

To Build Resilience: Leader Influence on Mental Hardiness

by Paul T. Bartone, Charles L. Barry, and Robert E. Armstrong

Overview

The military profession is inherently stressful and is getting more so for U.S. troops, who are deploying more often and for longer periods of time on missions that are multifaceted, changeable, and ambiguous. Such stressful conditions can lead to a range of health problems and performance decrements even among leaders. But not everyone reacts in negative ways to environmental stress. Most people remain healthy and continue to perform well even in the face of high stress levels. While much attention in recent years has focused on identifying and treating stress-related breakdowns such as post-traumatic stress disorder, scant investment has gone toward the study of healthy, resilient response patterns in people.

This paper focuses attention on mental hardiness, an important pathway to resilience. Research over the past 25 years has confirmed that psychological hardiness is a key stress-resilience factor. People who show high levels of psychological hardiness exhibit greater commitment (the abiding sense that life is meaningful and worth living), control (the belief that one chooses and influences his or her own future), and acceptance of challenge (a perspective on change in life as something that is interesting and valuable). We begin with an essential first step: clarifying the major stress factors that are salient in modern military operations. Next, we give a brief summary of the theory and research behind the hardiness construct. Finally, we provide a number of suggestions for how to increase hardiness and stress resilience in organizations, primarily through leader actions and policies. By setting the conditions that increase mental hardiness, leaders at all levels can enhance human health and performance, while preventing many stress-related problems before they occur.

Psychological Stress Factors in Modern Military Operations

The military occupation exposes its members to a wide range of stressors. Combat-related stressors are the most obvious and extreme ones and garner the most attention,¹ but military operations in the post-Cold War era entail a wide range of challenges and potential stress factors.² The numbers of peacekeeping, peacemaking, humanitarian, and other kinds of operations have increased dramatically, while military force levels have not kept pace with demand.³ Partly as a result of substantial 1990s force reductions, deployments are more frequent and longer in duration than in times past, especially for U.S. Army personnel. This in turn has brought other changes in military units, including more training exercises, planning sessions, and equipment inspections in preparation for deployment. All these factors add to the workload and pace of operations on the home front.⁴ More intense work schedules and frequent deployments also force more family separations, a well-documented stressor for Servicemembers.⁵

One possible avenue for reducing the stress associated with military operations is to lessen the frequency and duration of deployments. Unfortunately, strategic imperatives and troop shortages may prevent this. The military is not alone in this regard; the same is true (at least at times) in other occupations and contexts. For example, following the 9/11 terrorist strike on the World Trade Center, fire, police, and other emergency personnel maintained continuous operations around the clock with the goal of locating possible survivors, as well as restoring essential services to the affected areas. In another example, thousands of disaster response workers were involved in rescuing victims and restoring basic services in New Orleans following Hurricane Katrina in August 2005. In such crisis situations, continuous operations and extreme efforts are necessary to save lives; easing the pace of work may be considered unacceptable or even unethical. However, when operations become long-term, workload requirements

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should be realigned with what the existing workforce can reasonably sustain. Though what forces can sustain is a lot—perhaps much more than they know—leaders should still be aware of limits and know how to preserve their forces as they approach the outer thresholds of mental endurance.

What can be done to mitigate or counter the stressors associated with military operations? To answer this question, it is important to begin with a clear picture of the nature of the stressors encountered by military personnel on modern deployments. This understanding requires going beyond simple lists of items or events that may be perceived as stressful to get to more basic underlying dimensions. Extensive field research with deployed U.S. military units led to the identification of five primary psychological stress dimensions associated with modern military operations: isolation, ambiguity, powerlessness, boredom, and danger.⁶ Today, with the greatly increased frequency and pace of deployments for U.S. forces and the long work periods involved, an additional significant stress factor should be added to the list: workload or operations tempo. These dimensions are summarized in table 1.

Isolation

Operational deployments typically are to remote areas, far from home and families. Reliable methods for communicating with home are often lacking. Email is usually unavailable, and traditional mail can be sporadic and take weeks to deliver. Most of the usual stress-relieving activities, such as exercise, athletics, sports, television, movies, and games are not available. Although most deployed soldiers will know each other because of the Army’s current reliance on unit rotation policies, there will still be some individual replacements due to casualties and other unexpected depletions of essential unit strength. For these individuals, the initial stress of social isolation can be more acute as they attempt to fit into an established group of friends. Also, in many cases a deploying unit is configured as a task force tailored for a specific mission, which means many members are strangers who have not worked together previously. Security and operational concerns often generate movement restrictions (for example, when troops are restricted from leaving their base camp). Troops may also be banned from interacting with the local populace and prevented from participating in such familiar activities as jogging for exercise or displaying the American flag. Frequently, there are also multiple constraints on dress and activities. Troops have few choices in their daily existence. Movement and communication restrictions also deter troops from learning about local culture and language and about resources that might be available locally. All of these factors contribute to a sense of social isolation.

