Unit Cohesion and Military Performance[1]

Overview

In the years immediately after World War II, several scholars argued, based on information collected from German and American soldiers, that unit cohesion is essential to military effectiveness. Their conclusions gained considerable influence within the military. As we discuss below, our understanding of the concept of cohesion and its relationship to military performance has evolved in the years since, but the importance of the general concept of cohesion remains widely appreciated in the military.

There is little doubt that personal bonds can play an important role in combat motivation. Understanding the full meaning of the term *cohesion*, what influences it, how it relates to performance, and how changes in group composition affect it is central to understanding how the introduction of known gay men and lesbians into military units will impact military performance. In the debate preceding the 1993 enactment of legislation leading to the DADT policy, there was a difference of opinion among military social scientists as to the likely effects of lifting the ban. Some predicted that the presence of known gay personnel would significantly disrupt unit cohesion, while others disagreed. Accordingly, RAND's 1993 report included a review of the existing literature related to the nature of unit cohesion, its effects on military performance, and the ways in which the presence of known gay men and lesbians might affect cohesion and performance.

This chapter provides an update on relevant research on these topics and discusses new topics raised in the literature since 1993. As in 1993, we focus on the cohesion-performance link because it is so central to the policy debate—indeed, it is specifically cited in the DADT legislation. But military doctrine has long recognized that unit readiness and performance are the products of an array of inputs, policies, processes, and intangible factors in addition to unit cohesion, including leadership, training, mission, equipment, and logistical support, as well as weather, terrain, and enemy char-

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[1]   This chapter was prepared by Robert J. MacCoun and William M. Hix.

acteristics.[2] And, as discussed in 1993, cohesion is similarly influenced by a variety of factors, including leadership, group size, and unit turnover (RAND, 1993). Perhaps the most significant addition in the current study is a review of the rapidly growing literature on how heterogeneity among group members affects cohesion and task performance. We also attempt to clarify the important role of interpersonal trust in one's colleagues, showing that it is produced by the nexus of professional role expectations and situational demands during threat and does not require established bonds of liking and friendship.

Study Approach

As in 1993, we conducted an extensive literature search for new empirical studies on group cohesion (or cohesiveness) and its antecedents and consequences, locating a considerable body of new research, including both published and unpublished studies in the military, sports, social psychology, and industrial-organizational behavior literatures. Because our coverage is so broad, we limit our focus mostly to quantitative studies that measure cohesion, performance, and related variables at the individual or small-group level. Thus, our review does not include most qualitative studies, organization-level case studies, or essays that discussed DADT and its relationship to unit cohesion without direct measurement at the individual or small-group level.

Much of the relevant empirical evidence takes the form of correlational evidence, including factor analyses, multiple regression analyses, and meta-analyses. In brief, factor analysis is a technique for attempting to infer the underlying dimensions in questionnaire responses. Multiple regression analysis examines the pattern of associations between an outcome variable and a set of predictor variables; it attempts to statistically distinguish these predictors in situations where experimental control is not feasible. And meta-analysis is a technique for aggregating and synthesizing different empirical estimations of an association (e.g., between task cohesion and performance) across multiple studies; it can provide more reliable estimates than would be possible in any single study. In our discussion, we attempt to minimize the statistical details (which are available in the studies we cite), except where a technical discussion is necessary in order to critically review a study or to clarify its findings.

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[2]   DoD requires all services to regularly assess and report on the readiness of deployable units according to a highly specified readiness reporting system (DoDD 7730.65, June 2002). Unit cohesion is not among those readiness factors required to be assessed. See, for example, U.S. Army Regulation 220-1, 2010, Chapter 9, and U.S. Air Force Instruction 10-201, 2006, Chapter 3. In addition, the cohesion concept is not always central in the small-group and organizational behavior literatures. For example, Salas et al., 2007, display seven different theoretical models of team effectiveness dating back to 1978, and cohesion does not appear in any of the model diagrams, though many related concepts—leadership, communication, interdependence, heterogeneity—appear in most of them.

We begin by reviewing the measurement of cohesion and its effects on group performance and other relevant outcomes. We then turn to an examination of what is known about the effects of heterogeneity in member characteristics (sexual orientation, race, gender, etc.) on group cohesion and on group performance. Finally, we discuss the implications of these literatures for the debate about the repeal of the DADT policy.

Findings: Understanding Unit Cohesion

What Is Cohesion?
Early military writings discussed cohesion in monolithic terms as an important contributor to military performance and winning on the battlefield. Further academic inquiries into cohesion have distinguished various types of cohesion as a means to better analyze how interpersonal dynamics impact the performance of small organizations—e.g., teams and small military units, such as squads and platoons. Since the 1993 study, further evidence has accumulated to support distinguishing between task and social cohesion, and this distinction is now adopted in most academic articles on the topic (Beal et al., 2003; Carless and de Paola, 2000; Carron and Brawley, 2000; Casey-Campbell and Martens, 2009; Chang and Bordia, 2001; Chiocchio and Essiembre, 2009; Cota et al., 1995; Dion, 2000; Kier, 1998; Mullen and Copper, 1994).

Task cohesion and social cohesion are defined as follows:

- *Task cohesion* is the shared commitment among members to achieving a goal that requires the collective efforts of the group. A group with high task cohesion is composed of members who share a common goal and who are motivated to coordinate their efforts as a team to achieve that goal.
- *Social cohesion* is the extent to which group members like each other, prefer to spend their social time together, enjoy each other's company, and feel emotionally close to one another.

Dion argues that "the conceptual distinction between task cohesion and social cohesion that has emerged independently from several models and lines of research is an important milestone in cohesion research" (Dion, 2000).

If repealing DADT were to lead more gay service members to disclose their orientation to other unit members, the effects on task cohesion and the effects on social cohesion would not necessarily be the same. Therefore, throughout this chapter, we will elaborate on the interpretation, antecedents, and consequences of these two types of cohesion. But we also highlight several other terms that will be relevant to this discussion.

Horizontal Cohesion Versus Vertical Cohesion. Task cohesion and social cohesion are both forms of *horizontal cohesion*, which refers to cohesion at the primary

group level—generally the crew or squad, and perhaps the platoon—rather than at the level of larger units, such as the brigade, company, or service (Griffith, 1988; Siebold and Kelly, 1988). In contrast, *vertical cohesion* refers to downward or upward cohesion involving leaders and followers. In the remainder of this chapter, we will reserve the word *cohesion* for horizontal cohesion, and we will use the more familiar terms *leadership* and *followership* (conventionally used in organizational studies) when discussing vertical cohesion.

Group Pride, Collective Identity. Group members often describe feelings of pride and identification with their group as an entity, and this can occur "even though they are unacquainted with many, if not most, of the other group members" (Swann et al., 2009). Further research is needed to determine whether this sense of group pride should be subsumed into either social cohesion or task cohesion, but for present purposes we will assume it is a distinct factor in its own right (Dion, 2000; Griffith, 2009; Hogg and Terry, 2000; Manning, 1994; Mullen and Copper, 1994; Shamir et al., 2000).

