, by no means does this paper wish to minimize the importance of the many characteristics needed in Army leaders, such as job motivation, diligence, emotional intelligence, character, grit, and physicality. All of these factors, and others, contribute significantly to officership and must be developed.³ However, we believe the Army will also need to raise the profile of its intellectual human capital and the culture that empowers it in order to address the complexity inherent in *Force 2025 and Beyond*.⁴

Why is Intellectual Human Capital Important?

The US military wants and needs the best leaders possible. Human optimization requires the military to define what its leaders must accomplish in varied environments. Foremost, the military needs leaders of character who can honorably navigate complex moral-ethical situations. They must successfully lead diverse groups and solve important problems. Such activities require divergent thinking and creative problem solving; much like mission command requires agile and adaptive Army officers. However, recent force modernization studies routinely point to technological advances. Even those touting human performance optimization frequently list improvements in ability rather than how to optimize the intellectual human capital already available.⁵ Indeed, critical thinking will be among the most crucial tools for leaders in the future joint force.⁶

Intellectual human capital becomes more central to winning as security environments become increasingly difficult, especially as officers rise in rank and the complexity of their tasks increase. As technology and industry dominated the wars of the 20th century, intellectual human capital will likely decide many of the world's future security issues. Army officers are America's "boots on the ground" senior leaders in the middle of rapidly changing environments. Army officers must have the intellectual agility not only to survive, but to thrive in such environments. The aforementioned statement is articulated more precisely in the 2013 *Army Leader Development Strategy*.⁷

Real world complexities are moving Army strategists towards employment of design thinking, which is defined as "a methodology

3 Daniel Goleman, "Leadership That Gets Results," *Harvard Business Review* (March-April 2000): 78-93.

4 US Department of the Army, *Force 2025 and Beyond* (Washington, DC: US Army Training and Doctrine Command, October 2014).

5 US Army Combined Arms Center, *Human Dimension White Paper: A Framework for Optimizing Human Performance* (Fort Leavenworth: US Army Combined Arms Center, 2014).

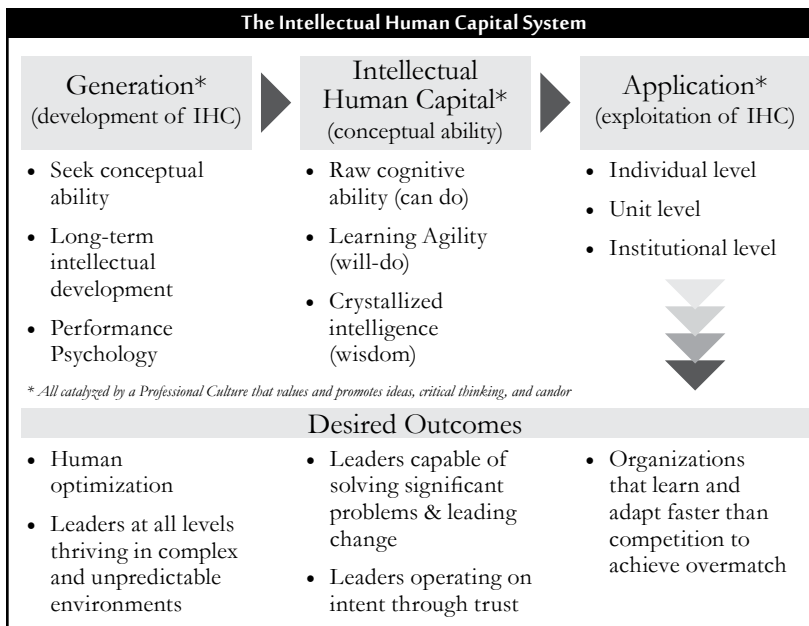
6 US Department of Defense, *Capstone Concept for Joint Operations* (Washington, DC: US Department of Defense, US Joint Chiefs of Staff, 2005).

7 US Department of the Army, *ALDS: Army Leader Development Strategy* (Washington, DC: US Department of the Army, US Army Training and Doctrine Command, 2013), 5.

for applying critical and creative thinking to understand, visualize, and describe problems and approaches to solving them.”⁸ TRADOC, the Army’s proponent for *Force 2025 and Beyond*, lists “develop agile and adaptive leaders” as one of its major warfighting challenges.⁹ This need is also one of the Army Chief of Staff’s top five strategic priorities. To wit, TRADOC has reached out to leading researchers in the field of learning engineering to find ways to improve officer cognitive performance. Therefore, it is imperative the Army identify those officers possessing the heightened conceptual ability indicative of superior potential for continued expansion of critical and creative reasoning competency.