Ambiguity

In modern military operations, a unit’s mission, rules of engagement, and situation are often unclear to the Servicemember and can require rapid role changes. In the late 1990s, Marine Corps Commandant General Charles Krulak described this mix as a “three-block

Table 1. Primary Stressor Dimensions in Modern Military Operations

Stressor	Characteristics
Isolation	Remote location Foreign culture and language Far from family/friends Unreliable communication tools Newly configured units with unfamiliar coworkers
Ambiguity	Unclear/changing mission Unclear rules of engagement (ROE) Unclear command/leadership structure Role confusion Unclear norms, standards of behavior
Powerlessness	Movement restrictions ROE constraints on response options Policies prevent intervening, providing help Forced separation from local culture, people, events, places Unresponsive supply chain—trouble getting needed supplies/repair parts Differing standards of pay, movement, behavior for different units in area Indeterminate deployment length Do not know/cannot influence what is happening with family at home
Boredom (alienation)	Long periods of repetitive work activities without variety Lack of work that can be construed as meaningful, important Overall mission/purpose not understood as worthwhile or important Few options for play, entertainment
Danger (threat)	Real risk of serious injury or death from: ▪ enemy fire, bullets, mortars, mines, explosive devices ▪ accidents, including “friendly fire” ▪ disease, infection, toxins in the environment ▪ chemical, biological, or nuclear materials used as weapons
Workload	High frequency, duration, and pace of deployments Long work hours/days during the deployments Long work hours/days before and after deployments

war” in reference to the need for Marines (and Soldiers) to be able to conduct full-scale military action, peacekeeping operations, and humanitarian relief within the space of three contiguous city blocks, sometimes engaging in two or all three roles on the same day.⁷ It can be hard for soldiers to quickly shift to different rules of engagement (Do I knock on the door, or kick it down?). Mental judgment cannot be instantly reprogrammed or fully divorced from emotions. The role and purpose of military personnel can be ambiguous in these conditions. Also, the command structure is not always clear, a situation that arises, for example, when support units are realigned to different combat units because of changing operational conditions. Another factor adding to ambiguity is insufficient knowledge of host nation language and cultural practices, although predeployment training may provide

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some basic information in this area. Furthermore, there may be a lack of knowledge regarding the military contingents of allies, as well as the status and authority of contractors (in particular, paramilitary security forces or private security contractors) in a multinational coalition force. In counterinsurgency operations, troops often face continuing uncertainty regarding who is an enemy and who is an innocent civilian. All of this contributes to a highly ambiguous environment.

Powerlessness

Related to ambiguity is the sense of powerlessness to bring clarity or to exercise control over one's own destiny on a day-to-day basis. Troops may wonder, for example, "When will we be back from patrol?" "When will we move out again?" "Will I be able to meet my wife on leave when I was told (and told her)?" "Will our unit go home when we were told we would?" Soldiers and small unit leaders are often equally powerless to alter the mission conditions. In hierarchical military organizations, there is always some sense of powerlessness that increases the farther down the institutional hierarchy one goes. Limitations on soldiers' movements and activities, already noted as a stress factor in terms of accentuating isolation, may not be readily understandable if the local situation appears benign and soldiers from other coalition countries, or even U.S. civilians, are not so restricted. Servicemembers have little power to change the rules under which they are governed.

Another contributing element can be the soldiers' sense of being helpless to assist or improve the lot of the local population. They may see local people in need of help—wounded, ill, hungry—but be unable to provide needed assistance due to restrictive rules of engagement, lack of supplies, or operational or political considerations. For example, operational requirements to keep the unit moving can interfere with establishing relationships of trust with the local population and community leaders. Returning time and again to the same location to reestablish security or perform some other mission such as interdicting or destroying illicit drugs further adds to the sense of being unable to solve the problem or complete the mission. All of this contributes to a potentially damaging sense of powerlessness—that one has little control over the surrounding environment.⁸

Boredom

Modern military missions frequently involve long periods of "staying in place" without much real work to do. A related situation is long periods of strenuous patrolling in areas where there is no enemy activity and no civilian population. As the weeks and months crawl by, a feeling of boredom grows. At a superficial level, boredom can be countered with more entertainment and sports activities. But the real problem of boredom is due not to a lack of activities, but to the perceived lack of meaningful work or constructive activities to engage in. Daily tasks can take on a repetitive dullness, with a sense that nothing important is being accomplished. This can be especially disturbing when the daily tasks are arduous, sustained, and unpleasant, such as patrolling in rugged terrain and bad weather with heavy combat loads, and without any evidence of recent enemy presence. Troops can easily regress from a high state of alertness to rote marching, daydreaming of home, or focusing on their current discomforts. When enemy action does come, such troops are often caught by surprise and

experience higher casualties. Yet keeping troops alert for days, weeks, or even months without enemy contact is a very difficult leadership challenge.⁹

Danger

This dimension encompasses the real physical dangers and threats that can result in injury or death that are often present in the deployed environment. Bullets, mines, bombs, or other hazards in the deployed setting are included, as well as the risk of accidents, disease, and exposure to toxic substances. One of the most troublesome threats has long been what is known as indirect fire from aircraft, artillery, or mortars—the inability to see the enemy and therefore be able to take some action to stop the attack adds to the problem. Often troops are not even sure whether moving away merely makes them a more likely target. In current U.S. and coalition operations in Iraq and Afghanistan, similar hidden dangers take the form of suicide bombers, snipers, and improvised explosive devices. The danger can be direct, posing a threat to the individual soldier, or indirect, representing a threat to his or her comrades. Exposure to or attending to severely injured or dead people, and the psychological distress this can bring, also adds to the sense of danger.

