



Visit our website for other free publication
downloads

<http://www.StrategicStudiesInstitute.army.mil/>

[To rate this publication click here.](#)



Carlisle Barracks, PA

STRENGTH and WISDOM

CHANGING MINDS IN THE ARMY: WHY IT IS SO DIFFICULT AND WHAT TO DO ABOUT IT

Stephen J. Gerras
Leonard Wong



Report Documentation Page

*Form Approved
OMB No. 0704-0188*

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE OCT 2013	2. REPORT TYPE	3. DATES COVERED 00-00-2013 to 00-00-2013			
4. TITLE AND SUBTITLE Changing Minds in the Army: Why It Is So Difficult and What To Do About It		5a. CONTRACT NUMBER			
		5b. GRANT NUMBER			
		5c. PROGRAM ELEMENT NUMBER			
6. AUTHOR(S)		5d. PROJECT NUMBER			
		5e. TASK NUMBER			
		5f. WORK UNIT NUMBER			
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army War College, Strategic Studies Institute, 47 Ashburn Drive, Carlisle, PA, 17013-5010		8. PERFORMING ORGANIZATION REPORT NUMBER			
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)		10. SPONSOR/MONITOR'S ACRONYM(S)			
		11. SPONSOR/MONITOR'S REPORT NUMBER(S)			
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified	Same as Report (SAR)	47	

The United States Army War College

The United States Army War College educates and develops leaders for service at the strategic level while advancing knowledge in the global application of Landpower.

The purpose of the United States Army War College is to produce graduates who are skilled critical thinkers and complex problem solvers. Concurrently, it is our duty to the U.S. Army to also act as a “think factory” for commanders and civilian leaders at the strategic level worldwide and routinely engage in discourse and debate concerning the role of ground forces in achieving national security objectives.



The Strategic Studies Institute publishes national security and strategic research and analysis to influence policy debate and bridge the gap between military and academia.



The Center for Strategic Leadership and Development contributes to the education of world class senior leaders, develops expert knowledge, and provides solutions to strategic Army issues affecting the national security community.



The Peacekeeping and Stability Operations Institute provides subject matter expertise, technical review, and writing expertise to agencies that develop stability operations concepts and doctrines.

U.S. Army War College

SLDR

Senior Leader Development and Resiliency

The Senior Leader Development and Resiliency program supports the United States Army War College's lines of effort to educate strategic leaders and provide well-being education and support by developing self-awareness through leader feedback and leader resiliency.

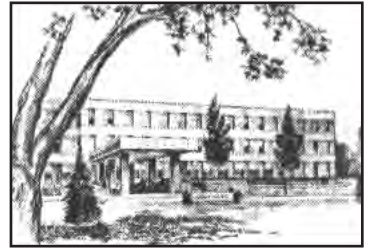


The School of Strategic Landpower develops strategic leaders by providing a strong foundation of wisdom grounded in mastery of the profession of arms, and by serving as a crucible for educating future leaders in the analysis, evaluation, and refinement of professional expertise in war, strategy, operations, national security, resource management, and responsible command.



The U.S. Army Heritage and Education Center acquires, conserves, and exhibits historical materials for use to support the U.S. Army, educate an international audience, and honor soldiers—past and present.

STRATEGIC STUDIES INSTITUTE



The Strategic Studies Institute (SSI) is part of the U.S. Army War College and is the strategic-level study agent for issues related to national security and military strategy with emphasis on geostrategic analysis.

The mission of SSI is to use independent analysis to conduct strategic studies that develop policy recommendations on:

- Strategy, planning, and policy for joint and combined employment of military forces;
- Regional strategic appraisals;
- The nature of land warfare;
- Matters affecting the Army's future;
- The concepts, philosophy, and theory of strategy; and,
- Other issues of importance to the leadership of the Army.

Studies produced by civilian and military analysts concern topics having strategic implications for the Army, the Department of Defense, and the larger national security community.

In addition to its studies, SSI publishes special reports on topics of special or immediate interest. These include edited proceedings of conferences and topically-oriented roundtables, expanded trip reports, and quick-reaction responses to senior Army leaders.

The Institute provides a valuable analytical capability within the Army to address strategic and other issues in support of Army participation in national security policy formulation.

**Strategic Studies Institute
and
U.S. Army War College Press**

**CHANGING MINDS IN THE ARMY:
WHY IT IS SO DIFFICULT
AND WHAT TO DO ABOUT IT**

**Stephen J. Gerras
Leonard Wong**

October 2013

The views expressed in this report are those of the authors and do not necessarily reflect the official policy or position of the Department of the Army, the Department of Defense, or the U.S. Government. Authors of Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press publications enjoy full academic freedom, provided they do not disclose classified information, jeopardize operations security, or misrepresent official U.S. policy. Such academic freedom empowers them to offer new and sometimes controversial perspectives in the interest of furthering debate on key issues. This report is cleared for public release; distribution is unlimited.

This publication is subject to Title 17, United States Code, Sections 101 and 105. It is in the public domain and may not be copyrighted.

Comments pertaining to this report are invited and should be forwarded to: Director, Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College, 47 Ashburn Drive, Carlisle, PA 17013-5010.

All Strategic Studies Institute (SSI) and U.S. Army War College (USAWC) Press publications may be downloaded free of charge from the SSI website. Hard copies of this report may also be obtained free of charge while supplies last by placing an order on the SSI website. SSI publications may be quoted or reprinted in part or in full with permission and appropriate credit given to the U.S. Army Strategic Studies Institute and U.S. Army War College Press, U.S. Army War College, Carlisle, PA. Contact SSI by visiting our website at the following address: *www.StrategicStudiesInstitute.army.mil*.

The Strategic Studies Institute and USAWC Press publishes a monthly email newsletter to update the national security community on the research of our analysts, recent and forthcoming publications, and upcoming conferences sponsored by the Institute. Each newsletter also provides a strategic commentary by one of our research analysts. If you are interested in receiving this newsletter, please subscribe on the SSI website at *www.StrategicStudiesInstitute.army.mil/newsletter*.

ISBN 1-58487-597-6

FOREWORD

While changing one's mind is not something we normally associate with strategic leadership, Stephen Gerras and Leonard Wong point out that it is not only a valuable skill at the strategic level, but also a necessary capability in the current security environment of complexity and change. Unfortunately, as the authors describe, changing one's mind does not come easy for Army senior leaders. Individual and organizational factors emerge that make the ability to change one's mind difficult and elusive. Nevertheless, this monograph introduces a concept that all Army senior leaders should evaluate both in themselves and the Army profession.



DOUGLAS C. LOVELACE, JR.
Director
Strategic Studies Institute and
U.S. Army War College Press

ABOUT THE AUTHORS

STEPHEN J. GERRAS is a Professor of Behavioral Sciences in the Department of Command, Leadership, and Management at the U.S. Army War College. He served in the Army for over 25 years, including commanding a light infantry company and a transportation battalion, teaching leadership at West Point, and serving as the Chief of Operations and Agreements for the Office of Defense Cooperation in Ankara, Turkey. Dr. Gerras holds a B.S. from the U.S. Military Academy and an M.S. and Ph.D. in industrial and organizational psychology from Penn State University.