As the largest single institution that produces Army officers, West Point has nested these requirements into its Strategic Plan 2014-2020, which includes the priority of developing leaders who “thrive in tomorrow’s complex security environments.” The plan also recognizes an “effective Army response to this challenge will require a greater degree of intellectual capability derivative of critical thinkers and creative problem solvers,” who, “... have the military, intellectual, and physical talent to excel in combat.”

Defining Intellectual Human Capital



Capital is any resource (economic, infrastructure, political, social, or intellectual) with the potential to create value. Although intellectual capital is embedded across individual (soldier/leader), organizational (unit), and professional (Army) levels, intellectual human capital resides only inside people. Specifically, an organization’s intellectual human capital is the sum of conceptual assets of its people and represents the

⁸ School of Advanced Military Studies, *Art of Design*, Student Text, Version 2.0 (Fort Leavenworth: US Army Combined Arms Center, School of Advanced Military Studies), http://usacac.army.mil/cac2/CGSC/events/sams/ArtofDesign_v2.pdf.

⁹ US Department of the Army, *Force 2025 and Beyond*, vii.

organization's potential to create value. Subcomponents include cognitive ability, learning agility (ability to learn), and crystallized intelligence (wisdom). Although we will examine each of these subcomponents in detail, it is important first to conceptualize the complete intellectual human capital system.

An organization that wishes to maximize its intellectual human capital must understand that it, like other types of capital, operates as part of a system with different impact points and levers. This system includes: generation (production and development), the intellectual human capital itself, and application (exploitation). Each of these three major components is influenced by a professional culture that does, or does not, value intellectual human capital. When such a system is optimized, it contributes significantly towards achieving its organization's desired performance outcomes. For the Army, optimization means leaders and soldiers mastering operations in dynamic environments with honor.

To generate human capital, organizations should consider recruiting and developing cognitive ability. Cognitive ability is described as "the ability to understand abstract concepts and ideas, to reason accurately, and to solve problems."¹⁰ Synonyms of cognitive ability include analytical ability, intellectual horsepower, IQ, Spearman's "g," and brainpower. Cognitive ability enables intellectual agility (i.e., the ability to understand and apply many conceptual things simultaneously) and intellectual adaptability (i.e., the ability to stay ahead of the rate of situational and environmental changes). Hundreds of studies have demonstrated that cognitive ability is a strong predictor of job performance.¹¹ One meta-analysis of over 1,000 studies found cognitive ability predicted both measurable output (objective performance) and an employee's ratings (subjective performance). A recent organizational behavior overview concluded "there is now no question that cognitive ability" is the strongest predictor of job performance, including being more than twice as predictive as the most predictive personality trait.¹²

Cognitive ability may be even more important when predicting leader performance. The cognitive ability-to-job performance link was even stronger in high-complexity jobs, as employees age, and when serving in managerial roles.¹³ Consequently, it follows that cognitive ability should be even more predictive for positional leaders. Supporting research demonstrates that leader behaviors such as patience, prudent risk taking, emotional intelligence, and strategic decision making ability are similarly predicted by cognitive ability.¹⁴ Additionally, leadership

10 Jone L. Pearce, *Organizational Behavior: Real Research for Real Managers* (Irvine: Melvin & Leigh, 2009), 75-76.

11 John E. Hunter, "Cognitive Ability, Cognitive Aptitude, Job Knowledge, and Job Performance," *Journal of Vocational Behavior* 29, no. 3 (December 1986): 340-362; John E. Hunter and Frank L. Schmidt, "Intelligence and Job Performance: Economic and Social Implications," *Psychology, Public Policy, and Law* 2, no. 3/4 (1996): 447-472; and Malcolm James Ree and James A. Earles, "Intelligence is the Best Predictor of Job Performance," *Current Directions in Psychological Science* 1, no. 3 (June 1992): 86-89.

12 Hunter and Schmidt, "Intelligence and Job Performance: Economic and Social Implications."

13 Ree and Earles, "Intelligence is the Best Predictor of Job Performance."

14 Stephen V. Burks, Jeffrey P. Carpenter, Lorenz Goette, Aldo Rustichini, and Avinash K. Dixit, "Cognitive Skills Affect Economic Preferences, Strategic Behavior, and Job Attachment," *Proceedings of the National Academy of Sciences of the United States of America* 106, no. 19 (May 2009): 7745-7750.

researcher Stephen Zaccaro has illuminated cognitive complexity as one of, if not the most, important variable in successful executive-level leadership.¹⁵

Research has demonstrated that aptitude tests can proxy cognitive ability, including sub-components.¹⁶ Since aptitude tests such as the Scholastic Aptitude Test (SAT) also measure verbal and quantitative ability, scholars have shown SAT test scores, in the study of large groups, are highly correlated with individuals' cognitive abilities.¹⁷ Subsequent research demonstrated that this correlation also holds for the American College Test (ACT).¹⁸ Within the officer production pool, a recent study estimates that ACT or SAT scores strongly predict ROTC scholarship recipients' academic success leading to commissioning.¹⁹ Acknowledging the objections to the applicability of standardized tests for large groups, the authors are not suggesting it is the perfect tool. This essay merely posits what research has shown, that ACT and SAT scores are useful proxies when measuring trends of workers' conceptual potential, even though these measures, like most predictors, have some reliability and validity limitations.