Morale and Esprit de Corps. Unit cohesion can be considered a contributor to morale. Manning reviews various definitions of the terms *morale* and *esprit de corps* and suggests that morale is best thought of as "the enthusiasm and persistence with which a member of a group engages in the prescribed activities of the group" (Manning, 1994). He suggests that esprit de corps is the counterpart to cohesion at the level of the organization rather than at the level of the primary unit and that cohesion and esprit de corps are each contributors to one's morale.

Collective Efficacy or Group Potency. Cohesion should be distinguished from collective efficacy or group potency. Bandura (2000) argued that a sense of collective efficacy ("[p]eople's shared beliefs in their collective power to produce desired results," p. 75) is an emergent property of groups that explains why some teams fail to live up to the total potential of their members. In a study of 648 Air Force officers, a measure of perceived group potency was superior to group cohesion as a better predictor of team performance (Jordan, Field, and Armenakis, 2002). Shamir et al. (2000) provide similar results for the Israel Defense Forces (IDF).

Trust. Various lines of evidence suggest that the degree of trust between group members is distinct from either task cohesion (shared commitment to the mission) or social cohesion (liking for one's colleagues). For example, Griffith (1988) showed that a "Trust and Caring" factor (with such items as "People in this company feel very close to each other" and "In this company, people really look out for each other") was distinct from an "Instrumental and Affective Support" factor (e.g., "Most people in my squad would lend me money in an emergency"), as well as from a "Friendship" factor (e.g., "I spend my after-duty hours with people in this company"). Manning (1994) cites evidence that "soldiers can and do distinguish between likability and military dependability, choosing different colleagues with whom to perform a risky mission and to go on leave." Dirks (1999) defines interpersonal trust as "a belief about the dependability of the partner and the extent to which the partner cares about the group's inter-

ests," noting that it is distinct from such concepts as cohesion, friendship, or familiarity (p. 446). Mayer, Davis, and Schoorman (1995) argue that in organizational settings, trust has three components: benevolence, ability, and integrity; for additional evidence, see Lee et al. (2010).[3]

The Cohesion-Performance Relationship

In the 1993 study, we argued that cohesion was reliably associated with performance, but with two important caveats. First, the association was at least partly (and sometimes mostly) due to the effects of performance on cohesion, rather than the reverse. In other words, while cohesion may make groups perform better, groups that perform well tend to become more cohesive, and groups that have experienced failure tend to become less cohesive. Second, we found that among the components of cohesion, task cohesion was the most important determinant of group performance.

These conclusions were based in part on a prepublication draft of a meta-analysis by Brian Mullen and Carolyn Copper (subsequently published as Mullen and Copper, 1994). Since Mullen and Copper, there have been four newer meta-analyses of various subsets of the cohesion literature: Gully, Devine, and Whitney (1995), with 46 studies; Oliver et al. (1999), 36 studies; Beal et al. (2003), 64 studies; and Chiocchio and Essiembre (2009), 29 studies. All agree with Mullen and Copper that there is a reliable cohesion-performance association, though they show that the magnitude of the association varies depending on the nature of the task and the way the variables are measured. For example, Gully et al. (1995) and Oliver et al. (1999) each show that the association is significantly stronger when performance is measured at the group level rather than at the individual level. Beal et al. (2003) and Chiocchio and Essiembre (2009) showed that the cohesion-performance association was stronger when group tasks required a high degree of coordination among members.

The Oliver et al. (1999) meta-analysis is distinctive in using only military studies; the other meta-analyses have few military studies (all have fewer than Mullen and Copper, and Chiocchio and Essiembre included none). Most of these studies involve noncombat situations, though many examine unit performance in combat simulations in training facilities, such as the National Training Center (NTC), and these approximate actual combat in many ways.[4] Mullen and Copper (1994) found a weaker cohesion-performance association in military studies than in studies of sports

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[3] Some authors distinguish between "cognitive trust" (based on perceived competence and reliability) and "affective trust" (based on reciprocal bonds of caring and concern); see McAllister, 1995, and Webber, 2008. The questionnaire items that these authors use to measure affective trust make no reference to interpersonal liking, shared attitudes, or the pursuit of common goals, so affective trust cannot be equated with either social or task cohesion.

[4] Wong, 1992, provides more detail:

> The task of engaging highly competent enemy forces during day and night missions in a maneuver area the size of Rhode Island, in addition to the harsh desert environment, provides the best external validity possible short

teams, and some military studies not included in their analysis have found either no effect (Wong, 1992) or even negative effects (Peterson, 2007) of cohesion on simulated battle performance. Later, we will discuss the dynamics of cohesion under actual mortal threat.

Effects of Different Types of Cohesion. Most of the studies in the Mullen and Copper (1994) meta-analysis predated the distinction of task and social cohesion. However, they had two different raters examine each study and code the degree to which each study appeared to be assessing task cohesion ("commitment to the task"), social cohesion ("interpersonal attraction"), or group pride. They found that task cohesion was the strongest predictor of performance, followed by group pride. They also showed that for the correlational studies, social cohesion and group pride had no reliable effects on performance once task cohesion was statistically controlled; the converse was not true.[5] Thus they argued that commitment to the task—what we and other authors refer to as task cohesion—"is the primary component of cohesiveness in the cohesiveness-performance effect" (p. 221).[6] Beal et al. (2003) also found that the simple cohesion-performance correlation was larger for task cohesion ("commitment to task") than for social cohesion ("interpersonal attraction")—i.e., 0.43 compared to 0.27 for Mullen and Copper, and 0.25 compared to 0.17 for Beal et al. But Mullen and Copper found that the social cohesion effect disappeared once they statistically controlled for the task cohesion effect. Because of the way they coded their variables,[7] Beal et al. (2003) could not control for task cohesion in analyzing the effect of social cohesion.

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of actual combat. The dirt, dust, tear gas, smoke, simulated chemical agents, and relentless sun all contribute to the realism of an ideal testing ground for cohesion and its effects on performance. (p. 1217)

[5] None of the types of cohesion had a significant partial correlation (a significant association after controlling for the other types) for the experimental studies. Note that these experiments were designed to manipulate high versus low cohesion, but most of them were not designed to manipulate task cohesion versus social cohesion versus group pride.

[6] Carron, Bray, and Eys, 2002, were sufficiently confident that task cohesion was the more important predictor that they did not even use the two social cohesion scales from Carron's Group Environment Questionnaire in their study of success in sports teams.