LEONARD WONG is a research professor in the Strategic Studies Institute at the U.S. Army War College. He focuses on the human and organizational dimensions of the military. He is a retired lieutenant colonel whose career includes teaching leadership at West Point and serving as an analyst for the Chief of Staff of the Army. Dr. Wong's research has led him to locations such as Iraq, Afghanistan, Kosovo, Bosnia, and Vietnam. He has testified before Congress, and his work has been highlighted in news media such as the *New York Times*, the *Wall Street Journal*, the *Washington Post*, the *New Yorker*, CNN, NPR, PBS, and 60 Minutes. Dr. Wong is a Professional Engineer and holds a B.S. from the U.S. Military Academy and an M.S. and Ph.D. from Texas Tech University.

SUMMARY

With the end of the wars in Iraq and Afghanistan, the U.S. Army now finds itself in a time of extraordinary fiscal and national security uncertainty. In such an environment, it seems naïve, or at least overly optimistic, to assume that all, or even most, of a strategic leader's current assumptions will be just as relevant several years into the future. It follows, then, that senior leaders may need to be willing to change their minds on important issues. History and organizational studies both demonstrate that changing one's mind is quite difficult, even in the face of overwhelming evidence that this change needs to occur. This monograph explains how smart, professional, and incredibly performance-oriented Army senior leaders develop frames of reference and then oftentimes cling to their outdated frames in the face of new information. The monograph describes the influence of individual-level concepts—personality, cognitive dissonance reduction, the hardwiring of the brain, the imprints of early career events, and senior leader intuition—along with group level factors to explain how frames of reference are established, exercised, and rewarded. It concludes by offering recommendations to senior leaders on how to structure Army leader development systems to create leaders comfortable with changing their minds when the environment dictates.

**CHANGING MINDS IN THE ARMY:
WHY IT IS SO DIFFICULT
AND WHAT TO DO ABOUT IT**

The only thing harder than getting a new idea into the
military mind is to get an old one out.

B. H. Liddell Hart
*(Thoughts on War, London:
Faber & Faber, 1944, p. v.)*

In October of 2000, General Eric Shinseki, the U.S. Army's Chief of Staff, delivered a speech announcing some very significant changes for the Army—a new readiness reporting system, improvements to the beleaguered military medical system, and a proposed increase in the size of the Army to alleviate the deployment strain on Soldiers. Somehow, however, these initiatives were overshadowed by a seemingly innocent policy change announced almost as an afterthought—issuing every Soldier a black beret.

Howls of protest followed the announcement almost immediately. Members of elite units—the Rangers, Special Forces, and paratroopers—were the first to decry their loss of distinctiveness through the egalitarian issue of the beret. Former Rangers marched from Fort Benning, GA, to the White House to deliver a beret in protest. Because some of the berets would be purchased from China (of all countries), Congress became involved. Finally, after congressional pressure and a nudge from the White House, Defense Secretary Donald Rumsfeld put the plan on hold until further review. Meanwhile the media and public watched in puzzlement over what seemed to be an inordinate amount of discussion and dissent over a hat.

But the hullabaloo over the beret was not about fashion. It was about changing minds and how, in the

U.S. Army, changing minds is an incredibly difficult feat. It was about the arduous process of changing an Army that had for half a century equipped, trained, and prepared itself to fight World War III—and did it very well. Yet that very success posed an obstacle for change in the future. The need for change became obvious in 1990 when the only forces that could be deployed quickly against the armored columns of Saddam Hussein were the outgunned paratroopers of the 82nd Airborne Division. A decade later, the difficulties in deploying Task Force Hawk to Kosovo reinforced the growing concern that the Army was still working with a Cold War mindset in a post-Cold War world.

General Shinseki put the Army on a dizzying pace of transformation that introduced radical changes to the doctrine, training, technology, and thinking of the Army. The result was an Army that was learning to be more agile and versatile yet still struggled to shed the vestiges of an Army that had existed mainly to fight the Soviet hordes on the plains of Europe. General Shinseki had put the Army on the route of acclimatization, the process by which an organism becomes better adapted to exist in an environment different from the one to which it was indigenous. Just as some animals shed their winter coats to acclimatize to the onset of spring, the Army needed to keep its high intensity conflict capability, yet shed some of the assumptions and habits of the Cold War in anticipation of peacekeeping, humanitarian assistance, disaster relief, and asymmetrical warfare of the future.

The black beret was supposed to be part of the Army's process of acclimatization. It was intended to be a small change in attitude preparing the Army for the larger paradigm shifts of the future. It was fielded as a symbol of unity to pull the Army together as it

confronted the challenges in the process of change. Instead, it exposed the internal foot dragging, reluctance, and divisiveness that almost always emerges when the Army attempts to change minds. An Army survey during that period showed that despite the Chief of Staff's efforts to change the thinking of the leadership of the Army, 50 percent of battalion and brigade commanders reported that they were uncomfortable with the pending changes of transforming the Army.¹ In hindsight, it is almost incredulous that—a year before the terrorist attacks of September 2001—half of the soon-to-be strategic leaders of the Army were skeptical of shifting from a Cold War force to a more agile Army. Encountering difficulty in the process of changing minds in the Army, however, is something that should be anticipated, planned for, and dealt with. Yet, recent history reveals that Army strategic leaders continue to struggle with changing their minds.

In 2007, nearly two-thirds of the combat deaths in the Iraq insurgency had been caused by improvised explosive devices (IEDs)²—often the result of an attack against the vulnerable Humvee. Despite mounting evidence that mine-resistant ambush protected (MRAP) vehicles could reduce IED casualties up to 80 percent over the Humvee,³ there were only a little over 1,000 MRAPs deployed with the Army 4 years after the first IED in Iraq had exploded.⁴ For a variety of reasons, senior Army leaders were reluctant to replace the 21,000 Humvees in theater with the more costly, heavy, cumbersome, and yet more protective MRAPs.

For example, at an industry conference interview in 2007, Colonel Jeffrey Helmick, a battalion commander during the 2003 Iraq invasion and now the transportation capabilities manager at the Army's Training and

Doctrine Command, was asked about the future of Humvees despite the growing clamor for MRAPs in theater. Helmick had recently returned to Iraq and, after noticing that units were installing armor on Humvees in response to IEDs, commented, "Soldiers in the motor pool are making a difference when it comes to up-armorings." Helmick added, "The Humvee is not going anywhere. It will be with us until 2026, possibly until 2030."⁵ It finally took a directive later that year from Defense Secretary Robert Gates to end the debate and force a one-for-one replacement of an MRAP for each up-armored Humvee. Announcing the mandated switch to MRAPs, Gates stated, "For every month we delay, scores of young Americans are going to die."⁶ Colonel Helmick, a gifted leader known for his competence and intellect, is just one example of a successful senior officer struggling with the difficulty of changing his mind. Changing one's mind remains a critical, and often times elusive, skill for even the best Army strategic leaders.