Undergraduate course grades (GPA) are also correlated with cognitive ability, but academic GPAs have the challenge of also being conflated with motivation. In other words, it is impossible to tell which portion of high academic GPA achievement is due to motivation (such as studying hard, pursuing extra credit assignments, and overall propensity to apply themselves towards conceptual tasks) and what portion is due to cognitive ability. Therefore, aptitude tests are a commonly accepted primary measure of raw cognitive ability, while academic GPAs are more nuanced and may be better interpreted as complementary markers of conceptual ability.

Since most research has shown cognitive ability is only slightly malleable in adults and is very portable (valuable to other professions if an officer resigns), the most direct method to increase the amount of cognitive ability in an organization, especially one reliant upon leaders (such as the US Army), is to recruit people with high cognitive ability into the supervisory labor pool. We argue organizations have a critical need for conceptual ability—the function of its leaders' raw cognitive ability and propensity to behave in ways that enable their cognitive ability (i.e. Learning Agility)—since they exist to produce outcomes that would not naturally occur otherwise. There are multiple indicators of someone's learning agility and they include: proclivity to engage in critical thinking behaviors, propensity for seeking new knowledge and challenging

15 Stephen J. Zaccaro, *The Nature of Executive Leadership: A Conceptual and Empirical Analysis of Success* (Washington, DC: American Psychological Association, 2001).

16 Robert Thorndike, *Personnel Selection: Test and Measurement Technique* (Hoboken: Wiley, 1949), 24-50.

17 Meredith C. Frey and Douglas K. Detterman, "Scholastic Assessment or *g*? The Relationship Between the Scholastic Assessment Test and General Cognitive Ability," *Psychological Science* 15, no. 6 (June 2004): 373-378.

18 Katherine A. Koenig, Meredith C. Frey, and Douglas K. Detterman, "ACT and General Cognitive Ability," *Intelligence* 36, no. 2 (March-April 2008): 153-160.

19 J.D. Mohundro and Adrian T. Bogart, "Cadets in Strategic Landpower: Managing the Talent We Need," *Military Review* 94, no. 4 (July-August 2014): 5-11.

experiences and inclination to actively reflect for conceptual or leader growth.²⁰

To be sure, it is not the intent to select for high intelligence at the expense of the whole-person concept. Rather, performance still carries the day. We argue that, when evenly matched, officers' conceptual ability, traits and behaviors should be considered as informative datum to make determination. This performance-first decision framework holds for most current situations, yet loses some validity when considering US Army officers' span of control and responsibilities become larger at the same time the world they operate in grows more and more unpredictable. At some point in this future world, it is likely that leaders' conceptual ability (rooted in character), versus past performance in simpler jobs in simpler times, may actually carry the day.

An organization interested in long-term development and human optimization will also recruit and work to retain members who show strong internal propensities to engage in the aforementioned learning agility behaviors. Professor Warner Burke at Columbia University's Teachers College is currently finalizing a Learning Agility psychometric survey that could help the Army identify junior leaders whose behaviors, versus traits, identify them as lifelong learners and leaders of the future.²¹ Additional research has shown that learning agility may be personality-based, and therefore testable. For example, researchers found that people who score an NT (intuitive-thinking) profile on the Myers-Briggs Type Indicator (MBTI) are more likely engage in learning-agility type behaviors than those who score otherwise.²²

Another potential reason to recruit and develop cognitive ability is inclusiveness. The US military strives to be a diverse organization that provides equal opportunity and access for historically underrepresented groups. Since recent meta-research has shown that people with lower-cognitive ability often have greater prejudice, organizations can promote inclusiveness by recruiting leaders with strong cognitive abilities and develop their leaders to have strong conceptual propensities.²³

Crystallized intelligence, commonly called wisdom, is another important construct related to intellectual human capital. It is the summation of retained and usable frameworks, mental models, knowledge, and ability to communicate that knowledge to others. This type of intelligence can be developed and is the target of most long-term intellectual development programs and performance psychology. Job experiences may also add to crystallized intelligence.²⁴ The development

20 Owen Jacobs and Elliott Jaques, "Military Executive Leadership," In *Measures of Leadership*, by Kenneth Clark and Miriam Clark (Washington, DC: American Psychological Association, 1990), 281-295.