[7] Beal et al., 2003, did not undertake a similar statistical control procedure, because "if an effect size estimate included items assessing more than one component simultaneously, we did not include it in the analysis" (p. 992). Although Beal et al. asserted that the three components "each bear significant independent relations to performance across many criterion categories," their coding cannot produce independent estimates of the effect of each component of cohesion, because even if a questionnaire item clearly refers to only one component (e.g., the desire to socialize with other members as a measure of social cohesion), it does not follow that responses to this measure are therefore independent of other components of cohesion. For example, it is likely that people may be more likely to want to socialize with a colleague, all things being equal, when that colleague shares their commitment to the group's mission and goals. Beal et al. criticized the Mullen and Copper coding using a hypothetical example in which three of four items on a cohesion questionnaire measure task cohesion, and yet the cohesion-performance link is largely driven by the fourth item measuring social cohesion. But their own results show this hypothetical is improbable, and it cannot explain why Mullen and Copper found that the percentage of task cohesion items predicted the strength of the cohesion-performance association *across* studies, unless, implausibly,

One important reason for distinguishing between types of cohesion is that social cohesion has sometimes been linked to bad team performance—at least from the perspective of the goals of the larger organization (Janis, 1982; Stogdill, 1972). Recent evidence shows that it is social cohesion rather than task cohesion (or together with low task cohesion) that is responsible for any negative effects (Bernthal and Insko, 1993; Griffith, 2002; Hoigaard, Safvenbom, and Tonnessen, 2006; Peterson, 2007; Rovio et al., 2009).

Effects of Performance on Cohesion. Mullen and Copper (1994) clearly recognized that by itself, the cohesion-performance association does not indicate the extent to which cohesion actually *causes* good or bad performance. As one way of addressing this question, they examined seven different cross-lagged panel analyses in which cohesion and performance were each assessed at two different points in time. While cross-lagged panel analyses cannot prove causation, the patterns they reported in at least some of these studies suggest that performance had a stronger influence on cohesiveness than the reverse. Unfortunately, subsequent meta-analyses have not updated this analysis.[8]

Effects of Cohesion on Coping and Other Outcomes. Cohesion might impact many outcomes other than group performance. The Oliver et al. (1999) meta-analysis of military studies found significant positive correlations of cohesion with job satisfaction, retention, well-being, and indiscipline (e.g., rates of absence without leave).[9] Perhaps the most compelling link is between cohesion and psychological coping (Ahronson and Cameron, 2007; Griffith, 2002; Shay, 2002). Using an adapted version of the Group Environment Questionnaire in a Canadian military sample, Ahronson and Cameron (2007) found that high individual task and social cohesion ratings were associated with lower levels of psychological distress. Griffith (1989, 2002) argues that cohesion has a

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interpersonal attraction items were somehow more influential in studies where they were rare than in studies where they were common. For a related perspective, see Kozlowski and Ilgen, 2006.

[8]   When studies had data from multiple time periods, Beal et al., 2003, and Chiocchio and Essiembre, 2009, only coded the Time 2 measures of both variables. For example, Chiocchio and Essiembre code Bakeman and Helmreich's 1975 study as a 0.73 association between social cohesion and performance—the correlation between both constructs measured at Time 2. But in fact, Bakeman and Helmreich found that the correlation between Time 1 cohesion and Time 2 performance was only 0.13; thus the 0.73 estimate is clearly more likely to represent the effect of performance on cohesion than the reverse.

[9]   Another possible outcome is viability. Balkundi and Harrison, 2006, claim that their meta-analysis shows that expressive or emotional ties among team members do a better job than instrumental, task-related ties as predictors of a team's viability, defined as its "potential to retain its members." This seems plausible for many real-world groups, especially if they are voluntary and if people can readily find alternative groups with the same goals and more likeable members. But these authors do not provide a credible test, because "[w]hen group member satisfaction, team climate or atmosphere, team commitment, or indicators of group cohesion were assessed as team outcomes . . . we regarded them as measures of team viability" (p. 57). These are clearly antecedents of viability rather than indicators of it, and in some studies they overlap in content with the affective tie measure, all but guaranteeing a correlation.

buffering effect because it operates as an indicator of social support—one of the most robust predictors of coping in the behavioral health literature (Ozer et al., 2003).

Interestingly, both Griffith (2002) and Ahronson and Cameron (2007) found that the cohesion-coping link operates mostly at the individual level rather than at the group level. This may indicate that perceptions of social support may not be universally shared by group members, which in turn has potential policy implications for the DADT debate. As we noted in 1993, any effect of a known gay man or lesbian on unit cohesion is likely to take the form of some degree of ostracism of the gay service member (rather than a broader breakdown of the unit). This could put that individual at significant psychological risk in an already high-stress situation (Williams, 2007), but it would not be expected to create similar risk for those in the heterosexual majority.

On the other hand, we know that concealing one's sexual identity, as the DADT policy requires, takes an enormous psychological toll of its own (Herek and Garnets, 2007; McKenna and Bargh, 1998; Petrie, Booth, and Pennebaker, 1998). This issue is discussed in further detail in Chapter Seven.

The Role of Cohesion in Combat and Crisis. Cohesion has long been a central tenet in military writings. Our understanding of cohesion has matured over time as it has been the subject of critical evaluation. In the years immediately after World War II, Marshall (1947), Shils and Janowitz (1948), and Stouffer et al. (1949) argued that social cohesion within the soldier's primary group is essential to military effectiveness. Shils and Janowitz offered the following (1948, p. 281):

> It appears that a soldier's ability to resist is a function of the capacity of his immediate primary group (his squad or section) to avoid social disintegration. When the individual's immediate group, and its supporting formations, met his basic organic needs, offered him affection and esteem from both officers and comrades, supplied him with a sense of power and adequately regulated his relations with authority, the element of self-concern in battle, which would lead to disruption of the effective functioning of his primary group, was minimized.

Nevertheless, it is not clear that social cohesion was the driving force behind combat motivation, even during World War II. Stouffer et al. (1949) reported that when soldiers were asked, "What was most important to you in making you want to keep going and do as well as you could?" only 14 percent cited "solidarity with the group"; the most popular response (cited by 39 percent) was "ending the task."