With the end of the wars in Iraq and Afghanistan, the U.S. Army now finds itself in a time of extraordinary fiscal and national security uncertainty. In such an environment, it seems naïve, or at least overly optimistic, to assume that all, or even most, of a strategic leader's current assumptions will be just as relevant several years into the future. It follows then, that senior leaders may need to be willing to change their minds on important issues instead of clinging to increasingly obsolete ideas and positions. For this monograph, *changing one's mind* implies a reversal of a previous judgment or position on an issue. This monograph is not advocating capricious, wishy-washy organizational decisionmaking. Instead, it merely highlights the need for Army senior leaders to question their

deep-seated beliefs on critical issues periodically and base their decisions on the most current information, rather than relying solely on what they have long believed to be true.

Changing one's mind is more than an individual-level challenge. Organizations, including the Army, rarely achieve alignment among all interested parties or stakeholders. Large organizations contain subgroups and power centers that typically have competing theories on the best way for the organization to achieve its primary goal: sustainable competitive advantage. As the environment changes and as various stakeholders apply different assumptions and offer disparate strategies for progress, strategic leaders will often need to recognize the merit in competing theories and then change their minds on key issues to make the best decision. Of course, that may require the senior leader to let go of preconceived notions such as tradition (as in the case of the Army's headgear) or outdated methods (as in the case of the limited effectiveness of up-armoring Humvees against the IED threat), if letting go is what the environment dictates.

Why it is so hard for Army senior leaders to change their minds is discussed in the following sections. First, the concept of frames of reference is introduced, followed by a discussion of how and why neuroscience makes changing one's mind difficult. The role of organizational variables on this process is then examined. Finally, we look at how strategic leaders might apply this knowledge to enhance the likelihood that as the environment evolves, they are able to actually change their minds.

THE PROBLEM

To understand why changing one's mind is difficult, especially for Army strategic leaders, we must first consider *frames of reference*. Frames of reference are the complex knowledge structures we develop through personal and professional experiences that influence—and often limit—the way we approach issues. Our frames of reference provide the set of criteria or stated values that we refer to when we make measurements or judgments. Frames of reference are deeper than mere viewpoints since they often involve ideals or standards. Similarly, frames of reference are not as foundational as worldviews since they are more malleable and not as absolute. Each of us can possess frames of reference for things such as the best way to raise children, the manners expected when talking to a superior in the workplace, or even the role of airpower in war. Changing one's mind requires a reevaluation of one's frames of reference when confronted with new information. Unfortunately, shattering or unlearning our frames of reference is an action that is easy to espouse, yet incredibly difficult to execute.⁷

When faced with an argument or information that conflicts with our existing frames of reference, our typical thought processes tend to follow a general pattern. First, we reassure ourselves that our frame of reference is correct and reasonable. Otherwise, why would we hold it? We then shift to telling ourselves that if a person presenting an opposing view would just make the effort to understand our frame of reference, they would surely align their frame of reference with ours. If, however, the person does not change his or her mind to align with ours, we write the person off as hopelessly biased or terribly close-minded. This

all takes place under the overarching assumption that, if we ourselves were presented with evidence that our frame of reference was wrong (certainly, a very rare occurrence), then we would adjust accordingly. Unfortunately, the underlying assumption that each of us has the ability to rise above our own limitations and see issues from an optimal perspective is, more often than not, simply untrue.

So how do Army senior leaders develop these frames of reference, and why are they so hard to change once established? The answer lies in a person's innate qualities, combined with a person's accumulated experiences.

Nature and Nurture.

To understand how Army officers develop their frames of reference, we need to—well—put aside our frames of reference about how people come to know what they know. The place to start is genetics. Most of us assume that our thoughts and our ability to change them in light of new data have nothing to do with our genetic make-up. Scholars have spent years rebuffing the “Great Man” theories of leadership that claim people with certain inborn traits and characteristics are destined to become historic leaders. However, most leadership scholars now recognize that certain hereditary traits and characteristics are indeed related to leadership effectiveness.⁸ So, a sophisticated understanding of frames of reference development requires attention to years of research on the importance of inborn traits. Studies on identical twins—especially those separated at birth—provide strong evidence that genes contribute, somehow, to just about every aspect of personality. In the simplest terms, person-

ality consists of the typical way a certain person responds to situations.⁹ The Five-Factor personality model is the most widely accepted model to describe human personality. It consists of five empirically derived, independent factors: *openness*, *conscientiousness*, *extraversion*, *agreeableness*, and *neuroticism*. Research consistently shows that humans inherit 40 to 50 percent of their personality traits.¹⁰

Why does this matter? It brings to light that there are factors beyond our control – including the personality factor of *openness* – that may greatly influence how people develop their frames of reference and the potential for changing them. Openness is “the recurrent need to enlarge and examine experience.”¹¹ Openness is manifested in a strong intellectual curiosity, creativity, and a comfortable relationship with novelty and variety. People scoring high in openness tend to be more creative and more aware of their feelings. They are more likely to hold unconventional beliefs and can work with symbols and abstractions. People with low scores on openness tend to have more conventional, traditional interests, preferring familiarity over novelty. They tend to be conservative and resistant to change, although they also tend to be more productive. Leaders high in openness search for relevant and conflicting perspectives. Not only are they imaginative, but they also solicit alternate points of view and are comfortable debating with those whose perspectives differ from their own. They are generally more receptive to change.¹² Therefore, the attribute of openness will affect the lens through which a person builds his or her frames of reference, along with the willingness to eventually challenge and potentially alter those frames. The link between the personality domain of openness and the proclivity to change one’s mind is strong.

Officers with higher levels of openness would be expected to have more potential to change their minds, if needed. An analysis of the openness of the Army's most successful officers, however, reveals an interesting situation. Personality data gathered at the U.S. Army War College (USAWC) from lieutenant colonel and colonel students show that the most successful officers¹³ score lower in openness than the general U.S. population. Upon reflection, this makes sense. People with lower openness scores would probably be more inclined to join the Army in the first place. Additionally, since those who are more closed tend to be more productive, it is logical that officers viewed as successful by the institution would be even less open. To make matters worse, though, those USAWC students selected for brigade command score even lower than the overall USAWC average.¹⁴ This raises an interesting paradox: The leaders recognized and selected by the Army to serve at strategic levels—where uncertainty and complexity are the greatest—tend to have lower levels of one of the attributes most related to success at strategic level.¹⁵

Most military officers will not find this paradox surprising. Military culture values decisive, can-do leaders who do not get distracted in environments with unfavorable signal-to-noise ratio. At the tactical level, this makes sense. Low openness at the strategic level, however, becomes problematic. A strong body of research concludes that senior decisionmakers who are more open and less rigid in their frames of reference are much more likely to make better judgments.¹⁶