21 Loretta M. Church and Raymond E. Alie, "Relationships Between Managers' Personality Characteristics and their Management Levels and Job Foci," *Akron Business and Economic Review* 17, no. 4 (1986): 29-45.

22 Adam Mitchinson, Nathan Gerard, Kathryn Roloff, and Warner Burke, "Learning Agility: Spanning the Rigor-Relevance Divide," *Industrial and Organizational Psychology* 5, no. 3 (September 2012): 287-290.

23 Kristof Dhont and Gordon Hodson, "Does Lower Cognitive Ability Predict Greater Prejudice?" *Current Directions in Psychological Science* 23, no. 6 (December 2014): 454-459.

24 John Horn, "The Theory of Fluid and Crystallized Intelligence," In *Encyclopedia of Intelligence*, by Robert Sternberg (New York: Macmillan, 1994), 443-451.

of intellectual human capital is inexorably linked to the growth of crystallized intelligence.

The military currently owns some of the most well resourced long-term intellectual development programs, both internally and externally. Internally, each of the services has their respective academy and ROTC partner schools to develop civilians into officers through undergraduate education. The Army's Officer Education System (OES) programs of instruction vary over time based on career field and seniority. The OES programs typically focus on Army-related topics and an Army-centric writing style. Critical thinking is taught at some of the career fields' officer career courses (CCC), at the Command and General Staff College (CGSC), and at the Senior Service Colleges (SSC). These schools all require scholarly writing. However, only the SSC requires officers to research a topic in depth (i.e., masters theses at US Army War College and research papers at SSC fellowships). Anecdotally, many officers cite full-time advanced civil schooling (ACS) as their most significant long-term intellectual development experience. In terms of frequency of ACS participation, the Army leads the way across all the military services. That being the case, we believe all branches of service might benefit from an enhanced effort to maximize ACS opportunities for their officers.

Applying Intellectual Human Capital

As with any resource, the Army's intellectual human capital is only as important as its application. Scholars claim every organization has a "coefficient of efficiency" that measures how effective they are at applying intellectual human capital.²⁵ There are ways in which the Army is both efficiently and inefficiently applying, developing, and grooming its intellectual human capital.

Promotions and Selections

The people organizations select and promote are perhaps the most visible artifacts of their view of intellectual human capital. Do they apply their intellectual human capital to their most appropriate needs, or do they have a mismatch? In the Army, the most appropriate need for intellectual human capital is in its leaders, especially its most senior leaders.²⁶

Given the understanding that conceptual thinking is important for Army officers, recent research may be a warning of a potential systemic bias against cognitive ability in the US Army officer promotion and selection process. Examining 13 years of recent USMA graduates, a talent management study hypothesized that cognitive ability would predict officers' success.²⁷ Yet, the study found the opposite to be true. To wit, it unexpectedly showed officers with one-standard-deviation higher cognitive abilities had 29 percent, 18 percent, and 32 percent lower odds, respectively, of being selected early (BZ) to major, early to lieutenant colonel, and for battalion command than their one-standard-deviation lower cognitive-ability peers. This analysis was controlled

25 Leif Edvinsson and Michael Malone, *Intellectual Capital: Realizing Your Company's True Value by Finding its Hidden Roots* (New York: Harper Collins, 1997).

26 Jacobs and Jaques, "Military Executive Leadership."

27 Everett Spain, "Finding and Keeping Stars: The Leadership Performance and Retention of High Potentials" Doctoral Thesis, Harvard Business School, June 2014.

for gender, ethnicity, year group, recruited athletes, months deployed, commissioning branch, attending the USMA Preparatory School, high school geographic region, and cumulative cadet academic and physical performance scores.

Additionally, this analysis holds for all promotion/selection analyses when conditioned on motivation. Based on a cadet's motivation for military things (i.e., his or her cadet military GPA—made up of 11 force-distributed cadet term or semester job performance ratings over four years), the study found significant evidence that regardless of what motivation/diligence category officers were in (low, medium, or high) there was a lower likelihood the Army would select the officers for early promotion or battalion command the higher their cognitive ability, despite the fact that the promotion and selection boards had no direct information indicating each officer's cognitive ability. It is important to note the same study found that USMA cadets' military GPA (made up of primarily cadets' 11 job grades) was extraordinarily predictive of their later early promotion to major, early promotion to lieutenant colonel, and battalion command.