Workload

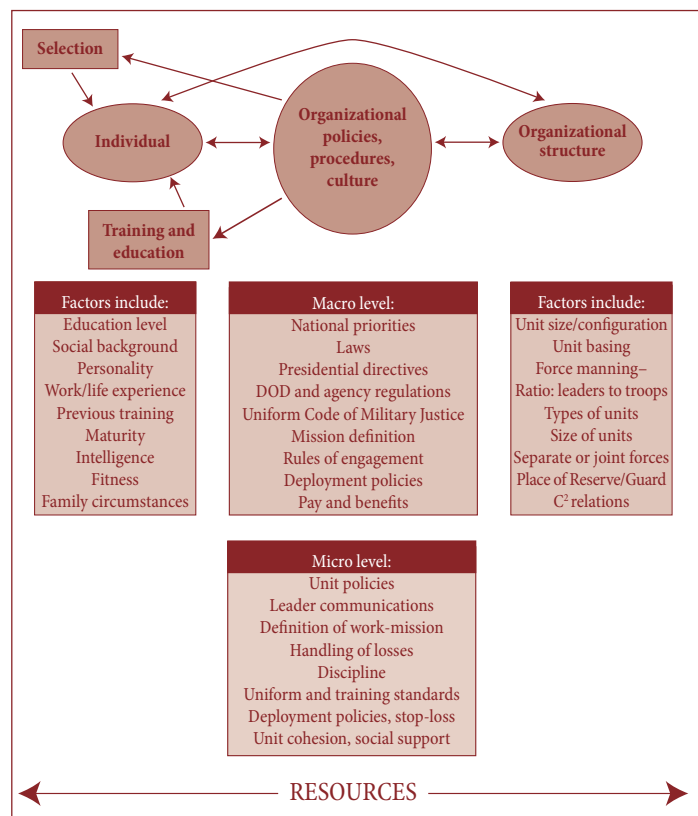
At the macro level, this factor represents the increasing frequency and duration of deployments that many military units are experiencing. Even as units redeploy home, they are already scheduled for their next deployment, sometimes 1 or 2 years into the future. At a more immediate level, most deployments are characterized by a 24/7 work schedule, on which soldiers are always on duty, with little or no time off. Work-related sleep deprivation is common in the deployed environment. Training and preparation activities in the period leading up to a deployment also usually entail a heavy workload and extremely long days. The same is generally true for military units returning home from a deployment, who must work overtime to assure that all vehicles and equipment are properly cleaned, maintained, and accounted for. Often, this means that anticipated family time gets truncated or sacrificed altogether.

Understanding these key sources of stress makes it possible to develop more focused and effective mitigation approaches. While training at the individual level to increase stress resilience is possible and can certainly help, it is important to remember that many other factors at various levels also influence resilient responding to work-related stress.¹⁰ Figure 1 lists some of these factors at the individual, organizational policy, and organizational structure levels.

Individual factors that are relevant for selection and training include social background, personality (including psychopathology), previous experience and education, maturity, intelligence, physical fitness, and family circumstances.

Organizational policies, or how the organization and its members respond to challenging or stressful events, also can exert an important influence on resilience. Here it is useful to distinguish between macro-level policies, such as agency rules, regulations, and directives, mission statements, deployment and rotation policies, and rules of engagement, and micro-level policies, such as small unit policies, leader directives and communications, and training schedules and policies. At the same time, it is important to recognize that some (but not all) micro-level

Figure 1. Factors That Influence Resiliency



policies and procedures are influenced rather directly by macro-level policies and standards.

Organizational structural factors have an influence on how the military organization responds to challenges as well. The size, type, and configuration of units may be more or less appropriate for the demands of the environment at a particular time. Other structural considerations include where units are based and how they are staffed or manned, the ratio of leaders to troops, and the integration of National Guard and Reserve forces, as well as joint and coalition forces. The integration issue applies in the context of both specific missions and extended alliances (such as the North Atlantic Treaty Organization International Security Assistance Force in Afghanistan). The arrows in figure 1 serve as a reminder that these different major factors interact and influence each other as well. For example, organizational policies clearly influence (and in some cases determine) structures, while existing structures, force levels, and types have an influence on policies that are developed and implemented regarding their utilization. Structures and policies have an influence on individuals in myriad ways—as, for example, when force structures and rotation policies determine when and for how long an individual will be deployed. The line labeled *resources* at the bottom of figure 1 is meant to indicate that all of these factors—individual, organizational policies, and organizational structures—are influenced importantly by resource considerations. Budgets are limited, and what is done in any area depends to some degree on available time and money.

What tools, strategies, or coping mechanisms can be applied in order to increase resilience or resistance to these stressors, both at the individual and unit levels? We focus below on the psychological style known as mental hardiness and discuss how leaders can

leverage this construct to increase individual and group resilience under stress.

Mental Hardiness

The “hardiness” construct, first described by Suzanne Kobasa in 1979, provides valuable insight for understanding highly resilient stress response patterns in individuals and groups. Conceptually, hardiness was originally seen as a personality trait or style that distinguishes people who remain healthy under stress from those who develop symptoms and health problems.¹¹ Hardy persons have a high sense of life and work commitment and a greater expectation of control, and are more open to change and challenges in life. They tend to interpret stressful and painful experiences as a normal aspect of existence, a part of life that is overall interesting and worthwhile. While early tools for measuring hardiness had a number of problems,¹² these have been addressed, and there are now several excellent, reliable, and valid instruments for assessing the hardiness construct.¹³

Although hardiness is relatively stable over time and across situations, there is good evidence that hardiness levels can be increased as a result of experiences and training.¹⁴ So it is better to think about hardiness not as an immutable trait, but rather as a generalized style of functioning that continues to be shaped by experience and social context. It includes cognitive, emotional, and behavioral features, and characterizes people who stay healthy under stress in contrast to those who develop stress-related problems. The hardy-style person is courageous in the face of new experiences as well as disappointments, and tends also to have a strong sense of self-efficacy or personal competence.¹⁵ The high hardy person, while not immune to the ill effects of stress, is robust and resilient in responding to stressful conditions.