A second partially inherited attribute related to this topic is cognitive ability (it has a higher inheritability percentage than personality variables like openness¹⁷). If the Army suffers somewhat from a lack of openness,

at least the officer corps should benefit from the relatively higher levels of cognitive ability in a profession that requires a bachelor's, and often master's, degree of its senior officers. Indeed, a quick analysis of demographic information clearly shows that Army officers possess above average intelligence. Oddly enough, the relationship between having smarts and having the propensity to change one's mind is counterintuitive. In his highly regarded book, *The Righteous Mind*, Jonathan Haidt asserts that intelligence quotient (IQ) is the biggest predictor of how well people argue, but only in terms of how well they support their own position. Research shows that smart people are no better than those with less intelligence at finding reasons that support the other side of an argument.¹⁸ The result is that the more intelligent a person is, the better he or she is at rationalizing his or her already held beliefs. Smart people tend to excel at buttressing their own cases but often fail at exploring the issue fully to appreciate other perspectives and perhaps change their minds. Of course, this is not to imply that the solution to this paradoxical situation is to dumb down the officer corps. Instead, we need to recognize and appreciate that inherited personality factors, such as openness and cognitive ability, influence or constrain the ability of strategic leaders to change their minds. This assertion highlights and raises the question: How do frames of reference develop in the first place?

Imprinting.

Our frames of reference develop throughout our lives. For most officers, the frames of reference concerning the military that developed prior to entry into the military usually come through discussions

with relatives and friends; movies, social media, and TV shows; and K-12 education. Arguably, the most important developmental period for frames of reference—the time in which military officers acquire the most significant and long-lasting military-related frames of reference—is during their first assignment.

The term “imprinting” has been around for decades. Konrad Lorenz used the term to describe filial imprinting in which newborn goslings attach to the first object they encounter.¹⁹ Lorenz found that during the process of filial imprinting, there is a critical period for learning that is irreversible once something has been imprinted upon. Because Lorenz was the first thing the newly hatched geese saw, the goslings imprinted on Lorenz and followed him everywhere he went.²⁰ *Career imprinting* is a derivative concept and is:

A form of learning that encompasses the professional impression left on individuals by an organization. Filial imprinting is involuntary and permanent; in contrast, humans can reflect on an organizational career imprint, recognize its influence on their behavior, and decide if and how to change their behavior.²¹

That, at least, is the theory. In reality, career imprints are often harder to change than the theory suggests.

Three factors appear to strengthen the imprinting of an officer’s first assignment. First, a strong organizational culture and *robust socialization practices* in which insiders transmit basic norms and values will increase the imprinting in the first assignment. Second, *stretch opportunities*—jobs that really challenge the newly commissioned officer, especially in combat—strengthen the imprint because the officer is often not able to reach back to pre-commissioning or officer entry courses to derive a logic of action. In-

stead, stretch opportunities force the junior officer to operate from a blank slate. Finally, *demonstrated success in the initial job* instills a sense in the officer that the frames of reference assimilated in the first assignment are valuable. As most strategic leaders are multiple below-the-zone selectees for higher rank, it could be argued that there is a tendency for senior leaders to reflect back on their initial assignments and conclude that they were “lucky to learn the right way” early in their career.²² Because individuals are more susceptible to career imprints when they are young – although powerful imprints can occur at any point in a career – imprints experienced at the company grade level can be expected to be deeper and longer lasting.²³

When officers reach the senior ranks, they often try to recreate aspects of their early careers by employing these frames of reference. The imprints are difficult to change, perhaps not to the level of the goslings, but they can hold considerable influence on decisions made later in military careers. This helps explain why some officers who spent their early years fighting the Soviet-styled Krasnovian army at the National Training Center in Fort Irwin, CA, would be so hesitant to embrace a shift from the staying power of heavy forces to the agility of the lighter objective force or why an Army senior officer whose first assignment was in a battalion in Germany would insist that forward basing is preferable to frequent rotations of expeditionary forces home-based in the continental United States. The influence of career imprints is not absolute. But as officers approach novel situations at the strategic level, they must be cognizant of the tendency to revert to imprinted (and possibly outdated) frames of reference established early in their careers.

Expertise and Intuition.

The preceding discussion might lead one to infer that frames of reference – the sum of our personal and professional experiences – are a bad thing. This is not the case. In a complex world in which information inundates leaders, frames of reference are the foundation of successful decisionmaking. No Army strategic leader would be successful without relying on expertise accumulated across a career. There is, however, an important caveat concerning that expertise. As Julia Sloan argues in her book, *Learning to Think Strategically*:

Expertise is both a charm and a curse. It lets us quickly categorize a situation as typical. It lets us know where to focus our attention and what to ignore. But sometimes we can become so complacent about what we think we know that we are caught off guard when the unexpected happens. This is the flip side of expertise; it can blind us and give us a false sense of knowing. Expertise enables us to ignore cues and options we don't think are worth attending to.²⁴

Expertise is invaluable unless the context evolves quickly and dramatically. Unfortunately, today's environment is, as the military's *Capstone Concept for Joint Operations* (CCJO) describes it, "an increasingly complex, uncertain, competitive, rapidly changing, and transparent operating environment."²⁵ In such a context, the CCJO asserts that successful organizations must have leaders "emphasizing trust, force of will, *intuitive judgment*, and creativity, among other traits."²⁶ Intuitive judgment, a near-synonym with the Clausewitzian operational term, *coup d'oeil*,²⁷ highlights the importance of instinct and divination in the decisionmaking of military commanders.

Napoleon Bonaparte, Erwin Rommel, and Robert E. Lee have long served as exemplars of the use of intuitive judgment.

Here, however, is the surely unpopular rub: consistent research shows that intuition is overrated. Intuition is invaluable at the tactical and operational levels. At the strategic level, where patterns and consistency are not as common, intuition loses its power. We tend to forget that Napoleon had his Waterloo, Rommel was routed at the Second Battle of El Alamein, and the Civil War's conclusion began with Lee's defeat at Gettysburg. As Nobel laureate Dan Kahneman asserts, "Remember this rule: intuition cannot be trusted in the absence of stable regularities in the environment."²⁸ Countering the military's fixation with intuition, he argues:

The confidence that people have in their intuitions is not a reliable guide to their validity. In other words, do not trust anyone—including yourself—to tell you how much you should trust their judgment.²⁹

Haidt adds:

Gut feelings are sometimes better guides than reasoning for making consumer choices and interpersonal judgments, but they are often disastrous as a basis for public policy, science, and law.³⁰