Even though the senior leaders of the Army are saying the Army needs leaders with intellectual ability, agility, and adaptability at all levels, the Army's promotion and selection boards (perhaps unintentionally) are holding-back the officers who show the most promise and interest in these regards. For example, if two candidates for early promotion or command have the same motivation, ethnicity, gender, length of Army experience, time deployed, physical ability, and branch, and both cannot be selected, the board is more likely to select the officer with the lower conceptual ability.

Four possible explanations might explain the aforementioned phenomenon. The first is purely structural: promotion boards make their selections based on officer record briefs (ORBs) and officer evaluation reports (OERs). Many officers with high conceptual ability have pursued broadening assignments and advanced civil schooling (many of which require high GPAs and standardized test scores), resulting in those officers generating fewer OERs and fewer tactical-experience ORB entries than their peers. Additionally, even though ORBs list academic degrees earned, they are devoid of most other conceptual markers, such as SAT/ACT/GRE scores, undergraduate GPA, quality of undergraduate school rankings (such as the Peterson Index), and order of merit rankings at Army Officer Education Schools, even though the Army possesses such data for most of its officers. While the authors argue for including conceptual ability and propensity markers on information given to future promotion and selection boards, we are quick to note that until there is a cultural change in the Army towards valuing the conceptual component of its line officers, such markers could result in holding strong conceptual performers back.

Second, some of the Army's current senior raters (battalion and brigade commanders) are biased against intellectual ability. Perhaps this is due to a similarity bias perpetuating itself, or perhaps it is due to high-conceptual-ability junior officers' questioning being interpreted as disloyal. Recent research has shown that US Army War College students scored lower in openness (one of the attributes that is most correlated with success at the strategic level) than the general US population.

Furthermore, brigade command selectees scored even lower in openness than the overall average of US Army War College students.²⁸

Third, the Army may not incentivize a culture where doing anything other than “taking the hill” (diligence and physicality) is seriously valued. Perhaps high-conceptual-ability officers sense that cognitive ability, ideas, and intellectual topics, or some components of them, are undesirable in modern Army officer culture (or at least not as desirable as traditional hyper-compliance and low-conceptual level tasks). Indeed, officers with higher intellectual ability and/or intellectual interests may recognize this bias. Consequently, they may be rated lower because of having lost the motivation to perform at their highest ability level.

A fourth possibility is that officers with higher intellectual abilities may actually make worse junior officers than their average peers. Perhaps hyper-compliance, as opposed to conceptual qualities, drives success in junior officers. Though this situation would be diametrically opposed to the prediction of both business leaders and academic literature, the military is a different industry and context than business. So, this possibility is conceivable. One explanation is if the gap between a leader’s and his or her followers’ intelligence is too great, the followers might not be able to identify with their leader, and leadership effectiveness may suffer.²⁹

Even if this fourth possibility is valid, it is almost inconceivable to imagine cognitive ability being anything other than highly predictive of the success of the strategy development, statesmanship, and decision making required of general officers. It follows that the Army may have some junior officers who may not be the best at running a rifle range. But, if placed in the most complex roles available at each strata of their careers, high-cognitive ability officers might be the most likely to provide outstanding strategic-level leadership.

Knowledge Production and IHC Retention

An organization’s Intellectual Knowledge Production is the applicability, quality, and rate of creative ideas an organization generates and shares with its stakeholders, typically through writing. An organization with effective knowledge production understands and asks important questions, rigorously studies them, and communicates the findings to its stakeholders through professional publication. Some of the larger organizations that actively contribute to intellectual knowledge production include CGSC and the US Army War College.

Retaining officers with high cognitive ability is critical for the armed forces because there is no lateral entry except at the bottom. The most binding way for the military to retain top talent is through advanced civil schooling, which requires officers to commit to additional service in exchange for the opportunity. When given to the best and brightest junior officers, this option influences them to stay for a career, maximizing the military’s overall intellectual human capital. An additional, but

28 Stephen J. Gerras and Leonard Wong, *Changing Minds in the Army: Why It Is So Difficult and What To Do About It* (Carlisle, PA: US Army War College Press, Strategic Studies Institute, 2013).

29 Leta Hollingsworth, *Gifted Children: Their Nature and Nurture* (Oxford: Macmillan, 1926); and Edwin E. Ghiselli, “Intelligence and Managerial Success,” *Psychological Reports* 12, no. 3 (June 1963): 898.

essential, component of the retention of the Army's best and brightest is for leaders at all levels to build unit cultures that value and exploit the conceptual component of officership. Officers with conceptual talents and inclinations will be more likely to remain in the Army if they believe such talents are valued by their organizations. This starts with the culture set at the senior Army leadership level. Though changing the culture of a large organization is hard and takes time, research has shown that leader behaviors influence organizational culture.³⁰ Further, it is a leader responsibility to effect culture to meet unit demands.