The concept of hardiness is theoretically grounded in the work of existential philosophers and psychologists, including Martin Heidegger, Ludwig Binswanger, and Viktor Frankl. It involves the creation of meaning in life, even life that is sometimes painful or absurd, and having the courage to live life fully despite its inherent pain and futility.¹⁶ It is a generalized cognitive framework that affects how one views the self, others, work, and even the physical world. In existential terms, this is the *Eigenwelt*, the self or “I” world, the *Mitwelt*, the “with” or social world, and *Umwelt*, the “around” or physical world. In 1967, Salvatore Maddi outlined an early form of the hardy personality type and contrasted it with the nonhardy “existential neurotic.”¹⁷ He used the term *ideal identity* to describe the person who lives a vigorous and proactive life, with an abiding sense of meaning and purpose, and a belief in his own ability to influence things.

Since the appearance of Kobasa’s original 1979 report on hardiness and health in executives, an extensive body of research has accumulated supporting the hypothesis that hardiness protects against the ill effects of stress on health and performance. Studies with a variety of occupational groups have found that hardiness operates as a significant moderator or buffer of stress.¹⁸ Hardiness has also been identified as a moderator of combat exposure stress in Gulf War soldiers.¹⁹ Psychological hardiness has emerged as a stress buffer in other military groups as well, including Army casualty assistance workers,²⁰ peace-keeping soldiers,²¹ Israeli soldiers in combat training,²² Israeli officer candidates,²³ and Norwegian navy cadets.²⁴ Studies have found that troops who develop post-traumatic stress disorder (PTSD) symptoms following exposure to combat stressors are significantly lower in har-

diness than those who do not develop PTSD.²⁵ Under low-stress conditions, troops high in hardiness report about the same level of PTSD symptoms as those low in hardiness. However, under high-stress conditions, those high in hardiness report significantly fewer PTSD symptoms than those low in hardiness (see figure 2). These results provide additional evidence that those who are high in the qualities of hardiness are more resistant to the ill effects of operational stress.

Leader Influence on Mental Hardiness

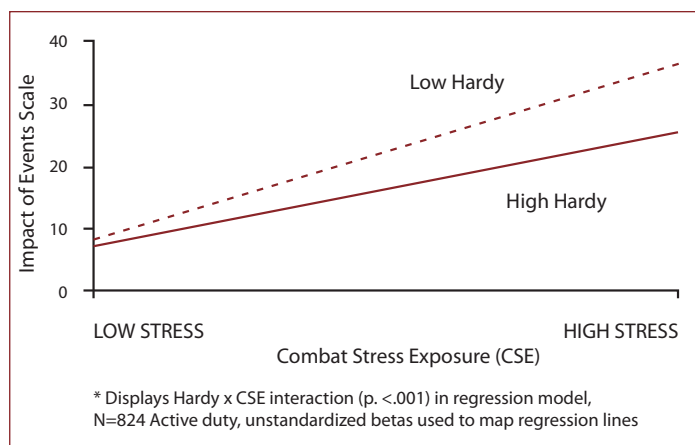
How does hardiness increase resilience to stress? While the underlying mechanisms are still not fully understood, a key aspect of the hardiness resilience process involves the meaning that individuals attach to events around them and to their own place in the world of experience. High hardy people typically interpret life experience as overall interesting and worthwhile, something they can exert control over, and challenging, that is, presenting opportunities to learn and grow.

The power of hardiness to mitigate stressful experiences is related to the positive interpretations or framings of such experiences the hardy person typically makes. If a stressful or painful experience can be cognitively framed and made sense of within a broader perspective that holds that all of existence is essentially interesting, worthwhile, fun, a matter of personal choice, and providing valuable opportunities to learn and grow, then the stressful experience can have beneficial psychological effects instead of harmful ones.²⁶ Additionally, the high hardy person is more accepting or “forgiving” of a certain amount of disruption or pain as part of existence, and prefers to look to the future rather than dwell on the past.

In organized work groups such as military units, this “meaning-making” process is something that can very likely be influenced by leader actions and policies. Military units by their nature are group-oriented and highly interdependent. Common tasks and missions are group actions, and the hierarchical authority structure frequently puts leaders in a position to exercise substantial control and influence over subordinates. By the policies and priorities they establish, the directives they provide, the advice and counsel they offer, the stories they tell, the amount of accurate and timely information they disseminate, and perhaps most importantly the examples they set, leaders can alter the manner in which their subordinates interpret and make sense of experiences. In these ways leaders may, for example, better prepare subordinates—perhaps subordinate leaders in particular—for their first combat engagement. Such leader policies and actions may also better protect against the buildup of postengagement stress or even PTSD.

Many authors have commented on how social processes can influence the creation of meaning by individuals, in positive or negative directions. For example, Irving Janis coined the term *groupthink* to describe how people in groups can come to premature closure on issues, with multiple individuals conforming to whatever is the dominant viewpoint in the group.²⁷ Similarly, Karl Weick discusses the process by which organizational policies and programs can influence how individuals within the organization “make sense” of or interpret their experiences, particularly at work.²⁸ For example, meetings and discussions at work provide key opportunities for shared “framing” of experience and sensemaking. Peers, leaders, and entire work units or organizational cultures can influence how experiences get interpreted. But leaders are particularly influential.