Army senior leaders must be willing to examine and adapt their entrenched beliefs, given the rapid rate of change in the strategic environment. Although intuition and expertise are critical to leaders—when faced with volatile, uncertain, complex, and ambiguous issues—senior decisionmakers must appreciate

the limitations of applying expertise and intuition since it will often lead to close-mindedness and a tendency to dismiss dissonant information too quickly. Recent research on senior Army leaders (i.e., general officers) shows a strong inclination to trust intuition over empirical evidence when making complex decisions.³¹ Unfortunately, relying on memory retrieval is often risky since it can be an untrustworthy lower order cognitive process.³²

HOW FRAMES OF REFERENCE FORM

An understanding of the formation of neural networks is central to appreciate why established beliefs and judgments are so difficult to change. At its most basic level, the brain might appear like an immense compilation of on-and-off switches. Given a stimulus, the 100 billion neurons in the brain either fire or do not. The connections between neurons, however, are not fixed. Instead, they are strengthened or weakened by the pattern of stimuli.³³ Scientists do not yet understand how neurons collectively create thought, but the artificial intelligence (AI) community has done some work that might help in this understanding. The AI community has developed artificial neural networks based on mathematical algorithms initially devoid of specific values (much like a newly commissioned officer's portfolio of frames of reference when it comes to military issues). AI programmers only write the equations; receipt of incoming information determines whether connections are formed, as well as their associated strength. The AI community labels this virtual space where these connections are formed, strengthened, and weakened as the hidden layer.³⁴ Robert Burton, in *On Being Certain*, applies the concept of the hidden layer to our thinking. He states:

It is in the hidden layer that all elements of biology (from genetic predispositions to neurotransmitter variations and fluctuations) and all past experience, whether remembered or long forgotten, affect the processing of incoming information.³⁵

Any two individuals, therefore, will respond differently to the same stimulus or problem. For each individual, as one connection changes, so do all the others.

Burton suggests that *Amazon.com* is an appropriate metaphor to describe this phenomenon of how frames of reference form.³⁶ The first time a person uses *Amazon.com*, the website does not suggest additional books that the person might enjoy. It cannot; it has no data on the person. Yet each time that individual searches the site, clicks on a book to review, opens its virtual cover to look inside, or makes a purchase, Amazon's mathematical algorithms begin to work. The algorithms search for patterns, continuously making connections and, eventually and somewhat eerily, result in amazingly accurate book suggestions. If a Web shopper marks a book as a gift, the purchase is noted but does not get weighted as much as if the book were bought for the shopper. If a customer tends to enjoy a certain author, Amazon makes note of that and offers the work of similar authors for purchase. The Amazon system has basically formed the equivalent of a neural network for each customer, and no two networks are alike because no two people conduct the exact same searches.

If, during a 3-year time span, a person only searches for military history books, Amazon will list military history books in the suggestions section for that person. The more military history books that person buys, the more this genre is weighted. If, after 3 years,

however, that person decides to peruse 19th century impressionists and searches for relevant books, the book suggestions would still recommend military history. It would take a number of Renoir book searches and purchases to eventually re-weight the neural link equivalents in Amazon. Neuroscientists contend this description is not unlike human brain processes, which also tend to rely on established patterns. As interneuronal connections increase, they become more difficult to overcome.³⁷ One reason why it is so hard to change our minds is that we are trapped by our patterned experiences. Routines, imprints, and perspectives developed early in an officer's career are like multiple years of military history book purchases; it will take significant exposure to and valuing of other perspectives to alter our frames of reference. Burton asserts:

In order to pursue long-range thoughts, we must derive sufficient reward from a line of reasoning to keep at the idea, yet remain flexible and willing to abandon the idea once there is contrary evidence. But if the process takes time and a repeated sense of reward develops, the neural connections binding the thought with the sensation of being correct will gradually strengthen. Once established, such connections are difficult to undo. Anyone who's played golf knows how difficult it is to get rid of a slice or a hook. The worst part is that the bad swing that creates the slice actually feels more correct than the better swing that would eliminate it.³⁸

How might this play out in a military career? Imagine a senior Army officer whose career began with repetitive assignments in divisional units. Much like 3 years of buying military history books, this officer established a neural network during important imprinting years in which the Army was most effec-

tive with a division-centric approach. With the shift toward the decentralized brigade combat team as the Iraq and later the Afghanistan wars progressed, the senior officer recognizes that the changed operating environment should have reframed his opinion, but his gut tells him that there will be problems with abandoning the notion of deploying a full division. He lets data from 25 years ago outweigh current experience. He sticks with his intuition and does not change his mind.

Where does this discussion put us? Senior Army officers have typically self-selected to be part of the profession of arms because a military career aligns with their self concept. They show up at the pre-commissioning source probably a little less open-minded than ideal (at least for the strategic level), but they are smart and incredibly performance-oriented, and they routinely possess strong moral values. Senior leaders go through basic officer education programs and then, because of the novelty and challenge of a first assignment, have career-lasting imprints stamped into their brains. They adjust these imprints incrementally as they go through their careers, but the lack of openness, the application of intellect to rationalize already-held beliefs, and the neurology of the brain make it increasingly difficult to update their frames of reference as they progress through the ranks. By the time many officers reach the senior levels, their confidence in their own judgments has been established, exercised, and rewarded. As a result, they tend to put more faith in their own intuition than empirical evidence presented to them.

Confirmation Bias.

There is one more relevant piece of this dilemma. It focuses on cognitive dissonance and confirmation bias. It is an illusion to believe decisionmakers treat information and diverse opinions equally. Individuals pay particular attention to information that supports their beliefs and either ignore or discount the value of evidence that contradicts their beliefs. When senior Army officers encounter information that is contrary to their beliefs or opinions, they face a condition known as cognitive dissonance, or the state of tension arising from holding two cognitions that are psychologically inconsistent.³⁹ Researchers using images from MRI scans found that when subjects were confronted with dissonant information, they often used the reasoning areas of their brain not to analyze new data or information, but rather to develop a narrative that preserves their initial frames of reference. Once the narrative is created, the emotional areas of the brain happily light up.⁴⁰ The researchers concluded that individuals, when faced with dissonant information, use their reasoning skills to “twirl the cognitive kaleidoscope until they get the conclusions they want.”⁴¹ The resulting release of positive neurotransmitters gives strong reinforcement for justification of their existing perspective. Confirmation bias emerges as information is interpreted in a way to confirm old preconceptions and dismiss new contradictory evidence.

Admiral Husband E. Kimmel, Commander in Chief of the Pacific Fleet in December 1941, thought the main threat to the Pacific Fleet was from sabotage, not a Japanese attack. He therefore did not heed orders in late November 1941 to initiate a defensive deployment of the fleet. Despite secret cryptographic intelli-

gence, repeated warnings from Washington, and even the sinking of a submarine near the entrance to Pearl Harbor 1 hour before the attack, Kimmel was resistant to changing his mind and ordering immediate preparations for a Japanese assault. Rather, he rationalized each piece of dissonant information in a way that allowed him to maintain his initial perspective.⁴²

Much like Admiral Kimmel, we tend to spend much of our lives looking to confirm our already held beliefs as opposed to consistently searching for dissonant information or conflicting cues that challenge our perspectives. This confirmation bias is yet another reason why once our minds are made up, it is very difficult to change. When we are faced with contrary information, our tendency is to mentally work hard to discount the information so that we can confirm our previously held views. Not surprisingly, when a recent sample of senior Army leaders was asked for an example of when their intuition was wrong, none could offer a single example.⁴³

Organizational Culture.

