

Tread-Heads or Technophiles? Army Officer Attitudes Toward Transformation

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The Army has committed itself to the most dramatic change of any of the US military services. In October 1999 General Eric K. Shinseki, then the Army Chief of Staff, announced a goal of reconfiguring the Army from a force mainly composed of heavy formations into a medium-weight force capable of deploying a 5,000-soldier brigade anywhere in the world within 96 hours. The Army is replacing some heavy armored and mechanized units with a force of six Stryker Brigade Combat Teams equipped with light wheeled armored vehicles. By 2010, it will field a networked Future Force equipped with the Future Combat System.¹ This shift away from heavy armor as the main combat element of the Army portends change not only to the Army's organization and systems, but also to its hierarchy, career paths, and organizational culture.

The officer corps will play a key role in determining the success or failure of Army transformation. Enthusiastic officers will work hard to make new concepts and organizations a reality. Skeptical officers, by contrast, could undermine such efforts. Unfortunately, to date leaders have had little reliable data upon which to gauge the attitudes of Army officers toward the new combat methods. On the one hand, the Army leadership asserts that the service embraces innovation. As the *Army Transformation Roadmap* puts it:

The Army recognizes the need to create a culture of innovation, and we are beginning to address this need through the officer professional development system. Initiatives to nurture innovation are emerging from the top down and the bottom up. These provide evidence not only of the Army's commitment to this endeavor, but also of the favorable climate within today's Army towards innovation.²

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On the other hand, in the wake of General Shinseki's initiative there were numerous reports of opposition to transformation from within the ranks of the service.³ Nearly all such reports, however, are anecdotal, consisting of scattered quotes from unnamed sources.

This article presents selected results of the first systematic effort to understand officer attitudes toward transformation in recent years. It is based upon surveys conducted in 2000 and 2002 of more than 4,500 officers—including nearly 1,900 Army officers. It reveals a dramatic shift in Army attitudes toward transformation during that period. In 2000, Army officers as a group were among the more skeptical of the need for change; in late 2002, they were among the most supportive. In 2002 they shared a belief that the spread of long-range precision-strike capabilities would require the Army to become lighter and more capable of dispersing on the battlefield. However, they were uncertain that the Army was on the right path in seeking to replace heavy armored vehicles with formations reliant upon robust information networks. Moreover, many felt that elements of the Army's organizational culture inhibited innovation.

Why Study Officer Attitudes?

There are four compelling reasons why it is important to understand officer attitudes toward transformation. First, the military services will be the ultimate practitioners of the new ways of war. The extent to which their members are enthusiastic about change may help determine the success or failure of new technologies, operational concepts, and organizations. Second, although very few officers will likely emerge as true innovators, the existence of a climate conducive to innovation within the officer corps may encourage individuals both to generate new ideas and to remain in the service to bring them to fruition. Third, a large percentage of career officers will rise to senior leadership positions within their services in the next 10 to 20 years. In those roles, they will establish command climates that will either support or inhibit risk-taking and innovation. Past research has demonstrated the importance to innovation of senior officers who protect and nurture the careers of young innovators under their command who are willing to take risks.⁴ Finally, officers

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are the recognized experts in military affairs in the United States. They should be expected to take a leading role in determining the need for adopting different approaches to warfare.

Although officer attitudes may play an important role in the process of innovation, to date they have received little scrutiny. This article presents the results of a multi-year project designed to redress this shortfall.⁵ Since 2000 we have employed two large-scale surveys and a series of focus groups to gain a better understanding of officer attitudes and what shapes them. First, between March and October 2000 we conducted a survey of more than 1,900 officers—including 900 Army officers—attending seven US professional military education (PME) institutions.⁶ The survey population included junior and field-grade officers (O-3 through O-4), senior officers (O-5 through O-6), and flag officers (O-7 through O-8) from all branches of the US military, their reserve components, and the National Guard, as well as foreign officers and US government civilians.⁷ We also conducted a series of focus groups to help us better understand the results of the survey.