Unfortunately, the Army can lose its professional requirement to invest in education when operationally stressed. This was expressly evident in the decision to change OES requirements for promotion and selection during the Iraq and Afghanistan surges in the mid-to-late 2000's. In fact, while speaking at the Carnegie Council for Ethics and International Affairs, General Martin Dempsey stated that during this same period the military went from a profession that valued education to a point where it was undervalued and "being in the fight" was more important.³¹

An organization's professional culture is the extent to which an entity's actual beliefs, norms, and behaviors foster an adherence to their espoused values. The Army's ADRP-1 lists stewardship as one of the five essential characteristics of the Army Profession. Stewardship includes the duty to increase the profession's body of knowledge. Hence, a culture supportive of intellectual growth is essential to stewarding the Army Profession.³²

Based on the empirical evidence presented earlier, the more fundamental question is, "What are the Army's underlying assumptions of what makes a great Army officer?" If senior leaders believe motivation and conceptual abilities are tradeoffs along a single continuum, force-distributed ratings require senior leaders to choose which of those two competencies is more important when allocating top evaluation ratings. This debate has often been described as Athens versus Sparta.³³ Contextually, Athens represents an institutional preference for intellectual ability, critical thinking, education, etc. Conversely, Sparta represents an institutional preference for motivation, tactical-ability, action-bias, diligence, intensity, physicality, etc. Many in the Army may generally associate the Spartan descriptions as more in line with the expectations of the combat-arms' culture(s), and the Athenian descriptions as more in line with the expectation of the other-than-combat arms culture(s)—which may notably also apply to female officers due to their current ineligibility to branch Infantry, Armor, and Special Forces. The reality is that being a Spartan and/or Athenian are independent decisions/concepts. Officers can be varying degrees of both, one, or

30 Edgar H. Schein, "Organizational Culture," *American Psychologist* 45, no. 2 (February 1990): 109-119.

31 Martin E. Dempsey, Jeffrey D. McCausland, Joanne J. Myers, "A Conversation with General Martin Dempsey, Chairman of the Joint Chiefs of Staff," *Carnegie Council for Ethics in International Affairs*, November 6, 2014, <http://www.carnegiecouncil.org/studio/multimedia/20141106/index.html>.

32 US Department of the Army, *The Army Profession*, Army Doctrine Reference Publication (ADRP 1) (Washington, DC: US Department of the Army, June 2015).

33 Lance Betros, *Carved from Granite: West Point Since 1902* (College Station: Texas A&M University Press, 2012).

neither. The two constructs are actually differing talent/preference buckets, versus competing components. The authors argue that both are essential in our officers.

Researcher Steven Kerr established that an organization cannot reward one thing while hoping for something else. Indeed, the empirical evidence discussed previously suggests the Army rewards Spartans. This priority is understandable, as all leaders are expected to generate positive results. However, leaders' motivation levels and cognitive ability levels are independent of each other. If Army leaders consider motivation and intellect to be opposite competencies along one continuum, but prefer motivation over cognitive ability, senior officers who see signs of intellectual ability and/or interest in their junior officers will necessarily assume that the junior officers' motivation must be lacking. Subsequently, they will likely punish such officers on their OERs. In other words, if an organization assumes an officer cannot be both an Athenian and a Spartan, and prefers Spartans, any sign of Athenians will be discouraged. If these assumptions are left unchecked for a number of years, when the Army needs senior officers who are Athenians, there will be only Spartans remaining to choose from. This situation is called a Criteria-Needs-Mismatch.³⁴ The Criteria-Needs-Mismatch does not mean there will not be any conceptually-oriented officers selected for early promotion and command. Such a mismatch just means it is likely there will be fewer of them remaining in the talent pool which sources our strategic leaders than what is needed by the organization.

A recent conversation with a commander of a top-tier special operations selection team highlights the hazard of the Army's underlying assumption of either-or and motivation preference. In addition to field and physical fitness testing, the organization also puts its officer candidates through a multitude of psychological testing, including an IQ (cognitive ability) test. The recent commander noted, "We shy away from the candidates who are high on that test; they take too long to make a decision." On the contrary, research has shown that brighter people come up with alternatives faster than their average-conceptual-level peers.

An Intellectual Culture Assessment of the Army

MIT researcher Edgar Schein's organizational model is useful as a tool to assess the intellectual culture of the Army.³⁵ Schein's model presents cultural artifacts as those things that are easily seen and heard in organizations, while actual values and underlying assumptions are the hidden portions of the cultural iceberg.