We have discussed how the nature and nurture of leaders may constrain their ability to change their frames of reference and hence, inhibit changing their minds even when signals or dissonant information may suggest otherwise. Not all obstacles to leaders changing their way of thinking, however, are at the individual level. Organizational level factors can also contribute to the hindrance of corrective action to the faulty thinking processes of senior leaders. For example, the recent spate of senior officer misconduct and ethics violations has reinforced that even the highest ranks are susceptible to ethical transgressions. Yet one

would assume that at least one person in the omnipresent coterie of well-informed, well-intentioned personal staffs that typically surround senior leaders would speak up and bring the leader back on the straight and narrow path. Unfortunately, even if subordinates clearly recognize that a senior leader needs to make a course correction, the culture of the organization may often hinder subordinates from bringing up a contrarian point of view. In other words, one of the factors that may contribute to a senior leader seeing a flawed perception of reality is an organizational culture that discourages subordinate dissent or disagreement.

Culture has many dimensions, but two empirically supported relevant dimensions of organizational culture are *power distance* and *assertiveness*.⁴⁴ Power distance reflects the degree to which members of a collective accept unequal distributions of power. It is implicit in hierarchical organizations, and more so in the military. Organizational cultures that support low power distance expect and encourage power relationships that are more advisory or democratic. In a low power distance culture, organizational members relate to each another more as equals rather than superiors and subordinates. Subordinates are more comfortable with, and expect to contribute to, the decisionmaking process of superiors. In high power distance cultures, subordinates accept power relationships that are more absolute and autocratic. Superiors have power simply by where they are situated in the hierarchy. While high power distance cultures provide a stable distribution of power that brings order in uncertain and chaotic environments, they also tend to suppress subordinates from questioning, disagreeing, or raising alternative points of view. Thus, although the high power distance culture common in the military contributes

to combat effectiveness in adverse and complex situations, it also has the potential to squash conflict and disallow dissent. It is the prevalence of this culture in the Army that prompted Defense Secretary Robert Gates to state in a West Point speech that, “If, as an officer, you don’t tell blunt truths – or create an environment where candor is encouraged – then you’ve done yourself and the institution a disservice.”⁴⁵

The organizational culture dimension of *assertiveness* captures “the degree to which individuals are assertive, confrontational, and aggressive in their relationships with others.”⁴⁶ Organizations high on the assertiveness dimension value direct, tough, and unambiguous communication from everyone in the organization. Low assertiveness cultures tend to value cooperation, warm relationships, and loyal subordinates. Clearly correlated with power distance, assertiveness expectations vary across the Army but tend to be lower on the scale. For example, in a recent Center for Army Leadership study of over of 16,800 leaders who were surveyed across the Army, only about half thought that their unit or organization encouraged the frank or free flow discussion of ideas.⁴⁷ Similarly, a study conducted on the Army profession found that only about a quarter of the survey respondents believed that the Army encourages candid opinions. Additionally, many junior officers believed that they would be punished if they offered senior leaders opinions judged as “too candid.”⁴⁸ Although high levels of assertiveness are espoused in the Army, in practice, neither the subordinate nor the leader typically expects direct, tough pushback to a leader’s thoughts or ideas.

There are no ideal levels of cultural dimensions like power distance and assertiveness; rather, the strength of the dimension should align with the context. We

maintain that in the military context, power distance tends to be too high and assertiveness expectations too low. In the case of senior officer misconduct and ethical lapses, a low power distance culture in which assertiveness was expected, or demanded, might have led to subordinates pointing out inconsistencies with senior leader behavior before it crossed the line. Unfortunately, in a high power distance culture at the strategic level (which arguably has been the military norm throughout history) in which assertiveness is more an espoused than practiced value, strategic leaders are unlikely to be presented mental models and assumptions that diverge from their entrenched frames of reference. In other words, we need to realize that at the strategic level, it is very difficult to overcome the military cultural tendencies that discourage dissent and inhibit candor.

WHAT TO DO?

The preceding paragraphs might lead one to think that the Army should despairingly conclude that its senior leaders are incapable of changing their minds. Thankfully, despite a plethora of individual and organizational obstacles and hindrances, changing one's mind is not impossible. Creating an Army that facilitates that ability, however, will take a series of deliberate, long-term actions.

At the individual officer level, the Army must continue its emphasis on self-awareness. This begins with leaders taking attitudinal and personality assessments and continues as leaders become alert to how, as individuals, they process information. Introspection alone, however, is not sufficient since we tend to confirm our self-justifying beliefs and conclude that our positions

and self-concept are legitimate and reasoned. Self-awareness should be enhanced by providing officers with data from subordinates and peers that provide a more external and behaviorally focused perspective.

The Army currently has a variety of 360° feedback instruments available to provide leaders the opinions of others. Ideally, an item on the 360° instrument should ask, “How receptive is this officer to changing his or her mind?” Regardless, a critical requirement for the effective use of any 360° instrument is for the subordinates and peers providing the evaluation to be identified by a method that does not include the targeted officer influencing the selection process. Finally, qualified feedback providers should interpret and communicate the 360° feedback to the targeted officer.

An emphasis on continuous assessment and experimentation is another avenue to improve the ability for senior leaders to change their minds. Despite the documented limitations of intuition in complex contexts, senior leaders continue to pay an overabundance of homage to intuition. Leaders at the strategic level need to develop the habit of developing testable hypotheses and then implementing small experiments, or perhaps relatively unbiased assessments of historical data, to confirm or refute their hypotheses. There will always be an “art” to the practice of leadership – even at the strategic level. But senior leaders should also recognize the value and the substance of the “science” of strategic leadership.

The next recommendation is one that, in the past several years, has been brought up so many times in task force reports, speeches, and opinion pieces that its true meaning has been lost many iterations ago: Army officers need to be broadened. Broadening occurs when dissonance is forced on Army officers. It happens when there is a clash of frames of reference

and developing leaders realize that the world's thinking does not always align with theirs. A good broadening experience does not necessarily result in officers changing their minds. Instead, a worthwhile broadening experience results in officers assessing their own frames of reference and then being forced to step back to examine the existence and merit of the frames of reference of other people.

The best broadening experiences immerse an aspiring leader in an environment where the comfortable hierarchy of the Army is removed, frames of reference are questioned, and assumptions are tested. It could be in a top-tier graduate school where the officer's study group partner is a communist, many of the professors are anarchists, and just about all the neighbors are pacifists. Or it could be an intergovernmental agency internship where meetings seem to drone on endlessly, and consensus, not decisiveness, is the most admired quality. A quick metric for determining if an experience can be deemed broadening is this: If the environment permits "Hooah!" as a legitimate response, then it is probably not a useful broadening experience.