Subsequently, a number of military social scientists have questioned the understanding of unit cohesion and the primacy of social cohesion that developed from these early studies. Segal and Kestnbaum (2002) argued that "a romantic mythology has grown up around these studies, leading people to suspend critical judgment regarding their methods, incorrectly recall their findings, and overlook subsequent research that has suggested limits on their generalizability" (p. 445). Similarly, Garvey and DiIulio (1993) contended that "Post-World War I and II studies focusing mainly on the

British, American and German experiences have been read as reinforcing the current conventional wisdom about conventional warfare—namely, that combat performance depends crucially on unit cohesion. These studies, however, simply don't prove what their exponents claim they do" (also see Peterson, 2008).[10]

The post-Vietnam–era military scholars began articulating a view of cohesion that emphasizes the importance of task cohesion. For example, an influential definition of military cohesion was offered by Wm. Darryl Henderson in his 1985 book, *Cohesion: The Human Element in Combat*. His vision is clearly more in accord with task cohesion than social cohesion:[11]

> Cohesion exists in a unit when the day-to-day goals of the individual soldier, of the small group with which he identifies, and of unit leaders, are congruent— with each giving his primary loyalty to the group so that it trains and fights as a unit with all members willing to risk death and achieve a common objective. (Henderson, 1985, p. 4)

Other scholars have emphasized the importance of trust and teamwork based on common experiences, including training and a focus on performing common tasks. Siebold (2007) describes the "standard model" of cohesion as involving peer (horizontal), leader (vertical), organizational, and institutional bonding, each having an affective component and an instrumental component. He focuses on the role of trust and teamwork, as well as self-interest, in building cohesion:

> The essence of strong primary group cohesion, which I believe to be generally agreed on, is trust among group members (e.g., to watch each other's back) together with the capacity for teamwork (e.g., pulling together to get the task or job done). [p. 288] . . . Combat group members try to develop strong bonding as a collective good, at least in part, because it is in their own self-interest for survival to do so. [p. 289] . . . While it is true that a few researchers have focused on intimate personal bonds and informal rituals, I submit that the majority of researchers . . . have used some form or part of the standard model in their approach, especially during the past twenty years, which does not dwell on intimate relations or masculine rituals but rather emphasizes interpersonal trust and teamwork built through many experiences including arduous training and drills. [p. 291] . . . [M]ere friendship or comradeship is not the essence of cohesion. [p. 292]

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[10] These researchers also questioned the research methods used because they relied heavily on soldier interviews, with little evidence to establish whether respondents' beliefs captured the complex factors affecting performance in typical units. The interview results are often open to alternative interpretations (Garvey and DiIulio, 1993; MacCoun, Kier, and Belkin, 2006; Segal and Kestnbaum, 2002).

[11] In his 1993 prepared statement to the Senate Armed Services Committee (SASC), Henderson modified his definition, replacing the phrase "day-to-day goals" with "primary values and day-to-day goals."

In their interviews with members of the Army, Navy, and Marines regarding the integration of women in units, Harrell and Miller (1997) argue that their respondents seemed to recognize the distinction between task and social cohesion:

> Only when both social and task cohesion were low did people rate overall cohesion as low. The negative effects of too much social bonding were mentioned as well. . . . even those who longed for the "good old days" of high social cohesion admitted that some now-abandoned types of social bonding between men were actually unprofessional and detracted from the work environment. [pp. 58–59] . . . That task cohesion was strong and took precedence over social cohesion was expressed in a number of different ways: . . . "We all have our own thing going but when we need to get together for a goal the ship works together well." "When an actual casualty occurs everyone joins together for the common good." . . . "Although we don't get along we are all ready for a fight." [p. 60]

Recent military scholarship has focused a great deal on the task-related aspects of group functioning. For example, Salas, Burke, and Cannon-Bowers (2000) describe eight core principles of effective teamwork: adaptability, shared situational awareness, performance monitoring and feedback, leadership, interpersonal relations, coordination, communication, and decisionmaking. Only one (interpersonal relations) appears to involve social cohesion, and their discussion of it involves communication and conflict resolution, rather than the need for members to like one another.

Caring, Concern, and Trust in Military Units. Task cohesion clearly plays a central role in the work of Siebold, Griffith, Manning, and other military scholars, but these scholars emphasize that cohesion also has a strong interpersonal component. In the Army War College study *Why They Fight: Combat Motivation in the Iraq War* (2003), Wong et al. offered a new variation on the Shils and Janowitz thesis. Wong et al. included field interviews with Iraqi Regular Army prisoners of war (n = 30) and with U.S. combat troops (n = 40) during Operation Iraqi Freedom in the spring of 2003. The authors argue that these interviews call for a revisiting of the World War II perspective, which rejected the role of ideology in soldiers' motivation but instead identified the importance of strong emotional bonds among soldiers. But this type of interview methodology precludes any inferences about the causal impact of these emotional bonds on either individual combat motivation or unit performance (MacCoun, Kier, and Belkin, 2006). And, as noted earlier, Wong's 1992 study did not find that his measure of cohesion in the unit predicted performance in combat simulations at NTC.

Still there is clearly a strong *interpersonal* dimension to the combat experience, one that is not really captured by the notion of task cohesion. But neither is it captured by the notion of social cohesion. Rather, it is in part an adaptation to powerful situational forces and in part a reflection of the nature of professional trust. In our 1993 report, we offered an extended discussion of the role that mortal threat plays in the development of cohesion, suggesting that mutual threat, combined with the possibil-

ity of eliminating the danger, could produce increased task cohesion and an increased need for affiliation (enhancing social cohesion), as long as members were not in competition with each other for safety or scarce resources. But that analysis suggested that the heightened social cohesion is to some extent a side effect (or consequence) of combat conditions, not necessarily a driver of combat behavior.

Interestingly, this line of argument was long ago anticipated by another classic work of the World War II experience, Grinker and Spiegel's *Men Under Stress* (1945):

> In the theater of operations . . . the presence of the enemy, and his capacity to injure and kill, give the dominant emotional tone to the combat outfit. . . . The impersonal threat of injury from the enemy, affecting all alike, produces a high degree of cohesion so that personal attachments throughout the unit become intensified. Friendships are easily made by those who might never have been compatible at home, and are cemented under fire. Out of the mutually shared hardships and dangers are born an altruism and generosity that transcend ordinary individual selfish interests. So sweeping is this trend that the usual prejudices and divergences of background and outlook, which produce social distinction and dissension in civil life, have little meaning to the group in combat. Religious, racial, class, schooling or sectional differences lose their power to divide the men. What effect they have is rather to lend spice to a relationship which is now based principally on the need for mutual aid in the presence of enemy action. Such powerful forces as antisemitism, anticatholicism or differences between Northerners and Southerners are not likely to disturb interpersonal relationships in a combat crew. . . . Their association is not limited to working hours but includes their social activities. . . . The most vital relationship is not the purely social. It is the feeling that the men have for each other as members of combat teams and toward the leaders of those teams, that constitutes the essence of their relationship. (pp. 21–22)

Threat can also amplify task cohesion and group pride. When forced to confront the profound existential terror of their mortality, people often cope by embracing cultural worldviews that embed the self in something larger and more enduring—e.g., one's nation, cultural traditions, or religion (Greenberg, Solomon, and Pyszczynski, 1997). Van den Berg (2009) observed this kind of tendency in a comparison of Dutch and other North Atlantic Treaty Organization (NATO) military staff deployed in their home nations or in Afghanistan. He found that a higher threat of death "was associated with 1) higher acceptance of the risk of dying, 2) higher self-assessment of operational readiness, 3) more compliance with the mission and more internal motivation for the mission at hand, and 4) stronger identification with the Royal Netherlands Army compared to soldiers who had experienced low or medium threat" (p. 112). But threat was associated with a reduced willingness for international collaboration with Turkish troops and a more negative view of the local population (pp. 113–114).