Second, in September and October 2002 we administered a web-based survey of more than 2,500 officers—including 962 Army officers—attending 14 PME institutions.⁸ This survey included many statements that had appeared in the 2000 survey as well as a number of new ones.⁹ Although the survey population may not be a characteristic cross-section of the entire officer corps, it is representative of the subset of the officer corps that gets an opportunity to attend PME institutions. Army, Air Force, and Marine Corps officers in particular are selected to attend PME institutions based upon their potential for higher command. Responses from today’s senior and flag officers provide insight into the attitudes of those who will be responsible for making decisions about how the armed forces transform themselves over the next five to ten years. By contrast, today’s junior officers will occupy the leadership of the US armed forces in 2020 to 2025.¹⁰

Our research demonstrates that nearly two decades after the Goldwater-Nichols Act, which was designed to make the US armed forces more “joint,” service affiliation remains the strongest determinant of officer

attitudes. In general, an officer's service affiliation proved more important in shaping his attitudes than his warfighting specialty. In other words, the attitudes of infantry officers in the Army were more like those of Army officers as a whole than like those of infantry officers in the Marine Corps. Rank also influenced attitudes, although to a much lesser degree. Senior officers were generally more expectant of change than junior and field-grade officers. Other demographic variables, like whether an officer had served in combat, had little to no effect upon responses.

The two surveys reveal a significant shift in Army attitudes toward transformation in recent years. In 2000, Army and Marine Corps officers were consistently more skeptical of the proposition that we are experiencing a revolution in warfare than their Navy and Air Force counterparts. Army and Marine Corps officers tended to feel most strongly that today's dominant weapon systems and organizations would be as important in the future as they are today. Conversely, they were more skeptical than their Navy and Air Force counterparts that the information revolution is changing the character of warfare. They believed less strongly than other officers that the United States was embarked upon a path to radical change. Indeed, they were the most doubtful of the need for the US armed forces to change.¹¹

By late 2002, by contrast, Army attitudes had shifted significantly toward those of the Air Force and Navy officers and away from those of the Marine Corps officers. Army officers had become much more supportive of change in the abstract and in the Army in particular. They also were generally supportive of the move to medium-weight forces, though a significant minority remained to be convinced that the Army was on the right path. On the other hand, the 2002 survey also revealed the widespread view that aspects of the Army's organizational culture might inhibit innovation.

Transformation and the US Armed Forces

George W. Bush campaigned on a pledge to transform the US armed forces by skipping a generation of technology. In a September 1999 campaign speech at The Citadel military college, then-governor Bush noted that "our military is still organized more for Cold War threats than the challenges of the new century—for industrial-age operations, rather than information-age battles."¹² Transforming the US armed forces became one of the Bush Administration's top priorities when it took office. Speaking at the Norfolk Navy Base in February 2001, President Bush promised to "move beyond marginal improvements to harness new technologies that will support a new strategy." He called for the development of ground forces that are lighter, more mobile, and more lethal, as well as manned and unmanned air forces capable of striking across the globe with precision.¹³

Soon after assuming office, Secretary of Defense Donald Rumsfeld commissioned Andrew W. Marshall, the Pentagon's premier strategic thinker, to conduct a fundamental review of US strategy and force requirements. He also commissioned a panel of senior experts to develop a transformation strategy for the Pentagon.¹⁴ However, early proposals to reduce the size of the US armed forces and cancel major acquisition programs to fund the development of new weapon systems garnered opposition among members of Congress and senior members of the armed services.¹⁵ The Defense Department's 2001 Quadrennial Defense Review contained none of the radical changes that originally had been discussed within the Defense Department.¹⁶

The war on terrorism has given transformation a new lease on life. In a second speech at The Citadel on 11 December 2001, President Bush renewed his call for the transformation of the US armed forces. Arguing that "the conflict in Afghanistan has taught us more about the future of our military than a decade of blue ribbon panels and think-tank symposiums," Bush called upon the military to field forces that would rely more heavily on unmanned aerial vehicles and precision-guided munitions. He also called for sacrifice, warning that "every service and every constituency of our military must be willing to sacrifice some of their pet projects. Our war on terror cannot be used to justify obsolete bases, obsolete programs, or obsolete weapons. Every dollar of defense spending must meet a single test: It must help us build the decisive power we will need to win the wars of the future"¹⁷

The Army's transformation program is motivated by a perceived gap between the changing security environment and the Army's force structure. On the one hand, the emerging strategic environment increasingly demands forces that are rapidly deployable. On the other hand, the US Army is divided between forces that are heavily armored and pack a lot of firepower but are slow to deploy, and light forces that can deploy quickly but lack lethality and survivability. The *Army Transformation Roadmap* puts the situation in stark terms:

With each passing year, our condition as a force becomes a greater liability. In time, that liability will become an unacceptable risk. . . . Taken together, the demands of the strategic environment and the realities of the Army's current condition necessitate profound change. We recognize our future shortcomings and we know that we have operational deficiencies today. The Army must transform.¹⁸