Figure 2. Gulf War Combat Stress Exposure in Low and High Hardy Soldiers*



Leaders who are high in hardiness and understand the value of the kinds of frames they use for making sense of experience can encourage those around them to process stressful experiences in ways characteristic of high hardy persons. In a small group context, leaders are in a unique position to shape how stressful experiences are understood by members of the group. Leaders who are high in hardiness likely have a greater impact in their groups under high-stress conditions, when by their example, as well as by the explanations they give to the group, they encourage others to interpret stressful events as interesting challenges that can be met, and in any case provide opportunities to learn. This process itself, as well as the positive result (a shared understanding of the stressful event as something worthwhile and beneficial) could be expected to also generate an increased sense of shared values, mutual respect, and cohesion. Further support for this interpretation comes from a study showing that hardiness and leadership interact to affect small group cohesion levels following a rigorous military training exercise.²⁹ This interaction effect signifies that the positive influence of leaders on the growth of unit cohesion is greater when hardiness levels in the unit are high. This suggests that effective leaders increase group solidarity or cohesion at least in part by encouraging positive shared interpretations of stressful events when they occur.

As an example of the kind of leadership that can foster hardy-resilient response patterns throughout a unit, consider the case of a U.S. Army company commander of a Patriot missile–air defense artillery unit in Southwest Asia that was nearing the end of a 6-month deployment shortly after the first Gulf War.³⁰ The mission was to be prepared to shoot down any Scud missiles that might be launched from Iraq. There had been no missiles, and the mission had become rather dull and boring. A research team found that morale and cohesion levels were quite low throughout the battalion. But surprisingly, one company/battery stood out as different from the rest, reporting very high morale and cohesion levels. This was the Headquarters and Maintenance Company. Further investigation revealed that shortly after arriving in theater, the company commander had set a major task for the unit, one that provided a common goal and a tangible mission to work on during their 6 months in the desert. He had heard about a large area nearby that had been used as an equipment dump after the Gulf War. There, several tons of discarded equipment and parts were buried in the sand, rusted and dirty. The commander set for his

Table 2. Leader Actions to Foster Mental Hardiness: Commitment

How to Build Commitment	How to Destroy Commitment
■ Support troops’ attempts to give their own ideas; use their skills and talents to get tasks accomplished ■ Give recognition, awards, praise for accomplishments ■ Plan teamwork-/cohesion-building activities ■ Provide meaningful tasks where progress is visible ■ Support individual development (such as schools, distance learning) ■ Be fair; do not show favoritism ■ Spend time with troops ■ Share hardships with troops ■ Provide information about what you are doing and why	■ Do not look for feedback, input ■ Criticize and denigrate initiative ■ Be self-absorbed and self-promoting ■ Live apart and take special privileges for yourself ■ Be unfair or stingy with rewards, recognition, benefits ■ Avoid direct interactions with troops ■ Provide information to only a limited few ■ Show favoritism ■ Show no interest in troops’ individual aspirations ■ Impose undue travel and local contact restrictions

unit the task of excavating the dump and recovering, cleaning, and repairing as much equipment as possible over the course of their deployment. Five months later, they had salvaged over \$1 million worth of equipment that was returned to the Army supply system in good working order. Prominently displayed on the walls of their company work area and meeting room were large before-and-after photographs of the equipment dump, which the Soldiers had also rebuilt into a multisport athletic field. In interviews, all unit members spoke with great pride about this feat and of having saved considerable taxpayer dollars.

This illustrates how a proactive, committed, high hardy leader can mobilize an entire work group in the direction of greater hardiness and stress resilience. The company commander asserted creative control under ambiguous conditions and sought out and found a meaningful, albeit secondary, mission for his unit. Without compromising the primary mission (maintaining the equipment and resources of the battalion), he created a major meaningful task, one that was challenging, that they could “get their arms around” and exercise control over. He was enthusiastic and worked right alongside his Soldiers in the dump, helping them develop a shared sense of commitment to the task. Soldiers were also involved in planning the job, building a sense of commitment and control. The task was challenging, but with a clear goal, and one that could be accomplished within the 6-month deployment period. The commander also understood the importance of recognition and made sure that Soldiers received awards as well as military media attention for their accomplishments. Recognition in media such as the *Stars and Stripes* newspaper, as well as from senior leaders such as the Sergeant Major of the Army, further reinforced the sense of commitment and positive meaning within the unit, a shared belief that what they had done was important and valuable. While other units in the same battalion grew more alienated, bored, and powerless over the course of the deployment, one insightful and resilient leader showed how psychological hardiness—commitment, control,

Table 3. Leader Actions to Foster Mental Hardiness: Control

How to Build Control	How to Destroy Control
■ Provide tasks that are challenging but within soldiers’ capabilities to achieve ■ Establish graduated training programs: crawl—walk—run ■ Provide resources and time needed to accomplish goals ■ Set achievable standards ■ Build on success; seek short-term wins to build on	■ Give too many tasks for available time ■ Give too difficult tasks for skill levels ■ Criticize and punish for failure ■ Do not listen to feedback ■ Do not provide needed resources

and challenge—could be increased within his part of the organization. This example shows how a high hardy leader can influence the entire unit toward more hardy interpretations of experience, and the positive, resilient reactions that can follow.

Summary and Recommendations

The military is a high-risk, high-stress occupation. To reduce stress-related performance and health problems, it is important to work preventively to build up resilience and stress resistance of individuals and groups. This paper identifies the key underlying stress factors in complex military operations, and utilizes the concept of psychological hardiness to show how leaders can foster positive, resilient responding throughout their organizations. Efforts to increase resilience should span leader actions as well as organizational policies and programs.