Some of the Army's current artifacts and espoused values include the official Army motto of "Army Strong," not "Army Smart." While innocuous alone, it fits with the previous OER (DA Form 67-9), which required raters to choose one leader skill between conceptual, interpersonal, technical, or tactical, and being selected as anything other than tactical was generally not interpreted well. To be fair, the new junior officer OER lists six competencies that must be described individually, including intellect (although the new field grade OER does not).

34 Spain, "Finding and Keeping Stars."

35 Schein, "Organizational Culture."

More obvious are the seven Army values of loyalty, duty, respect, selfless service, honor, integrity, and personal courage. None of these has any direct reference to the value of thinking or ideas, while unchecked loyalty can block critical thinking and the propagation of new ideas. Lastly, an officer who scores 90 percent in each of the APFT's events receives a badge, yet we do not regularly give unit-level awards for intellectual tasks.

As shown previously, the higher an officer's cognitive ability, the lower that officer's chance at early promotion and battalion command selection. As a curious anecdote, the promotion rate to colonel for officers with PhDs was lower than the Army average from 2011 to 2013. Surprisingly, the Army does not actively invest in advanced civilian education for its personnel managers or OES instructors. In the 1980's, the Army sent as many of 7,000 officers per year to graduate school. The Army reduced that to 415 in the 1990s. Currently, the Army sends 600-700.³⁶ A not-so-long ago discussion at the joint flag officer orientation course, typically referred to as "Capstone," revolved around how much education "was too much" for senior officers. The quorum of newly selected flag officers from all services concluded that a public school or distance learning masters was fine, but certainly not a PhD or Ivy League masters.

Also, Army conventional wisdom sees CCC/ILE/SSC as times to "take a knee, reflect, and think deeply." Though this is certainly true, it implies that thinking is separate from doing. If this is the case, over a typical officer's 24-year career, he or she is only thinking for a grand total of 24 months. Perhaps in *Force 2025 and Beyond*, critical thinking will be normalized as part of the everyday profession of arms.

The two underlying assumptions, derived from the artifacts and actual values, are as follows: 1) the Army prefers a particular type of officer to command and 2) officers are either tactical/motivated *or* conceptual, but not both. Since Army leaders may believe they have to choose between these two false categories of officers, many assume motivated officers are better leaders. This leads to a belief that junior officers who show strong conceptual ability/interest cannot also be diligent and high-performing. Therefore, the valued scarce resources (highest ratings) are given to the motivated officers who do not show intellectual ability/interest. This may mean that intellect is considered by many to be a "hygiene factor" for Army officers—where a basic amount is required for competence, but anything above that level may not be valued, or, even worse, be considered to be against the best interest of the profession.³⁷

Changing the Culture for Force 2025 and Beyond

Given the vast amount of intellectual human capital at the military's disposal, there are many changes that can be implemented to develop a culture where people think deeply and effectively to win in a complex world. Without cultural intervention, the current underlying

³⁶ Statistics provided by LTC David Lyle, Director, Office of Economic and Manpower Analysis, September 1, 2014.

³⁷ Frederick Herzberg, "The Motivation-Hygiene Concept and Problems of Manpower," *Personnel Administration* (January-February 1964): 3-7.

assumptions will continue to drive our organizations' values, which will continue to drive its artifacts and realities.

The foundational mechanism to engender a culture that values ideas and critical thinking is for leaders to make formal statements attesting to the value their organization places on critical thinking and idea generation at all levels of their commands. Subsequently, leaders must embody those attributes as they exercise their roles. A few of the ways to create a culture of learning include making critical thinking one of the institution's or unit's core values, encouraging and rewarding candor and ideas from all levels, and deliberately setting an after-action-review (AAR) culture where all are encouraged and expected to speak up. In an effort to return the "cool" factor to thinking in the Army, local commanders could regularly host ideation sessions where ideas are debated and encouraged openly by all ranks, where junior leaders are encouraged and expected to challenge ideas from senior leaders. In short, to optimize the IHC in their organizations, commanders should actively role model the learning agility behaviors: critical thinking, seeking new knowledge and challenging experiences, and actively reflecting on that new knowledge and his or her experiences for conceptual and leader growth. These formal statements include the Secretary of the Army's promotion and selection board guidance. If the Secretary emphasizes conceptual ability and propensity, so will board members. Additionally, senior leaders should prioritize conceptual ability and propensity in their formations.