This transformation effort is proceeding along three pathways. First, the Army is modernizing selected units in the Current Force to provide a heavy capability for the foreseeable future. Second, the Army is fielding a force of six Stryker Brigade Combat Teams (SBCTs), which are designed to be lighter and more deployable. Rather than relying upon armor for protection, they will gain survivability through a combination of mobility and im-

proved information regarding the battlefield and the enemy. The SBCTs' main combat vehicle is the 19-ton wheeled Stryker, more than 2,000 of which in ten variants will eventually be fielded. The SBCTs will use enhanced intelligence, surveillance, and reconnaissance to develop an understanding of the battlefield situation before making contact with the enemy. The SBCTs' Reconnaissance, Surveillance, and Target Acquisition Squadron is designed to provide critical information on the enemy.

Third, the Army is in the early phases of developing the Future Force, a networked, combined-arms formation with manned and unmanned ground and air systems, robust communications networks, and reduced dependence on fixed infrastructure. As the *Army Transformation Roadmap* puts it, "We will design and structure [Future] Force formations for rapid response and deployment, including the capability to conduct operational maneuver from strategic distance employing combined arms in decisive operations."¹⁹ The Future Force will feature the Future Combat System (FCS), a family of manned and unmanned weapon systems, and will rely upon information networks for intelligence, planning, and operations.

Character of Future Wars

In 2000, Army and Marine Corps officers were the most skeptical of the proposition that new technology, doctrine, and organizations were changing the character of war.²⁰ Such a response is hardly unexpected. Land warfare is less technology-dependent and more manpower-intensive than combat at sea or in the air. Between 2000 and 2002, however, Army officers became significantly more convinced of the changing character of war. Marine Corps officers, by contrast, became more skeptical.

In 2002, a large majority of Army officers believed that information-age ways of war would make it easier for the United States to use force to achieve decisive battlefield victories with substantially reduced risk of US casualties. Sixty-seven percent of the Army officers felt that new technology, operational concepts, and organizations would make it easier to use force, 10 percent more than in 2000. Moreover, while 28 percent disagreed with the statement in 2000, only 20 percent disagreed in 2002. This represented the largest shift toward agreement of any service. By contrast, only 48 percent of Marine Corps officers believed it would be easier to use force, 11 percent fewer than in 2000.

An even larger majority of Army officers—92 percent—felt that new ways of war would make it easier to achieve decisive battlefield victories, compared to 56 percent in 2000. This represented both the largest positive response and the largest shift of any service. Although we cannot tell for

certain what caused this shift, it appears likely that the relative ease with which US forces dislodged the Taliban regime in Afghanistan influenced officers' attitudes toward the future.

Ground forces generally suffer the largest proportion of casualties in war. For example, ground forces sustained 102 of the 107 combat deaths during major combat operations in Operation Iraqi Freedom, and most of the deaths since then. Most Army officers surveyed in 2002, however, believed that new ways of war were making combat less lethal for American service-members. Sixty-three percent felt that new technology, operational concepts, and organizations would offer the United States the ability to engage in high-intensity operations with a substantially reduced risk of casualties, 11 percent more than in 2000. By contrast, only 39 percent of Marine officers agreed, 20 percent less than in 2000.

Army officers were less sure that new ways of war would yield shorter conflicts, a view seemingly bolstered by continuing military operations in Afghanistan and Iraq. Only 45 percent believed that new technology, operational concepts, and organizations would substantially reduce the duration of future conflicts, a view essentially unchanged since 2000. Even here, however, the Army response diverged from that of Marine Corps officers, 29 percent of whom agreed with the statement, 15 percent fewer than in 2000.

In short, Army officers, unlike their Marine Corps counterparts, believed that new ways of war would make it easier for the US armed forces to use force to achieve decisive battlefield victories with reduced casualties. Perhaps reflecting recent experience, however, they were ambivalent over whether the information age would bring shorter conflicts.

Attitudes Toward Change

Army officers became significantly more supportive of change in the abstract between 2000 and 2002. For example, 58 percent of the Army officers we surveyed in 2002 believed that the US armed forces must "radically" change their approach to warfare to compete effectively with future adversaries, 10 percent more than in 2000. Similarly, while 39 percent disagreed with the need to change radically in 2000, only 26 percent disagreed in 2002. The response of Army officers was comparable to that of Navy and Air Force officers, 58 percent and 56 percent of whom agreed with the statement, respectively. By contrast, only 42 percent of Marine Corps officers—and only 30 percent of Marine infantry officers—agreed. Moreover, 41 percent of Army officers equated transformation with radical change, the highest percentage of any service.