Social Compacts and "Swift Trust." Surely emotional bonds play a role in combat motivation and adjustment to severe stressors. But the nature of the bonds matters;

the key is not liking or affection, but rather (as we suggested earlier in the chapter) the distinction between social cohesion and *trust*.

In the essay "Vietnam: Why Men Fight" (1971), Charles Moskos argued that combat motivation arose from a combination of soldier self-interest and shared values forged in the combat situation:

> My own research among American soldiers in Vietnam has led me to question the dominant influence of the primary group [i.e., the members of one's immediate unit] in combat motivation on at least two counts. First, the self-serving aspects of primary relations in combat units must be more fully appreciated. . . . to carry Hobbes a step further, primary group processes in combat are a kind of rudimentary social contract, a contract that is entered into because of its advantages to oneself. . . . I would argue that combat motivation arises out of the linkages between individual self-concern and the shared beliefs of soldiers as these are shaped by the immediate combat situation. (pp. 19–20)

Elsewhere, Moskos, as cited in Marlowe (1979), referred to this social compact as "instrumental and self-serving." But a less cynical framing is provided by the growing literature on the importance of "swift trust" in high-stakes settings (Kramer, 1999; Majchrzak, Jarvenpaa, and Hollingshead, 2007; Meyerson, Weick, and Kramer, 1996). Trust that is based on strong interpersonal bonds can take a long time to develop (McAllister, 1995; Webber, 2008). But Meyerson, Weick, and Kramer (1996) note that professional teams often "have a finite life span, form around a shared and relatively clear goal or purpose, and their success depends on a tight and coordinated coupling of activity." Majchrzak, Jarvenpaa, and Hollingshead (2007) examined various case studies in the development of swift trust among complete strangers in response to natural disasters.

Kramer (1999) reviewed evidence for several different ways in which this kind of swift trust develops, including category-based trust (based on knowledge of the other person's membership in trusted groups), role-based trust (e.g., using high rank as a measure of one's past experience and performance), and rule-based trust (based on "shared understandings regarding the system of rules regarding appropriate behavior," p. 579). These mechanisms may work through either task cohesion or social cohesion, depending on the setting. Thus, when people rely on someone's professional certification (e.g., as a surgeon, engineer, or musician), there may be a rapidly established task cohesion. If, however, one were to rely on credentials from a fraternal organization, the swift trust might rapidly create social cohesion. Similarly, rule-based trust might promote task cohesion in professional settings but social cohesion in social organizations. Of course, these routes are not mutually exclusive; professional conferences organize social outings, and fraternal groups organize charitable works.

In their study of 130 IDF combat soldiers, Ben-Shalom, Lehrer, and Ben-Ari (2005) employed this notion of swift trust to argue for a reconceptualization of mili-

tary cohesion. They argue that the IDF operations during the Al Aqsa Intifada challenge the centrality of cohesion in combat operations:

> During the conflict, many of the regular frameworks of the military were broken up and new ones established. Such ad hoc frameworks—that seemed to work highly effectively—seem to contradict the image of "textbook units" marked by clear boundaries, continuity of membership over time, and strong internal cohesion. . . . these "instant units" were often composed of constantly changing constituent elements that came together for a mission and then dispersed upon its completion. (p. 64)

This concept of swift trust may also explain Peterson's observation of the "paradox that extremely high levels of performance are maintained despite incredibly high personnel turnover for the crew of an aircraft carrier" (Peterson, 2008). And the dynamics of swift trust may help to explain the ineffectiveness of "unit manning" (or lifecycle) policies designed to build and sustain cohesion by keeping units together as long as possible (Griffith, 1989; Peterson, 2008; RAND, 1993, Chapter 10; Smith and Hagman, 2006; Vaitkus and Griffith, 1990; Winkler, 2008). Proponents of these policies may have underestimated the ability of professionals to effectively work together without a prolonged personal history. The power of swift trust becomes less surprising when we understand that people are willing to sacrifice at great personal cost for the larger society and not just for their immediate primary group (Swann et al., 2009; Wong et al., 2003).

Key Findings: Effects of Team Heterogeneity on Cohesion and Performance

Will the presence of known gay men and lesbians disrupt unit cohesion? In the 1993 report, this discussion was speculative, drawing heavily on social psychological theory and laboratory experiments. Since then, the literature on the effects of differences among individuals on team performance (and to a lesser extent, cohesion) has grown enormously.

Effects of Heterogeneity on Cohesion in Military Units

The recent literature on the effects of nondiscrimination policies in foreign military services is described in Chapter Ten. Here, we limit our focus to direct quantitative estimates of the relationship between a group's performance and the heterogeneity in personal attributes of its members.

To our knowledge, only two studies provide direct empirical tests of a possible association between unit cohesion and the presence of known gay men and lesbians in a military unit. Moradi and Miller (2010) conducted a multivariate analysis of data

from a Zogby International survey of 545 U.S. service members who had served in either Iraq or Afghanistan. They found no significant association between a survey item measuring cohesion and an item asking respondents whether they knew of any gay service members in their unit.

Kaplan and Rosenmann (2010) took a similar approach in a 2000 survey of 417 male soldiers in the IDF, with two key differences. First, unlike Moradi and Miller, Kaplan and Rosenmann were studying a military in which the ban on lesbian and gay service had been eliminated for seven years. Second, rather than having to rely on a single cohesion item, they were able to examine responses to a very detailed questionnaire on affective feelings in the unit, including "enjoying doing things together; longing to be with group; admiration; intimacy; envy; chemistry and shared language; competitiveness; love; wish to disclose personal issues; wish for validation; warmth and physical closeness; brotherhood; [and] sense of social belonging." They found that only 18 percent reported knowing a gay soldier; they cite other IDF evidence that about 83 percent of gay soldiers come out to friends, but only 35 percent come out to members of their units. Members of combat and noncombat units were equally likely to report knowing a gay member, but in neither type of unit was there any relationship between knowing a gay member and ratings on the social cohesion index.

Several recent studies have examined the effects of race, ethnicity, and gender on military cohesion. Siebold and Lindsay (2000) noted that "a central tenet of current personnel policy is that the Army can recruit 17- to 21-year-old men [sic] . . . from different demographic backgrounds, train them, and assign them to groups with leaders, who also have different demographic backgrounds, to form cohesive, motivated, and competent combat units." They report on an Army Research Institute study of 60 light infantry platoons (955 soldiers) at the U.S. Army Joint Readiness Training Center and NTC. Soldiers completed a detailed questionnaire assessing squad cohesion and related attitudes. The average self-reported cohesion rating was around 3.4 on a 5-point scale (5=high cohesion), with no differences in self-reported cohesion ratings for white, black, Hispanic, and Asian soldiers. The researchers noted that "[t]his pattern of little differentiation based on racial or ethnic (demographic) group membership is typical. The unit's internal conditions, including leadership quality, appear to be the dominant influences on soldier cohesion and motivation." Unit diversity was operationalized as the percentage of whites compared to the percentage of nonwhites in a unit, which ranged from 55 percent whites to 88 percent whites. This index was unrelated to cohesion scores (r = 0.06). When they examined ratings of actual mission performance, they found no relationship with racial heterogeneity (r = 0.00).