Recommendations for Leaders

In work groups such as the military, where individuals are regularly exposed to a range of stressors and hazards, leaders are in a unique position to shape how stressful experiences are processed, interpreted, and understood by members of the group. The leader who by example, discussion, and established policies communicates a positive construction of shared stressful experiences exerts a positive influence on the entire group in the direction of his or her interpretation of experience—toward more resilient and hardy sensemaking. Leaders can increase mental hardiness and resilient responding in several ways:

- Set a clear example, providing subordinates with a role model of the hardy approach to life, work, and reactions to stressful experiences. Through actions and words, demonstrate a strong sense of commitment (see table 2), control (see table 3), and challenge (see table 4), responding to stressful circumstances with an attitude that says stress can be valuable, and that stressful events always at least provide the opportunity to learn and grow.
- Facilitate positive group sensemaking of experience, in how tasks and missions are planned, discussed, and executed, and also as to how mistakes, failures, and casualties are spoken

about and interpreted. For example, do we accept responsibility for mistakes and seek to learn from them, or do we blame others and avoid responsibility (and learning)? Leaders build resilience by setting high standards, while addressing shortfalls and failures as opportunities to learn and improve. While most of this “sensemaking” influence occurs through normal day-to-day interactions and communications, it can also happen in the context of more formal after-action reviews, or debriefings that focus attention on events as learning opportunities, and create shared positive constructions of events and responses around events.³¹

- Seek out (and create if necessary) meaningful and challenging group tasks, and then capitalize on group accomplishments by providing recognition, awards, and opportunities to reflect on and magnify positive results (such as photographs, news accounts, and other tangible mementos).
- Through example and policies, communicate a high level of respect and commitment for unit members. This fosters a strong sense of commitment to the surrounding social world, or *Mitwelt*.
- Anticipate high-stress events such as deployments and combat, taking opportunities beforehand to build mental hardiness among subordinates, especially subordinate leaders, by sharing experiences, imparting sensemaking skills, and focusing on organizational cohesion.

Recommendations for Organizations

While leadership is important, other factors also influence how individuals make sense of experiences, as well as what leaders can realistically do in this regard. Organizational policies and regulations can not only increase or decrease stress levels, but can also influence commitment, control, and challenge aspects of the hardy-resilient response pattern. Organizations wishing to increase resilience should consider the following:

- Given the importance of leadership in reducing stress among military personnel of all Services, steps should be taken to identify and select high hardy leaders as well as provide optimal reinforcement of hardiness in all leaders. The result should be leaders, especially at lower echelons where operational stress is a more persistent factor, who understand how to better maintain their own personal mental hardiness as well as how to enhance the hardiness of their subordinates for handling operational stress.
- All commissioned, warrant, and noncommissioned officer training and education programs should be reviewed to determine how they contribute to resilience under the stress of complex operations. If there are gaps in this area, and there likely are, they should be closed. Relevant institutions (such as the National Defense University) could collaborate on best practices and teaching materials with the goal of including the most effective programs in the curricula of all leader education institutions.
- Military services should develop policies that emphasize the importance of mental hardiness in leaders as well as those being led. Such policies would assist current leaders at all levels in maintaining the hardiness of their units under stress. This would be most critical for forces engaged in land operations—

Table 4. Leader Actions to Foster Mental Hardiness: Challenge

How to Build Challenge	How to Destroy Challenge
■ Always emphasize value of change for learning ■ Incorporate surprises and variation into schedules ■ Model enjoyment, fun in variety ■ Be willing to change the plan to meet changing circumstances ■ Treat failures as chance to learn	■ Avoid change or surprises at all cost ■ Never take a risk ■ Restrict innovation and experimentation by requiring rules and permission for everything ■ Never change the schedule ■ Blame others for mistakes and failure ■ Denigrate others for failure

mainly the Army, Marines, and special operations forces. Command information programs are one means to rapidly address this key topic. The use of awards and public recognition are other tools commanders can use to reinforce hardiness.

In addition to these leader actions, organizational policies, and training and education efforts, a critical part of the solution over the long term must be to reduce the workload or operations tempo stressors that are now straining the response capability of both leader and led. That means reducing the number of deployments and finding a more sustainable length-of-tour standard. These solutions will require a better balance of force structure to missions and a closer look at the adequacy of high demand force strength. It also means pondering the future role of Reserve and Guard forces in terms of the added stress factor of leaving an entirely separate professional life when called to Active duty.

Immediate steps to improve the resilience of individuals can help in the near term, and better education and training will help in the mid term. However, the longer term solution for a volunteer force must include adjusting the mission demands on our human capital to levels that allow for sustained resilient responses and performance over time. It is only by addressing the challenge at multiple levels, including the system level, that we can build a force with the needed psychological strength to withstand the varied stressors of current and future complex operations.

Notes

¹ As, for example, in David H. Marlowe, “The Human Dimensions of Battle and Combat Breakdown,” in *Military Psychiatry*, ed. R. Gabriel (Westport, CT: Greenwood Press, 1986), 7–24. More recently, the same emphasis on combat exposure as the primary factor influencing symptoms is seen in Charles W. Hoge et al., “Combat Duty in Iraq and Afghanistan, Mental Health Problems, and Barriers to Care,” *New England Journal of Medicine* 351 (July 1, 2004), 13–22. While exposure to combat stressors no doubt contributes to the range of negative reactions, it still leaves most of the variance in symptoms unexplained. See Mark Miller et al., “Structural Equation Modeling of Associations among Combat Exposure, PTSD Symptom Factors, and Global Assessment of Functioning,” *Journal of Rehabilitation Research and Development* 45 (2008), 359–370. Clearly, then, other factors besides combat exposure must be influencing PTSD symptoms.

² See Gerald P. Krueger, “Contemporary and Future Battlefields: Soldier Stresses and Performance,” in *Performance under Stress*, ed. Peter A. Hancock and James L. Szalma (Aldershot: Ashgate Publishing, Ltd., 2008), 19–44.