Most Army officers also believed that their service was undertaking large-scale change. Fifty-eight percent felt that the Army was embarked upon a

path that would lead to radical change in military technology, doctrine, and organization, the highest positive response of any service. Similarly, 61 percent believed that the US armed forces as a whole were embarked upon a path that would lead to radical change—also the highest positive response of any service.

Junior officers tended to see current changes as more significant than senior officers. Sixty-one percent of Army captains and majors believed that the Army was undergoing radical change, compared to 53 percent of lieutenant colonels and colonels. Similarly, 64 percent of Army junior officers believed the US armed forces as a whole were experiencing radical change, compared to 56 percent of senior officers.

We also found a major shift in attitudes toward change in the Army. Most Army officers who participated in our 2000 survey were solidly in favor of maintaining the status quo. Army officers tended to believe more strongly than Navy, Air Force, or Marine Corps officers that today's dominant weapon systems would be equally important in 20 years' time. This included not only armored and mechanized formations, but also manned aircraft and carrier battle groups.²¹ By contrast, respondents to the 2002 survey appeared to take the Army leadership at its word that heavy formations would play a progressively less important role in the service. For example, only 18 percent predicted that armored and mechanized units would be the primary force element of the Army in 2020.²² They also believed that the Army would deploy something like the Future Combat System to replace the main battle tank. Sixty-three percent felt that it was likely that by 2020 main battle tanks like the M1A2 Abrams would be replaced by smaller vehicles that would retain their survivability by substituting mobility and information networking for heavy armor.

Although Army officers believed that the service would move from heavy to medium-weight forces, they were less sure that this was advisable. Although two-thirds of respondents believed that heavy armor would not be the primary force element of the Army in 2020, only a small percentage (17 percent) definitively believed that heavy armor would not be relevant to future conflicts. Moreover, the experience of Operation Iraqi Freedom is likely to have increased support for the future relevance of heavy armor.

Army transformation is based upon a series of premises. The first is that advanced weaponry—including nuclear, biological, and chemical arms—in the hands of adversaries will require that forces disperse in order to survive. In the words of the *Army Transformation Roadmap*, the Future Force “will negate anti-access and area-denial strategies through its ability to deploy from multiple points of origin to multiple points of entry, in remote areas with unimproved infrastructure, and operate with a minimal logistical tail.”²³ The second is that advanced information technology will allow dispersed forces to retain or even increase their effectiveness. Indeed, information technology may allow

ground forces to mass effects without massing physically. It may also permit ground forces to conduct decisive engagements at far greater ranges than has heretofore been possible.

Most officers appeared to agree with the need to deploy forces that are less dependent upon ports and airfields. Seventy-three percent of Army officers believed that within the next ten years some adversaries would likely have the ability to use long-range, precision-strike weapons such as ballistic and cruise missiles to deny the United States the use of fixed military infrastructure, such as ports, airfields, and logistical sites. This represented a complete turnaround from 2000, when only eight percent agreed with that statement.²⁴ While we can only speculate as to the source of this change, it appears that the 11 September 2001 terrorist attacks on the World Trade Center and Pentagon shattered a sense of invulnerability that had previously obtained. Moreover, 82 percent of those who agreed felt the risk to forward bases of being attacked by precision-strike weapons would force the US armed forces to introduce new operational concepts that would allow them to project power without reliance on forward bases.

Many officers also felt that the US Army would need to disperse in future conflicts. Forty-six percent believed that within the next ten years, the proliferation of long-range, precision-strike weapons would make it too risky for the US military to mass forces geographically in small areas like it did during the 1990-91 Gulf War. Seventy percent of those who agreed believed that this increased risk would require the US military to adopt lighter and more mobile forces, and new concepts of operations, in order to avoid being attacked.

The Army's move to distributed forces is premised upon the existence of robust, survivable C4ISR systems.²⁵ As the *Army Transformation Roadmap* puts it:

As an information-enabled force, Army formations will input to and leverage the Joint C4ISR network to enable it to see first, understand first, act first, and finish decisively. . . . Harnessing the power of information will enable [Future] Force units to increase their lethality, precision, and survivability even while dramatically reducing their mass and "footprint."²⁶

Critics, however, argue that pinning transformation upon the development of such networks is both unwise and dangerous.²⁷

Although many Army officers supported the rationale for lighter, more dispersed formations, they were skeptical of the notion that networking can substitute for armor to ensure the survivability of future land forces. Army officers were concerned about the vulnerability of US information systems to attack. For example, 71 percent of Army officers felt that within the next 20 years, attacks upon computer networks would become a central feature of mili-

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tary operations. Moreover, 72 percent believed that information systems and networks were highly vulnerable to enemy countermeasures at the time of the 2002 survey. Junior officers were particularly concerned about network vulnerability. And two-thirds believed that some future adversaries would be able to prevent US forces from conducting operations by denying them the use of critical information networks.