Two studies have examined the association between unit cohesion ratings and gender differences in military units. Harrell and Miller (1997) examined self-reported cohesion scores for officers and enlisted members of units across the services. They did not find differences related to the gender mix in units, but they report that some respondents attributed perceived cohesion problems to gender-related issues—in par-

ticular, perceived differential standards and treatment for men and women, segregated housing, and couples who were seen as placing their relationship ahead of the good of the unit (pp. 65–66).[12] Nevertheless, gender was rarely described as a primary cause of cohesion problems. In the Army and the Navy, the majority of respondents responded "it doesn't matter" when asked whether "the proportion of women to men at work" mattered to them. About half of the Marine officers preferred male colleagues, though less than a quarter of those in grades E-1 to E-9 felt this way. Rosen et al. (1999) also found evidence linking gender integration to lower cohesion in surveys of troops at U.S. Army posts (in 1988 and 1995) or deployed in the Persian Gulf (1991), Somalia (1993), and Haiti (1995). But the results are ambiguous because cohesion was measured at the company level (rather than at the level of the primary unit) and because the women in their study were younger and more likely to belong to racial or ethnic minorities than the men.

These studies are by no means conclusive, but they suggest that if there are effects of either racial or gender composition of unit members on military cohesion, they might be weak and fleeting. Gender integration appears to have more noticeable effects; it may pose somewhat different challenges because some male soldiers perceive, rightly or wrongly, that women differ in fighting ability or are treated differently by the organization (see Chapter Eight on focus groups).

Meta-Analytic Evidence. There is a much larger body of literature on the effects of group heterogeneity in nonmilitary groups than was available in 1993. Prior to the late 1990s, most scholars believed that team heterogeneity—differences in personal characteristics across members—was likely to be quite consequential for performance; however, they did not agree on whether the consequences would be positive or negative. Those who approached the question from a more cognitive perspective anticipated the ways in which heterogeneity can enhance team creativity, problem-solving, and decisionmaking because heterogeneity broadens the knowledge base, skill sets, and perspectives of the team as a whole (Hong and Page, 2004; Nemeth, 1986; Nemeth and Kwan, 1987). Those who approached the question from a more social perspective—e.g., similarity-attraction theory, social categorization theory, and social identity theory— expected heterogeneity to create friction and conflict and proposed various strategies to address these issues (e.g., minimizing group identities, emphasizing superordinate identities, or cross-cutting group memberships; Byrne, 1971; Tajfel, 1981).

As evidence from both experimentally constructed and real-world teams accumulated, authors writing traditional narrative literature reviews have struggled to reconcile the many conflicting findings (Jackson, Joshi, and Erhardt, 2003; King, Hebl, and Beal, 2009; Mathieu et al., 2008; Shore et al., 2009; Williams and O'Reilly, 1998).

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[12] The concern over double standards is also seen in a study finding some negative effects of civilian contractors on military unit cohesion (Kelty, 2009). Many of these issues were echoed in our focus groups (see Chapter Eight).

There are several challenges to doing so. All of these analyses include many field studies in which the selection processes that produce teams in real settings may have resulted in a serious confounding of member characteristics. For example, women and racial minorities in some of the organizations had less seniority and experience than their male or white counterparts.

There are now several major meta-analyses of various subsets of this literature. These meta-analyses solve some of the aforementioned problems quite well: By accumulating data across studies they largely solve the statistical power problem, and through careful coding of study features they are able to clearly distinguish types of heterogeneity. They fare far less well in addressing the problem of causality. As we describe below, although some studies have identified negative associations between heterogeneous teams and performance, three meta-analyses show no significant net effect, and one finds effects that are quite small in magnitude and limited to certain settings.

There is surprisingly little overlap among the four major meta-analyses of this literature (Bowers, Pharmer, and Salas, 2000; Horwitz and Horwitz, 2007; Joshi and Roh, 2009; Webber and Donahue, 2001). There is no empirical study that was included in every meta-analysis; indeed, of the 100 different source studies that they cover, 84 appeared in only one meta-analysis, and only 16 studies appeared in more than one meta-analysis. For our purposes, this lack of redundancy is a good thing because the results of these meta-analyses converge to a considerable extent, and this increases the confidence with which we can draw conclusions.

Bowers, Pharmer, and Salas (2000) examined 57 estimates comparing teams that were homogenous or heterogeneous in terms of ability, attitude, gender, or personality. They found that the overall effect was statistically insignificant but in the direction of slightly better performance by heterogeneous groups. Webber and Donahue (2001) examined 45 estimates, finding that neither highly job-related diversity (e.g., ability) nor job-unrelated diversity (e.g., demographics) predicted team performance, with average correlations near zero. They also found no relationship between either type of diversity and measures of team cohesion.

Horwitz and Horwitz (2007) examined 78 estimates, finding small but reliable positive effects of task-related heterogeneity on both the quality and quantity of team performance. Heterogeneity due to demographic characteristics was unrelated to both types of outcomes. Horwitz and Horwitz found that the impact of demographic heterogeneity was tested for five different factors that could conceivably increase the impact of demographic heterogeneity, including high versus medium task complexity, work versus project teams, manager-rated versus self-rated outcomes, subjective versus objective outcomes, and organizational versus laboratory settings, but none of these factors was found to increase the impact of heterogeneity. None of these comparisons revealed any significant moderator effects.

The Joshi and Roh (2009) meta-analysis is the most comprehensive one, involving 117 different estimates. They noted that while over half the estimates were non-

significant, among the others "20 percent of the effects reported were significantly positive, and 20 percent were significantly negative." Across studies, performance was significantly associated with member heterogeneity, but the association was negative for sociodemographic diversity (e.g., race/ethnicity and age) and positive for diversity with respected to task-related attributes (e.g., ability). These associations were extremely small (near zero in magnitude).

A more important contribution of the Joshi and Roh analysis is their careful examination of the effects of workplace gender and race ratios. They found that diversity had more negative effects when women or minorities were rare than in more gender- or race-balanced situations, although, again, the negative effects were small in absolute terms.[13] They also found that as a team's task interdependence increased, sociodemographic diversity had more negative effects.

Joshi and Roh note that their analysis helps to pinpoint "the specific conditions under which diversity can have beneficial or detrimental effects on performance outcomes" (p. 618)—specifically, sociodemographic diversity is most likely to be deleterious when it is unbalanced (large majority, small minority) in highly task-interdependent teams. But it is important to bear in mind that these negative effects are quite small.[14] Thus, Joshi and Roh note that "our findings challenge the assumption, born from social categorization theory, that some aspects of diversity necessarily have detrimental effects on team performance." Similarly, King, Hebl, and Beal (2009) suggest that "although social categorization theory (the primary model that would apply to cooperative behaviors) would typically suggest that similarity fosters cooperation, there is substantial evidence that this is not always the case."