As part of this cultural emphasis, the Army could also encourage lieutenants and captains to write learning essays based on their observations, perceptions, and intuitions. These essays could be based on local training procedures, ideas for force design, emerging technologies, historical studies, or any other topic germane to officership. These essays would not only revive the idea generation and debate within our unit newsletters, post newspapers, doctrine houses, and professional journals, but they would also greatly improve our officers' ability to create, communicate, and defend cogent thoughts – skills that will serve them and the Army well at senior ranks.

In addition to establishing a culture that values critical thinking, the Army could change how it generates intellectual human capital. To accomplish this better, the Army could prioritize its officer recruiting for conceptual ability. Accession procedures could strongly value raw cognitive ability and test for the learning agility behaviors. After officers are initially recruited, the Army should continually develop and re-evaluate their leaders' conceptual abilities. By considering existing cognitive ability and propensity markers (such as the academic evaluation report) during selection and promotion boards while putting safeguards in place that prevent favoritism, the Army can ensure our leaders are up to the challenges ahead, while simultaneously fostering inclusiveness.

Additionally, the Army can invest more in the long-term intellectual development of its leaders. First, the Army could ensure a high-level of intellectual rigor is embedded in its commissioning programs and officer education system, where cadet and officer academic performance becomes a part of the officers' records and has can inform organizational selection and development decisions beyond just their initial choices of branch or post.

Another example is that the Army can begin to change its culture by sending 50 percent of its officers to earn advanced educational degrees from civilian institutions. Not only will this seed the force with higher-level thinking, it has the added effect of influencing its conceptually focused officers to remain in the active Army longer. Included in these cohorts, most G-1 and Human Resource Command assignment officers should be sent to attend human resource management or labor economics programs, and officer educational system (OES) instructors should pursue degrees directly related to the field they will teach other officers.

Even with the potential shortcomings in the officer promotion system, the authors believe it does an admirable job of capturing motivation and diligence, two very desirable traits of officership. Since the existing Army promotion system selects diligence, the Army can prioritize the intellectual development of the early-selected officers by sending them to top civilian graduate schools. This would ensure the Army takes those it has identified as the most motivated and helps them become more intellectual. This way the Army can emphasize both the diligence and the conceptual components of officership, versus prioritizing or developing one component over the other, as may be occurring now. Also, in order to directly target the top conceptual ability officers for retention, the Army can offer these advanced civilian schooling opportunities to officers who score in the top percentages on standardized tests (GRE, etc), Learning Agility instruments administered as part of the OES curriculums, and Army OES schools.

Similarly, while outside the scope of this essay, the Army should strongly pursue similar intellectual human capital building programs for warrant officers, non-commissioned officers, and Department of the Army civilians, including building critical-thinking training into professional curricula. Allowing our personnel, and especially those who show both signs of overall motivation and motivation towards conceptual tasks, to pursue professional certificate or degree programs would increase the overall Army's intellectual performance needed in *Force 2025 and Beyond*.

The Army's current talent management system has produced legions of quality officers and senior leaders. But, if our promotion and command selection systems punish junior officers for their conceptual ability, can it take our Army into an ever more complex and changing world? By developing, promoting, and selecting the most conceptually agile officers while building an Army Culture that promotes idea generation and critical thinking, the Army will ensure it has a future force that will win in the world of tomorrow.

Everett S.P. Spain

Colonel Everett S.P. Spain is an Academy Professor in the Department of Behavioral Sciences and Leadership at the United States Military Academy. He has served in the 82nd Airborne Division, V Corps (Germany and Kosovo), and the Multi-National Force-Iraq. Most recently, he commanded the US Army Garrison- Schweinfurt. He is graduate of USMA (BS), Duke University (MBA), and Harvard University (DBA), and is qualified as a Ranger, Sapper, and Master Parachutist.

J.D. Mohundro

MAJ Mohundro is a Logistics officer currently assigned as an instructor at the US Military Academy. He has previously served in Armor and Cavalry battalions, with multiple deployments in support of Operation Iraqi Freedom. He has also served in the US Army Training and Doctrine Commanding General's Initiatives Group.

Bernard B. Banks

Colonel Bernard B. Banks is a Professor, United States Military Academy and Head of West Point's Department of Behavioral Sciences and Leadership. COL Banks has served in the 82nd Abn Div, 4th Inf Div, 6th Cav Bde (Air Combat), and the 2nd Inf Div where he commanded 3-6th Cavalry. Most recently, he deployed to Afghanistan in 2015 and served as a Liaison Officer within the NATO Special Operations Component Command. COL Banks is graduate of USMA (BS), Northwestern Univ. (MBA), Harvard Univ. (MPA), US Army War College (MSS), and Columbia Univ. (Ph.D). He is qualified as a Senior Aviator, Ranger, and Master Parachutist.