Army officers were confident in the ability of the United States to provide persistent surveillance of areas of interest. Fifty-four percent of Army officers felt that within the next 20 years, sensor and command and control technology would allow the US armed forces to locate, track, and destroy enemy forces within a limited geographic area, regardless of enemy countermeasures, a response comparable to that in 2000. The source of this confidence is unclear, however. Certainly the US armed forces have access to increasingly sophisticated sensors and information processing systems. However, recent experience demonstrates the limitations of even these systems. During Operation Enduring Freedom in Afghanistan, for example, US forces have repeatedly found it difficult, if not impossible, to pinpoint Taliban and al Qaeda leaders.

In short, most Army officers appear to support the underlying rationale for the Army’s transformation to a medium-weight force. They are also confident—perhaps overconfident—in the ability of US sensors to provide adequate information on the adversary to enable lighter forces to be effective. However, they are skeptical of the robustness of the information networks needed to support dispersed operations.

Are We on the Right Path?

Although we found significant support for the underlying rationale for Army transformation, many Army officers question whether the service is on the right path. Even though there is support for the Army’s plan to field medium-weight formations, a significant number of officers remain skeptical. Forty-one percent agreed that the Army *should* begin now to replace most heavy armored and mechanized forces with medium-weight or light forces.

Predictably, support was weakest among armor officers, only 15 percent of whom agreed. By contrast, 40 percent of infantry and 58 percent of special forces officers supported the move. However, 64 percent of Army officers believed that the Army *would* replace most heavy armored and mechanized forces with medium-weight or light forces within the next 20 years. In other words, 23 percent more officers think the Army will transform itself into a medium-weight force than believe it should.

An officer's rank influenced his or her views of the desirability of moving from heavy to medium-weight units. Although there was little difference between the proportion of junior officers and senior officers who predicted that the Army would move to a medium-weight force, more senior officers were convinced that it was the right thing to do. Forty-eight percent of senior officers believed the Army should field medium-weight units, compared to only 38 percent of junior officers.

Officers were similarly unsure of whether being assigned to a medium-weight unit would enhance an officer's career prospects. Forty-eight percent of Army officers responded that they would advise a junior officer to serve in a Stryker Brigade Combat Team because it would enhance his career. However, 58 percent of officers tended toward uncertainty (responding 3, 4, or 5 on a scale from 1 to 7), with 30 percent "unsure" (responding 4 on a scale from 1 to 7). Moreover, the desirability of serving with an SBCT varied considerably depending on an officer's branch. Infantry officers saw posting to an SBCT as more desirable than armor officers, with 61 percent of infantry and 39 percent of armor officers responding positively to the statement. More senior officers (52 percent) saw such an assignment as beneficial than did junior officers (47 percent).

Army officers also saw a gap between what they believed was necessary to effect real transformation and what the Army was actually doing. Eighty-five percent felt that real transformation would require major changes to personnel management policies and procedures, but only 41 percent saw evidence of major changes to personnel management in the Army. Moreover, 60 percent tended toward uncertainty.²⁸ Similarly, 85 percent felt that real transformation would require major changes to military training and education, but only 48 percent saw evidence of major changes, while 63 percent were unsure.²⁹ In addition, 58 percent felt that training in the Army was not keeping pace with the introduction of technology, the highest level of agreement of any service.

In short, many Army officers we surveyed were supportive of the move from heavy to medium-weight forces. However, a significant part of the officer corps did not believe such change was warranted. The infantry appears more enthusiastic about transformation than armor branch officers. This is hardly surprising, as the formation of SBCTs would appear to have no

detrimental effect upon the infantry. By contrast, the move to medium-weight forces would appear to be a direct threat to the continuing role of heavy armored forces. Similarly, senior officers were more supportive than junior officers. Perhaps this was because they understood the need for change. Or perhaps they pay more attention to the Army leadership's rhetoric. Moreover, large majorities of officers had yet to see evidence that the Army was serious about transforming its personnel and education systems.