³ For an excellent discussion of the range of demands placed on modern military forces engaged in operations such as in Afghanistan, and the need for rapid and flexible adaptation, see Julian D. Alford and Scott A. Cuomo, “Operational Design for ISAF in Afghanistan: A Primer,” *Joint Force Quarterly* 53 (2^d Quarter 2009), 92–98. See

also Terry J. Pudas and Catherine Theohary, "Reconsidering the Defense Department Mission," in *Civilian Surge: Key to Complex Operations*, ed. Hans Binnendijk and Patrick M. Cronin (Washington, DC: National Defense University Press, 2009), 65–92.

⁴ Carl Castro and Amy Adler, "OPTEMPO: Effects on Soldier and Unit Readiness," *Parameters* 29 (1999), 86–95.

⁵ Bruce Bell et al., "USAREUR Family Support during Operation Joint Endeavor: Summary Report," Special Report 34 (Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences, 1997).

⁶ While these are identified as primary stress dimensions in modern military operations, they are not unique to the military. The same factors have been found in other fields. However, research confirms they are the fundamental stress dimensions seen among those engaged in recent military actions in Iraq, Afghanistan, and elsewhere. These dimensions were originally identified based on field research with U.S. soldiers deployed to Croatia, Bosnia, Kuwait, and Saudi Arabia from 1993 through 1996. Research included extensive field interviews, observations, and questionnaires. See Paul T. Bartone, "Psychosocial Stressors in Future Military Operations," paper presented at the Cantigny Conference Series on Future of Armed Conflict, Wheaton, IL, June 2001; also Paul T. Bartone, Amy Adler, and Mark A. Vaitkus, "Dimensions of Psychological Stress in Peacekeeping Operations," *Military Medicine* 163 (1998), 587–593.

⁷ See Charles C. Krulak, "The Strategic Corporal: Leadership in the Three Block War," *Marine Magazine* (January 1999).

⁸ Other studies have also identified powerlessness as a damaging influence for soldiers on peacekeeping operations. For example, Lars Weisaeth and A. Sund found that in Norwegian soldiers serving in Lebanon under the United Nations Interim Force in Lebanon peacekeeping mission, the feeling of being powerless to act or intervene when witnessing some atrocity was a main contributor to post-traumatic stress symptoms. See Lars Weisaeth and A. Sund, "Psychiatric Problems in UNIFIL and the U.N. Soldier's Stress Syndrome," *International Review of the Army, Navy, and Air Force Medical Services* 55 (1982), 109–116.

⁹ This challenge for leaders is addressed at greater length by Peter A. Hancock and Gerald P. Krueger, "Hours of Boredom—Moments of Terror: The Issue of Temporal Desynchrony in Military Operations" (forthcoming).

¹⁰ See George A. Bonanno, "Loss, Trauma and Human Resilience: Have We Underestimated the Human Capacity to Thrive after Extremely Aversive Events?" *American Psychologist* 59 (2004), 20–28; also E. Cameron Ritchie et al., "Improving Individual Resiliency and Hardiness," in *Interventions Following Mass Violence and Disasters: Strategies for Mental Health Practice*, ed. E.C. Ritchie, M.J. Friedman, and P.J. Watson (New York: Guilford, 2006).

¹¹ Suzanne C. Kobasa, "Stressful Life Events, Personality, and Health: An Inquiry into Hardiness," *Journal of Personality and Social Psychology* 37 (1979), 1–11; Salvatore R. Maddi and Suzanne C. Kobasa, *The Hardy Executive* (Homewood, IL: Dow Jones-Irwin, 1984).

¹² See Steven C. Funk and B. Kent Houston, "A Critical Analysis of the Hardiness Scales' Validity and Utility," *Journal of Personality and Social Psychology* 53 (1987), 572–578; Steven C. Funk, "Hardiness: A Review of Theory and Research," *Health Psychology* 11 (1992), 335–345.

¹³ See Paul T. Bartone et al., "Personality Hardiness Predicts Success in U.S. Army Special Forces Candidates," *International Journal of Selection and Assessment* 16 (2008), 78–81; Paul T. Bartone, "Test-Retest Reliability of the Dispositional Resilience Scale-15, a Brief Hardiness Scale," *Psychological Reports* 101 (2007), 943–944; Paul T. Bartone, "A short hardiness scale," presented at American Psychological Society Annual Convention, New York, 1995, available at <www.hardiness-resilience.com>.

¹⁴ See, for example, Salvatore Maddi et al., "Hardiness Training Facilitates Performance in College," *Journal of Positive Psychology* (forthcoming); and Sima Zach, Shula Raviv, and Reuven Inbar, "The Benefits of a Graduated Training Program for Security Officers on Physical Performance in Stressful Situations," *International Journal of Stress Management* 14, no. 4 (2007), 350–369.

¹⁵ For example, a study of Iranian women found that hardiness appears to increase self-efficacy, and that both are related to higher life satisfaction. See Irandokht Asadi Sadeghi Azar, Promila Vasudeva, and Abdolghani Abdollahi, "Relationship between Quality of Life, Hardiness, Self-efficacy and Self-esteem amongst Employed and Unemployed Married Women in Zabol," *Iran Journal of Psychiatry* 1 (2006), 104–111.

¹⁶ Martin Heidegger, *Being and Time* (New York: Harper Collins Publishers, 1986); Ludwig Binswanger, *Being in the world: Selected papers of Ludwig Binswanger* (New York: Basic Books, 1963); Viktor Frankl, *The Doctor and the Soul* (New York: Knopf, 1960).

¹⁷ Salvatore Maddi, "The Existential Neurosis," *Journal of Abnormal Psychology* 72 (1967), 311–325.