As officers rise in rank to assume senior strategic positions, they need to develop a group of trustworthy advisors that will tactfully challenge their positions and viewpoints. As Tavriss and Aronson assert:

We need a few trusted naysayers in our lives, critics who are willing to puncture our protective bubble of self-justifications and yank us back to reality if we veer too far off. This is especially important for people in positions of power.⁴⁹

Of course, assembling a "Red Team" capable of providing different perspectives and conducting alternative analyses is the undemanding part of this recom-

mentation. Actually getting the group to challenge the senior leader's frames of references is the more difficult, yet more vital action.

Two aspects will affect an advisory group's ability to speak unvarnished truth to a senior leader. First, as mentioned earlier, a high power distance relationship in the organizational culture will discourage subordinates from critiquing or criticizing a senior leader's decisionmaking process. In order for a group of subordinates to feel comfortable with challenging a senior leader, a culture of trust must be established between the group and the senior leader. A culture of trust is instituted not by senior leader proclamations, edicts, or pronouncements, but rather by the observed actions of the senior leader. How a senior leader encourages, reacts to, and rewards dissent or disagreement will determine the power distance relationship of the organization's culture.

A second factor influencing a group's ability to provide candor focuses on the in-group of advisors who have special access to the senior leader. C. S. Lewis describes such a group as the "Inner Ring" and suggests that membership often becomes an unspoken badge of cachet and prestige. Lewis describes the siren song of desire to belong to the Inner Ring:

Often the desire conceals itself so well that we hardly recognize the pleasures of fruition. Men tell not only their wives but themselves that it is a hardship to stay late at the office or the school on some bit of important extra work which they have been let in for because they and So-and-so and the two others are the only people left in the place who really know how things are run. But it is not quite true. It is a terrible bore, of course. . . . A terrible bore, ah, but how much more terrible if you were left out!⁵⁰

Candid feedback from an advisory group will be difficult to obtain if group membership, instead of honest feedback, becomes the primary motivation of group members. Thus, advisory group members must guard against the influence of the powerful, yet often unstated, human desire to be in the Inner Ring. Likewise, senior leaders should not be so naïve to discount the possibility that their advisors, despite all their entreaties to do otherwise, are merely telling them what they want to hear.

Finally, the journey to developing Army strategic leaders who can change their minds when confronted with new situations begins long before officers reach the senior ranks. Haidt asserts that the most effective way for people to develop their ability to change their minds is by interacting with different people and entertaining diverse ideas.⁵¹ For junior officers who are (rightfully) immersed in the fairly homogeneous and rather insulated culture of the tactical Army, there may be very little time to interact with people holding different opinions. But junior officers can develop the habits of good critical thinking by analyzing what they read in the newspaper, trying to understand the reasoning of contrary opinion pieces, or even maintaining a hobby unrelated to the daily duties of a junior officer. Hopefully, the Army will afford mid-career officers the opportunity of a broadening experience, but these officers should also deliberately and gradually take steps to expand their sphere of interaction to include those who may not see the world exactly as they do. This could range from membership in the local Rotary Club to signing up for automated newsletters from a diverse group of think tanks. At the senior level, officers should routinely physically and mentally be engaging people and ideas from unfamiliar and

divergent perspectives. In other words, an officer's career should gradually grow to include increasing amounts of intentional exposure to people and ideas outside his or her entrenched frame of reference. We make these recommendations knowing that the Army is low on the openness scale; therefore, it will require mindful, deliberate effort to include these suggestions into Army leader development.

During a discussion with software designers in October 2012, Amazon chief executive officer Jeff Bezos declared that "People who were right a lot of the time were people who often changed their minds."⁵² Bezos went on to offer that consistency of thought is not a particularly positive trait; even asserting that "It's perfectly healthy – encouraged, even – to have an idea tomorrow that contradicted your idea today."⁵³ In an era where decisionmakers are routinely and soundly criticized for "flip-flopping," it appears that consistency of thought is often viewed as a required leadership virtue. In large hierarchical organizations such as the Army, consistency of thought is the norm and not the exception. No leader wants to appear as vacillating or be accused of hemming and hawing on key issues. Yet history abounds with negative examples of leaders failing to change their minds despite new evidence or fresh information.

Much of knowing when to change your mind is an art, not a science. When does a virtue like persistence turn into obstinacy, which is usually considered a vice? At what point does a theater commander change the plan in the face of continued poor performance? How does an Army strategic leader know when the fiscal environment has changed enough to require reprogramming resources? These questions are difficult to answer, but what we suggest in the preceding

paragraphs is that for an Army operating in an environment of intense uncertainty and profound ambiguity, changing one's mind may not only be a distinct possibility, but also a pressing necessity.

ENDNOTES

1. *Army Transformation Survey*, Ft. Belvoir, VA: U.S. Army Research Institute for Behavioral and Social Sciences, December 5, 2000.

2. Rick Atkinson, "The Single Most Effective Weapon Against Our Deployed Forces," *Washington Post*, September 30, 2007, available from www.washingtonpost.com/wp-dyn/content/article/2007/09/29/AR2007092900750.html.

3. Tom Vanden Brook, "Marines, Others Clamor for New Armored Trucks," *USA TODAY*, June 28, 2007, available from usatoday30.usatoday.com/news/washington/2007-03-27-mrap-military_N.htm.

4. *Ibid.*

5. Sandra I. Erwin, "Army Predicts Long Life for Humvees," *National Defense*, July 2007, available from www.nationaldefensemagazine.org/archive/2007/July/Pages/ArmyPredicts2572.aspx.

6. Secretary of Defense Robert Gates, Pentagon press conference, Washington, DC, June 29, 2007.

7. Julia Sloan, *Learning to Think Strategically*, New York: Elsevier, 2006, p. 92.

8. Shelley A. Kirkpatrick and Edwin A. Locke, "Leadership: Do Traits Matter?" *Academy of Management Executive*, Vol. 5, No. 2, 1991, pp. 48-60.

9. Frank J. Landy and Jeffrey M. Conte, "Teams in Organizations," *Work in the 21st Century*, 2nd Ed., Malden, MA: Blackwell Publishing, 2007, p. 100.

10. Thomas J. Bouchard, Jr., and John C. Loehlin, "Genes, Evolution, and Personality," *Behavior Genetics*, Vol. 31, No. 3, May 2001, p. 253.

11. R. R. McCrae, and P. T. Costa, Jr., "Conceptions and Correlates of Openness to Experience," R. Hogan, J. A. Johnson, and S. R. Briggs, eds., *Handbook of Personality Psychology*, New York: Academic Press, 1997, p. 167.