Organizational Climate

Although there is reason for supporters of transformation to be optimistic, there are also grounds for caution. Colonel Douglas A. Macgregor has argued that the officer corps is suspicious of "significant change and innovation that is not driven from above." Moreover, he feels that "the Army's internal insistence on homogeneity of thinking across the officer corps is an impediment to change. In fact, the dissension that genuine open discussion and debate would create is viewed as a threat to transformation to be avoided at all costs."³⁰

Our research found that many Army officers feel that their service is not fully supportive of innovation. Only 34 percent of the Army officers surveyed in 2002 felt their service rewards innovators, compared to 56 percent of Air Force and 58 percent of Marine Corps officers. Moreover, 65 percent of Army officers were unsure, suggesting they really hadn't seen a lot of innovation in their careers. Only 24 percent felt that officers who take innovative risks or try new approaches tended to get promoted as readily as those who do not, the lowest positive response of any of the services. Moreover, 66 percent were uncertain, again suggesting little contact with innovative risk-takers. Finally, 28 percent of Army officers believed that there were career penalties for being an innovator in their service, the highest such response of any service.

Many Army officers believed their service has a climate that is intolerant of criticism. Fifty-four percent responded that their superiors are not open to criticism of their initiatives or projects, the highest positive response of any service. In addition, 41 percent believed that an Army officer would put his career at risk if he were to criticize official doctrine and programs to his superiors, the second highest of any service.³¹

Many Army officers saw their service's culture as an impediment to innovation. Fifty-one percent argued that fear of failure inhibits true innovation in the Army, the highest percentage of any service. This view was most widely held among armor and aviation branch officers, 56 percent and 63 percent of whom agreed with the statement, respectively. And although 32 percent of Army officers disagreed with the statement, this was the lowest percentage of any service. Forty-eight percent felt that their branch of the

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Army had a culture that is open to self-criticism, and 61 percent were unsure.³² Again, there were significant branch differences. Although 45 percent of infantry and 56 percent of armor officers believed that their branch was open to self-criticism, 59 percent of aviation branch officers disagreed. By contrast, 75 percent of Marines felt that their branch of service was open to self-criticism, with 49 percent unsure.³³

Army officers did not feel well informed about developments within their service. Seven out of ten were unsure whether they knew what the Army was doing to explore new approaches to warfare, the highest level of uncertainty of any service. Moreover, senior officers felt they were only slightly better informed than their juniors. In part, this may flow from the fact that most Army officers do not read professional military publications. Only 36 percent of the Army officers we surveyed regularly read *Parameters*,³⁴ compared to 53 percent of all officers who read the National Defense University’s *Joint Force Quarterly* and 87 percent of Marines who read the *Marine Corps Gazette*.

Explaining Army Attitudes Toward Transformation

Our research revealed substantial support for change within the ranks of the Army. The Army officers we surveyed had largely bought into the service’s transformation plan, though hardly without reservation. Indeed, Army attitudes swung dramatically in favor of transformation between 2000 and 2002.

We can only hypothesize as to the causes of this shift. However, several trends appear to be at work. One is a growing awareness and acceptance of the Army’s transformation plan among Army officers. Although General Shinseki first articulated his vision of a medium-weight Army in late 1999, it clearly took time for that vision to spread. Over the past four years, the Army has consistently publicized its emphasis on medium-weight forces. Moreover, it has moved out smartly to make that vision a reality. It has published documents like *Concepts for the Objective Force* and the *Army Transformation Roadmap*. It also has fielded the first SBCT, deploying it to Iraq. Even such a seemingly minor change in the uniform regulations as the adoption of

the black beret served as a tangible sign of the service's commitment to change. As a result, most Army officers now believe that the Army will transform, even if they do not believe that it should transform.

Another determinant of Army attitudes may be the service's performance in Afghanistan. Although special operations forces and light units saw extensive action, it was yet another conflict in which heavy formations played no role. Operation Enduring Freedom once again demonstrated that the Army could not get heavy formations to the theater of operations quickly and may have bolstered support for transformation within the Army.

It is important to reemphasize that our most recent survey was conducted prior to Operation Iraqi Freedom. It is entirely possible that the war in Iraq triggered a significant shift in officer attitudes regarding transformation, particularly given the apparent utility of heavy armor and the reported difficulty of networking in the conflict. We plan additional surveys to explore this issue.

Not all the news for supporters of transformation is good, however. Although Army officers saw evidence of transformation when it comes to the organization of the Army, they perceived less change in the organization's culture. Many Army officers felt that their service was hostile toward innovation. Moreover, they believed that it had yet to reform significantly its personnel and educational systems. Advocates of transformation would be well advised to take these considerations into account.