Heterogeneity and Conflict: When and What Kind? A number of recent studies have helped to identify some of the conditions in which heterogeneity is most likely to create conflict. A meta-analysis of 26 different estimates by De Dreu and Weingart (2003) found that team performance was most likely to be impaired when member conflicts involved both relationship conflicts (e.g., personality clashes) and task conflicts (e.g., disputes about how the job should be done). They also found that these conflicts were more disruptive for complex tasks (e.g., group decisionmaking) than for simple production tasks.

Another important factor is time. Several studies have shown that any negative effects of sociodemographic differences tend to dissipate over time (Chatman and Flynn, 2001; Chatman et al., 1998; Harrison et al., 2002; Pelled, Eisenhardt, and Xin, 1999; Watson, Kumar, and Michaelsen, 1993). Sargent and Sue-Chan (2001) argued

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[13] It is not clear if this would generalize to sexual orientation, since gay men and lesbians may be able to choose to conceal this characteristic when they feel greatly outnumbered in a group.

[14] Their correlation of −0.12 would be conventionally labeled a "small effect" using Cohen's (1988) guidelines; accounting for less than two percent of the variance in the diversity-performance relationship (i.e., $r^2 = -0.12^2 = 0.0144$), it would be undetectable to a casual observer.

that the effects of racial and ethnic heterogeneity may actually become positive and beneficial but that this "is not likely to manifest in the early life of the group; rather, it will likely manifest later in the group's performance cycle." Harrison et al. (2002) found that while the effects of age, gender, and race grew weaker with time, differences in attitudes about the meaningfulness and importance of the group's task became more important over time (Harrison, Price, and Bell, 1998; Harrison et al., 2002). This is also illustrated by experiments showing the corrosive effects of a coworker who allegedly refused to work overtime (Abrams et al., 2002) or who was "taking a longer than acceptable lunch break, working on personal materials during work time, and leaving their work for a colleague to complete" (Wellen and Neale, 2006). These findings are consonant with what we see in the literatures on task cohesion, on interpersonal trust, and on effective leadership (see below): People are motivated to work with and trust colleagues (and leaders) who have demonstrated their competence, their reliability, and their loyalty and commitment to the group's goals.

Will Hostile Straight Service Members Work with Gay and Lesbian Colleagues?

The findings of Moradi and Miller (2010) in the U.S. military, and perhaps those of Kaplan and Rosenmann (2010) in the IDF, may seem surprising in light of dire predictions that are sometimes made based on evidence for widespread negative views of gay and lesbian sexual orientation among heterosexual members of the military. But as we argued in 1993:

> There are predictions of soldiers refusing to work, bunk, or shower with homosexuals, and of widespread outbreaks of violence against homosexuals. But there is little reason to believe that negative attitudes toward homosexuality are automatically translated into destructive behaviors. . . . The effect of attitudes toward social groups on behavior is known to be indirect, complex, and for most people, fairly weak. (RAND, 1993)

Our 1993 analysis reviewed a wide range of evidence for these arguments, which we will not repeat here. But, in brief, it is now well established that people are not particularly good at accurately identifying and recognizing the causes of their behavior (Nisbett and Wilson, 1977; Wilson, 2009). Attitudes are particularly poor as predictors in domains where the respondent has little direct experience and is, in effect, speculating about his or her responses to the situation (Fazio and Zanna, 1981); indeed, people are not even very accurate at predicting what their attitudes will *be* in those situations (Wilson and Gilbert, 2003). When forecasting their own behavior, people do poorly in large part because they fail to appreciate the many situational forces that will actually shape their responses.

That is not to say that hostile attitudes will never be expressed behaviorally. In an organization as large as the U.S. military, it is prudent to anticipate that there will be

occasional incidents—as there are with respect to race, gender, religion, politics, and other differences—and that military leaders will have to respond accordingly.

There is also the question of how units will respond if unit leaders are themselves known gay men or lesbians. RAND's 1993 study concluded that all leaders need to establish their competence and their loyalty to the organization in order to earn the "followership" of their subordinates and that this is especially likely to be true for leaders who belong to socially stigmatized groups. A recent review of the correlates of effective military leadership concluded that demographics (race/ethnicity, gender) are not the critical factor in determining leader effectiveness: "All in all, these results suggest that these demographic variables play, at most, a weak role in terms of leadership effectiveness" (Wong, Bliese, and McGurk, 2003).

How Can the Military Build and Strengthen Cohesion?

Stable emotional bonds among members might play a smaller role than traditionally assumed in building unit cohesion. But this does not mean that we know nothing about where cohesion comes from or how to build it. RAND (1993) and MacCoun (1996) reviewed evidence concerning many different factors that are known to build cohesion, including

- propinquity (spatial and temporal proximity—the people who happen to be around us)
- shared group membership—belonging to a social category that is salient in the immediate situation (e.g., two parties who are rooting for Navy in the annual Army-Navy football game)
- attitude similarity
- success experiences (as noted earlier in this chapter)
- shared threat (as noted earlier in this chapter)
- leadership and training.

This last point is particularly important. Many authors have discussed the key role that leaders play in building unit cohesion (Grice and Katz, 2005; Griffith, 2002; Siebold, 2007; Siebold and Kelly, 1988; Spiszer, 1999). For example, Griffith (2002) found that leader emotional support and task support both predicted the development of unit cohesion, as well as individual coping.[15] Bass et al. (2003) reported on a study of 72 light infantry platoons in combat simulation exercises. They found that unit members' ratings of their leaders' skills predicted unit cohesion as well as performance four to six weeks later. They concluded that

> by articulating clear standards and expectations for performance and showing recognition to platoon members for specific milestones achieved, platoon leaders may

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[15] Unexpectedly, leader emotional support was negatively associated with combat readiness.

establish a basis for working together that prepares the unit to function in an environment where knowing what to do, when to do it, and with whom is essential to successful performance. (p. 215)

(For similar results in the Norwegian Navy, see Bartone et al. [2002].)

As we noted in 1993, leaders earn their authority by demonstrating competence and loyalty with respect to the unit's mission. But since 1993, a great number of studies have examined the specific leadership behaviors that promote effective team functioning. Field experiments show that effective leadership can be trained (Dvir et al., 2002; Salas et al., 2008). While it is difficult to doubt the value of a "charismatic" personality, it is not clear that this can be taught, and it may not persist over time (Keithly and Tritten, 1997). But officers can be trained in the skills of "transformational leadership," which involves fairness, respect, clarity, consistency, and a willingness to listen (Deluga, 1995; Grice and Katz, 2005; Popper, 1996); and these are at least as important as the doling out of rewards or punishments—i.e., transactional leadership (Judge and Piccolo, 2004). In a meta-analysis of 113 estimates from 50 different studies that measured leadership behaviors and team performance, Burke et al. (2006) found that two classes of leader behaviors promoted good performance: task-focused behaviors, such as the use of praise and clarity about objectives and expectations, and person-focused behaviors involving trust, respect, and encouragement.