¹⁸ See Richard Contrada, "Type A Behavior, Personality Hardiness, and Cardiovascular Responses to Stress," *Journal of Personality and Social Psychology* 57 (1989), 895–903; Suzanne Kobasa, Salvatore Maddi, and Stephen Kahn, "Hardiness and Health: A Prospective Study," *Journal of Personality and Social Psychology* 42 (1982), 168–177; Deborah Roth et al., "Life Events, Fitness, Hardiness, and Health: A Simultaneous Analysis of Proposed Stress-resistance Effects," *Journal of Personality and Social Psychology* 57 (1989), 136–142; Deborah J. Wiebe, "Hardiness and Stress Moderation: A Test of Proposed Mechanisms," *Journal of Personality and Social Psychology* 60 (1991), 89–99.

¹⁹ Paul T. Bartone, "Hardiness as a Resiliency Factor for United States Forces in the Gulf War," in *Posttraumatic Stress Intervention: Challenges, Issues, and Perspectives*, ed. J.M. Violanti, D. Paton, and C. Dunning (Springfield, IL: C. Thomas, 2000), 115–133; Paul T. Bartone, "Hardiness Protects against War-related Stress in Army Reserve Forces," *Consulting Psychology Journal* 51 (1999), 72–82; Paul T. Bartone, "Psychosocial Predictors of Soldier Adjustment to Combat Stress," Third European Conference on Traumatic Stress, Bergen, Norway, June 1993.

²⁰ Paul T. Bartone et al., "The Impact of a Military Air Disaster on the Health of Assistance Workers: A Prospective Study," *Journal of Nervous and Mental Disease* 177 (1989), 317–328.

²¹ Paul T. Bartone, "Stress and Hardiness in U.S. Peacekeeping Soldiers," presented at the American Psychological Association Annual Convention, Toronto, 1996; see also Thomas Britt, Amy Adler, and Paul T. Bartone, "Deriving Benefits from Stressful Events: The Role of Engagement in Meaningful Work and Hardiness," *Journal of Occupational Health Psychology* 6 (2001), 53–63.

²² V. Florian, Mario Mikulincer, and O. Taubman, "Does Hardiness Contribute to Mental Health during a Stressful Real Life Situation? The Role of Appraisal and Coping," *Journal of Personality and Social Psychology* 68 (1995), 687–695.

²³ Mina Westman, "The Relationship between Stress and Performance: The Moderating Effect of Hardiness," *Human Performance* 3 (1990), 141–155.

²⁴ Paul T. Bartone et al., "Factors Influencing Small-unit Cohesion in Norwegian Navy Officer Cadets," *Military Psychology* 14 (2002), 1–22.

²⁵ Bartone, "Hardiness Protects against War-related Stress in Army Reserve Forces," 72–82.

²⁶ In a study of U.S. Army Soldiers deployed to Bosnia, those high in hardiness were more likely to perceive their work as meaningful. See Britt, Adler, and Bartone, 53–63.

²⁷ Irving Janis, *Groupthink*, 2^d ed. (Boston: Houghton Mifflin, 1972).

²⁸ See Karl E. Weick, *Sensemaking in Organizations* (Thousand Oaks, CA: Sage, 1995). Related to this, Berger and Luckmann argue that "reality" or perceptions of individuals reflect "social constructions," an incorporation into the individual mind of social definitions of the world (see Peter L. Berger and Thomas Luckmann, *The Social Construction of Reality* [Garden City, NY: Doubleday, 1966]). Even Gordon Allport, noted American personality psychologist, viewed individual meaning as often largely the result of social influence processes. Gordon W. Allport, "The Historical Background of Social Psychology," in *Handbook of Social Psychology*, ed. G. Lindzey and E. Aronson, 3^d ed., vol. 1 (New York: Random House, 1985), 1–46.

²⁹ Bartone et al., "Factors Influencing Small-unit Cohesion in Norwegian Navy Officer Cadets," 1–22.

³⁰ The case was identified during research conducted in 1995 with a U.S. Army unit deployed to Saudi Arabia as part of a deterrent or peace enforcement operation. The first author had the opportunity to visit this unit as part of a study of deployment stress, morale, and cohesion in U.S. Army air defense artillery (ADA) battalions. After the Gulf War ended in 1991, ADA battalions were stationed in Saudi Arabia and Kuwait to guard against possible Iraqi Scud missile attacks. Units deployed for about 6 months, and then were replaced by other ADA units. The unit under study was about 4.5 months into the mission when the research was conducted. Methods included observations, interviews, and surveys administered throughout the battalion.

³¹ A National Institute of Mental Health report on best practices for early psychological interventions following mass violence events noted great confusion regarding the term *debriefing*. The authors recommend that the term be reserved for operational after-action reviews and not be applied to psychological treatment interventions such as critical incident stress debriefing. See National Institute of Mental Health, "Mental Health and Mass Violence: Evidence-Based Early Psychological Intervention for Victims/Survivors of Mass Violence. A Workshop to Reach Consensus on Best Practices," National Institutes of Health Publication no. 02–5138 (Washington, DC: U.S. Government Printing Office, 2002), available at <www.nimh.nih.gov/health/publications/mass-violence.pdf>. For groups such as the military, after-action group debriefings, properly timed and conducted and focused on events rather than emotions and reactions, can have great therapeutic value for many participants by helping them to place potentially traumatizing events in a broader context of positive meaning. See Paul T. Bartone, "Predictors and Moderators of PTSD in American Bosnia Forces," Fifth European Conference on Traumatic Stress, Maastricht, The Netherlands, June 1997.

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