Our research has several implications for those who seek to promote innovation within the Army. First, it appears that support for transformation is most pronounced in the lightest branches of the Army—the infantry and special forces. The Army's current transformation program in general, and the Stryker Force and Future Force in particular, would appear to benefit these communities. It might make sense to further empower these officers to promote transformation. Armor officers, by contrast, appear to be significantly more skeptical. In a broad sense, the shift from heavy to medium-weight forces is based upon assumptions with respect to information networking, communications, and long-range targeting that have yet to be demonstrated in combat. The experience of armor forces in the Middle East may indicate to armor officers that abandoning heavy armor protection on the battlefield could be a much higher risk than is appreciated by the other combat arms. In a personal and institutional sense, the armor branch would seemingly have the most to lose in a major shift away from heavy forces. For the individual officer it would appear to equate to a loss of opportunities for command and even promotion. As a result, it might make sense to develop strategies to increase support for transformation among armor branch officers.

Second, our research shows that there is still considerable uncertainty over the desirability of duty with an SBCT. However, the Stryker Force

plays a key role in Army transformation as a bridge to the Future Force. The Army needs to ensure that its best and brightest are attracted to service with the SBCTs, both to develop new concepts of operations and to get the officer corps to buy into medium-weight forces. It might therefore make sense to develop incentives to service in the SBCTs.

Third, any effort to transform the Army needs to address personnel management and education and training. The sweeping changes in organization that the Army's transformation plan envisions imply an alteration of Army career paths. Most officers have yet to see evidence of such innovations.

Fourth, there is clearly a need to address the Army's organizational culture. While the service has fostered a culture of innovation rhetorically, many officers do not see the Army as open to new ideas. Instead, they see their superiors as intolerant of criticism and possessing a zero-defect mentality. If the success of transformation is to be judged by changing organizational culture, as Secretary of Defense Rumsfeld has said,³⁵ then clearly the Army has its work cut out for it (as do all of the military services).

Finally, there is a need for a certain amount of patience. The evolution of Army attitudes toward transformation shows that it takes time for new ideas to spread to the broad officer corps. As a result, Army leaders must be persistent in both demonstrating the need for change as well as the benefits—both to the institution and to the individual—of transformation.

NOTES

For an elaboration of the authors' research data, see their monograph *The Limits of Transformation: Officer Attitudes Toward the Revolution in Military Affairs*, Newport Paper 17 (Newport, R.I.: Naval War College Press, 2003).

1. The Future Combat System (FCS) is to be a network of light—possibly unmanned—vehicles that would replace tanks and self-propelled artillery in medium-weight units. The Army envisions that the system will weigh no more than 20 tons (compared to the 70-ton M1A2 Abrams) to allow it to be transported aboard the Air Force's most numerous transport aircraft, the C-130. A recent General Accounting Office report also says that it is "to roll off combat ready and self-sustaining for 3 to 7 days," that it is to use the network to "gain information superiority, locate and identify the enemy, and kill at a distance before the enemy can engage [it]," and that it will use "advanced signature management and other techniques to avoid detection." US General Accounting Office, *Issues Facing the Army's Future Combat Systems Program*, GAO-03-1010R (Washington: GAO, 13 August 2003), p. 10.

2. US Army, *Army Transformation Roadmap* (Washington: Department of the Army, 2002), p. 10, http://www.army.mil/vision/Transformation_Roadmap.pdf.

3. See, for example, Rowan Scarborough, "Generals No Fans of Lighter Army," *Washington Times*, 30 May 2000, p. 1; Richard Hart Sinnreich, "The Limits of Lightness," *The Washington Post*, 26 September 2000, p. 27; Thomas E. Ricks and Roberto Suro, "The Wheels Turn in Army Strategy," *The Washington Post*, 16 November 2000, p. 1.

4. In particular, Stephen Peter Rosen has shown the importance of senior officers in providing professional support to proponents of change. Stephen Peter Rosen, *Winning the Next War: Innovation and the Modern Military* (Ithaca, N.Y.: Cornell Univ. Press, 1991), pp. 20, 251.

5. See also Thomas G. Mahnken and James R. FitzSimonds, *The Limits of Transformation: Officer Attitudes Toward the Revolution in Military Affairs*, Newport Paper 17 (Newport, R.I.: Naval War College Press, 2003); Thomas G. Mahnken and James R. FitzSimonds, "Revolutionary Ambivalence: Understanding Officer Attitudes toward Transformation," *International Security*, 28 (Autumn 2003).