12. D. Scott DeRue, Susan J. Ashford, and Christopher G. Myers, "Learning Agility: In Search of Conceptual Clarity and Theoretical Grounding," *Industrial and Organizational Psychology Perspectives on Science and Practice*, Vol. 5, Issue 3, September 2012, p. 267.

13. Attendance at a senior service college is a nearly universal wicket for promotion to colonel. For Army Competitive Category officers, about 80 percent of all colonels have attended senior service college.

14. This observation has been communicated by several USAWC commandants in open briefings and validated with the Army Physical Fitness Research Institute, the collectors of personality trends in Army officers.

15. Lisa A. Dragoni *et al.*, "Developing Executive Leaders: The Relative Contribution of Cognitive Ability, Personality, and the Accumulation of Work Experience in Predicting Strategic Thinking Competency," *Personnel Psychology*, Vol. 64, 2011, pp. 829-864.

16. Philip E. Tetlock, *Expert Political Judgment*, Princeton, NJ: Princeton University Press, 2005, p. 21.

17. Bartels *et al.*, "The Five Factor Model of Personality and Intelligence: A Twin Study on the Relationship Between the Two Constructs," *Personality and Individual Differences*, Vol. 53, 2012, pp. 368-373.

18. Jonathan Haidt, *The Righteous Mind: Why Good People are Divided by Politics and Religion*, New York: Pantheon, 2012, p. 81.

19. Konrad Lorenz, "Der Kumpan in der Umwelt des Vogels" ("The Companion in the Bird's Environment"), *Journal für Ornithologie*, Vol. 83, Issue 3, July, 1935, pp. 289-413.

20. The geese later became sexually attracted to Lorenz as adults, but while that reinforces the power of filial imprinting, it does distract somewhat from the intent of this paper.

21. Monica Higgins, *Career Imprints*, San Francisco, CA: Jossey Bass, 2005, p. 333.

22. *Ibid.*, p. 54.

23. *Ibid.*, p. 85.

24. Sloan, p. 158.

25. Chairman, U.S. Joint Chiefs of Staff, *Capstone Concept for Joint Operations: Joint Force 2020 (CCJO)*, Washington, DC: CJCS, September 10, 2012, p. 15.

26. *Ibid.*, p. 4.

27. Carl Von Clausewitz, *On War*, Michael Howard and Peter Paret, eds. and trans., Princeton, NJ: Princeton University Press, 1984, p. 102.

28. Daniel Kahneman, *Thinking, Fast and Slow*, New York: Farrar, Straus, and Giroux, 2011, p. 241.

29. *Ibid.*, p. 239.

30. Haidt, p. 90.

31. Glenn K. Cunningham, "A Phenomenological Study of the use of Intuition among Senior Military Commanders," Ph.D. diss., Capella University, 2012, p. 160.

32. See Kahneman, p. 11, for a description on intuition. See Thomas Kida, *Don't Believe Everything You Think: The 6 Basic Mistakes We Make in Thinking*, Amherst, NY: Prometheus Books, 2006, pp. 201-213, on the fidelity of memory retrieval.

33. Robert A. Burton, *On Being Certain*, New York: St. Martin's Griffin, 2008, p. 42.

34. See *Ibid.*, p. 44, for a thorough discussion of AI, hidden layer, and neural networks.

35. *Ibid.*, p. 45.

36. *Ibid.*, p. 46.

37. *Ibid.*, p. 52.

38. *Ibid.*, p. 96.

39. Carol Tavris and Elliot Aronson, *Mistakes Were Made, But Not by Me*, New York: Harcourt, 2007, p. 13.

40. *Ibid.*, p. 19.

41. Jonah Lehrer, *How We Decide*, New York: Houghton Mifflin Harcourt, 2009, p. 205.

42. Kimmel's decisionmaking prior to the Japanese attack is a contextual issue that has received much hindsight. It is fair to say that he had an initial fact pattern that the Japanese were planning to attack southeast Asia, not Hawaii. He then interpreted information with a predisposition to believe his initial fact pattern. See Samuel Eliot Morison, *The Two-Ocean War*, Boston, MA: Little, Brown and Company, 1963, pp. 49-52.

43. Cunningham, p. 177.

44. See Geert Hofstede, *Culture's Consequences: International Differences in Work-Related Values*, Beverly Hills, CA: Sage, 1980; and Robert J. House, Paul J. Hanges, Mansour Javidan, Peter W. Dorfman, and Vipin Gupta, *Culture, Leadership, and Organizations*, Thousand Oaks, CA: Sage, 2004, for a discussion about power distance and assertiveness as cultural dimensions.

45. Robert Gates, "Text of Secretary of Defense Robert Gates' speech at West Point," *Stars and Stripes*, April 22, 2008, available from www.stripes.com/news/text-of-secretary-of-defense-robert-gates-speech-at-west-point-1.77986.

46. House *et al.*, p. 30.

47. Special Report 2012-1, *CAL Annual Survey of Army Leadership*, Fort Leavenworth, KS: Center for Army Leadership, May 2012.

48. *The Army Profession Annual Report*, Fort Knox, KY: U.S. Army Training and Doctrine Command, April 2, 2012.

49. Tavis and Aronson, p. 66.

50. C. S. Lewis, "The Inner Ring," Memorial Lecture at Kings College, University of London, 1944, available from www.lewis-society.org/innerring.php.

51. Haidt, p. 68.

52. Anthony W. Kosner, "Jeff Bezos on How to Change Your Mind," *Forbes.com*, October 19, 2012, available from www.forbes.com/sites/anthonykosner/2012/10/19/jeff-bezos-on-people-who-are-right-a-lot-vs-wrong-a-lot-has-he-got-it-right/.

53. Jason Fried, "Some advice from Jeff Bezos," *37 Signals*, October 19, 2012, available from 37signals.com/svn/posts/3289-some-advice-from-jeff-bezos.

U.S. ARMY WAR COLLEGE

**Major General Anthony A. Cucolo III
Commandant**

**STRATEGIC STUDIES INSTITUTE
and
U.S. ARMY WAR COLLEGE PRESS**

**Director
Professor Douglas C. Lovelace, Jr.**

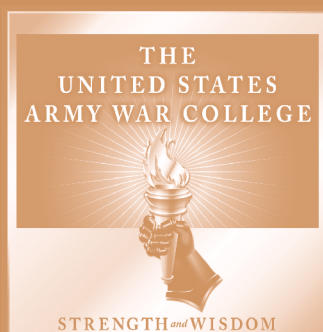
**Director of Research
Dr. Steven K. Metz**

**Authors
Dr. Stephen J. Gerras
Dr. Leonard Wong**

**Editor for Production
Dr. James G. Pierce**

**Publications Assistant
Ms. Rita A. Rummel**

**Composition
Mrs. Jennifer E. Nevil**



FOR THIS AND OTHER PUBLICATIONS, VISIT US AT
<http://www.carlisle.army.mil/>

ISBN 1-58487-597-6



9 0000 >



This Publication



SSI Website



USAWC Website