6. The Naval War College (including the College of Naval Command and Staff and the College of Naval Warfare), Air Command and Staff College, Air War College, Army Command and Staff College, Army War

College, National War College, and National Defense University's Capstone Course for newly-promoted flag officers.

7. On the demographic characteristics of the survey group, see Mahnken and FitzSimonds, *The Limits of Transformation*, pp. 11-13.

8. Naval Postgraduate School, Air Command and Staff College, Army Command and General Staff College, Marine Corps Command and Staff College, School of Advanced Airpower Studies, School of Advanced Military Studies, School of Advanced Warfighting, Air War College, Army War College, Marine Corps War College, Naval War College, Industrial College of the Armed Forces, National War College, and Capstone Course. The survey population included 2,147 US and 188 foreign officers. It contained 76 O-3s, 1,520 O-4s, 586 O-5s, 123 O-6s, and 18 O-7s. It included 962 Army, 296 Navy, 877 Air Force, and 191 Marine Corps officers.

9. The first survey consisted of 36 statements and the second consisted of 97. Respondents were asked to agree or disagree with each on a scale of 1 to 7, where 1 indicated strong disagreement, 4 uncertainty, and 7 strong agreement. For analytical purposes, we considered answers of 1, 2, or 3 to indicate disagreement with the statement, and 5, 6, or 7 to indicate agreement. We also adopted two different measures of uncertainty: we considered answers of 4 to reflect genuine uncertainty, while those responses with values of 3, 4, and 5 were considered to be tending toward uncertainty.

10. Current Department of Defense regulations require officers to retire after 30 years of commissioned service unless selected as flag officers. If current regulations remain in force, then today's junior and field-grade officers, the largest proportion of the survey population, will be able to remain in uniform until 2020 to 2025. Some portion of this group will remain in the armed forces until 2025 to 2030.

11. Mahnken and FitzSimonds, *The Limits of Transformation*, p. 108.

12. Frank Bruni, "Bush Vows Money and Support for Military," *The New York Times*, 24 September 1999, p. A22.

13. David E. Sanger, "Bush Details Plan to Focus Military on New Weaponry," *The New York Times*, 14 February 2001, p. 1.

14. Sharon Weinberger, "Joint Force Critical for Transformation, Says Head of Rumsfeld Study," *Aerospace Daily*, 29 August 2001, p. 1.

15. Thomas Ricks, "Rumsfeld on High Wire of Defense Reform," *The Washington Post*, 20 May 2001, p. 1.

16. Department of Defense, *Quadrennial Defense Review Report* (Washington: Department of Defense, 30 September 2001).

17. President's remarks at The Citadel, Charleston, S.C., 11 December 2001, <http://www.whitehouse.gov/news/releases/2001/12/print/20011211-6.html>.

18. US Army, *Army Transformation Roadmap*, pp. 4-5.

19. *Ibid.*, p. 7.

20. Mahnken and FitzSimonds, *The Limits of Transformation*, pp. 45-60.

21. *Ibid.*, pp. 27-36.

22. There were, however, notable differences among members of different combat arms: 33 percent of armor officers, but only 20 percent of infantry officers and 11 percent of special forces officers, agreed with the statement.

23. US Army, *Army Transformation Roadmap*, p. 8.

24. It is worth noting that the statement was phrased somewhat differently in the 2000 survey: "Future adversaries will be able to use long-range precision strike weapons such as ballistic and cruise missiles to destroy fixed military infrastructure, such as ports, airfields, and logistical sites." While this phrasing may account for some of the shift, it is hard to see how it could account for its magnitude.

25. C4ISR is an acronym for "command, control, communications, computers, intelligence, surveillance, and reconnaissance."

26. US Army, *Army Transformation Roadmap*, p. 7.

27. Douglas A. Macgregor, *Transformation Under Fire: Revolutionizing How America Fights* (New York: Praeger, 2003), pp. 19-20.

28. Where the percentages add up to more than 100, see note 9 for an explanation of how the data were reported and interpreted, particularly with respect to respondents being "uncertain" or "unsure."

29. *Ibid.*

30. Macgregor, pp. 20-21.

31. Forty-two percent of Navy officers agreed with the statement.

32. See note 28.

33. *Ibid.*

34. *Parameters* is distributed principally to Army War College students and graduates, officers in the ranks of lieutenant colonel and above.

35. Donald H. Rumsfeld, *Annual Report to the President and Congress* (Washington: Department of Defense, 2003), p. 65.