Grice and Katz (2005) noted that "one of the indicators of effective leadership is the ability of the leader to resolve interpersonal conflicts and maintain interpersonal relationships." But Knouse (1998, 2001) argued that, to offset any deleterious effects of member heterogeneity, it may be more useful to focus training on task cohesion rather than social cohesion. To build task cohesion, it is not sufficient to emphasize the importance of the team's goals; units need their leaders to help them understand how to achieve those goals. Thus, military researchers have recently devoted considerable attention to the importance of interpersonal task coordination through the use of cross-training (Cannon-Bowers and Salas, 1998; Leedom and Simon, 1995) and the development of "shared mental models"—knowledge structures that allow coworkers to coordinate efforts and anticipate their colleagues' needs and actions (Knouse, 2001; Mathieu et al., 2008; Stout et al., 1999).

Summary

Concerns about the effect of repealing DADT on military effectiveness are sometimes based on two assumptions: that cohesion is a key determinant of unit performance, and that cohesion requires all the members of a unit to like each other and respect each other's personal beliefs. The first assumption is supported by the evidence; cohesion is indeed a reliable correlate of team performance, though it is not the only determinant, and the causation partly goes from performance to cohesion, rather than the reverse.

The second assumption is not well supported by the evidence. The empirical literature since 1993 provides ample evidence to support the distinction between task cohesion (i.e., the shared commitment among members to achieving a goal that requires the collective efforts of the group) and social cohesion (i.e., the nature and quality of the emotional bonds of friendship, liking, caring, and closeness among group members). Although there have been some contrary views (Schaub, 2010; Wong et al., 2003), the empirical literature since 1993 on unit cohesion and its correlates provides considerable support for the conclusions that interpersonal liking is not essential to effective unit performance—what is important is a shared commitment to the unit's task-related goals.

This is not to discount the role of emotional bonds and social support for military life, especially in combat units, but it is important to understand the nature of these factors. Intensified bonds of affection are often a situational response to threat, and, in any case, they are not a prerequisite for trust or dependability. Evidence shows that interpersonal trust in one's comrades is distinct from interpersonal liking and that professionals form this kind of trust rapidly in intense performance situations even when they do not know each other.

Further, it is not clear that repealing DADT will in fact have a deleterious effect on social cohesion. Empirically, the most significant development since 1993 is a now-sizeable body of research on the effects of team heterogeneity on cohesion and performance. Studies in the United States and Israel did not find any significant correlation between perceived unit cohesion and whether one knows of any gay men or lesbians in the unit. In the broader organizational literature, three meta-analyses have found no significant net association between sociodemographic heterogeneity (because of gender, race, and other variables) and team performance, and one meta-analysis found effects that are quite small in magnitude and limited to certain settings. Consistent with the implications of these literatures, the experiences of organizations in which gay men and lesbians currently work without restrictions (see Chapters Ten, Eleven, Twelve, and Thirteen) suggest that any deleterious effects on teams that have known gay and lesbian members may be rare and fleeting.

The empirical literature shows that military leadership and training are essential in building cohesion and improving unit performance. If interpersonal conflict in a unit becomes disruptive, commanders can and should intervene, using positive guidance where possible and disciplinary actions or reassignment when absolutely necessary. But the literatures on cohesion and performance suggest that such situations will be the exception, not the rule.

References

Abrams, Dominic, José Marques, Nicola Bown, and Melanie Dougill, "Anti-Norm and Pro-Norm Deviance in the Bank and on the Campus: Two Experiments on Subjective Group Dynamics," *Group Processes & Intergroup Relations*, Vol. 5, No. 2, 2002, pp. 163–182.

Ahronson, Arni, and James E. Cameron, "The Nature and Consequences of Group Cohesion in a Military Sample," *Military Psychology*, Vol. 19, No. 1, 2007, pp. 9–25.

Bakeman, R., and R. Helmreich, "Cohesiveness and Performance: Covariation and Causality in an Undersea Environment," *Journal of Experimental Social Psychology*, Vol. 11, 1975, pp. 478–489.

Balkundi, Prasad, and David A. Harrison, "Ties, Leaders, and Time in Teams: Strong Inference About Network Structure's Effects on Team Viability and Performance: 'Erratum,'" *Academy of Management Journal*, Vol. 49, No. 4, 2006.

Bandura, Albert, "Exercise of Human Agency Through Collective Efficacy," *Current Directions in Psychological Science*, Vol. 9, No. 3, 2000, pp. 75–78.

Bartone, Paul T., Bjørn Helge Johnsen, Jarle Eid, Wibecke Brun, and Jon C. Laberg, "Factors Influencing Small-Unit Cohesion in Norwegian Navy Officer Cadets," *Military Psychology*, Vol. 14, No. 1, 2002, pp. 1–22.

Bass, Bernard M., Bruce J. Avolio, Dong I. Jung, and Yair Berson, "Predicting Unit Performance by Assessing Transformational and Transactional Leadership," *Journal of Applied Psychology*, Vol. 88, No. 2, 2003, pp. 207–218.

Beal, Daniel J., Robin R. Cohen, Michael J. Burke, and Christy L. McLendon, "Cohesion and Performance in Groups: A Meta-Analytic Clarification of Construct Relations," *Journal of Applied Psychology*, Vol. 88, No. 6, 2003, pp. 989–1004.

Ben-Shalom, Uzi, Zeev Lehrer, and Eyal Ben-Ari, "Cohesion During Military Operations," *Armed Forces and Society*, Vol. 32, No. 1, 2005, pp. 63–79.

Bernthal, Paul R., and Chester A. Insko, "Cohesiveness Without Groupthink: The Interactive Effects of Social and Task Cohesion," *Group & Organization Management*, Vol. 18, No. 1, 1993, pp. 66–87.

Bowers, Clint A., James A. Pharmer, and Eduardo Salas, "When Member Homogeneity Is Needed in Work Teams," *Small Group Research*, Vol. 31, No. 3, 2000, pp. 305–327.

Burke, C. Shawn, Kevin C. Stagl, Cameron Klein, Gerald F. Goodwin, Eduardo Salas, and Stanley M. Halpin, "What Type of Leadership Behaviors Are Functional in Teams? A Meta-Analysis," *The Leadership Quarterly*, Vol. 17, 2006, pp. 288–307.

Byrne, Donn Erwin, *The Attraction Paradigm*, New York: Academic Press, 1971.

Cannon-Bowers, Janis A., and Eduardo Salas, "Team Performance and Training in Complex Environments: Recent Findings from Applied Research," *Current Directions in Psychological Science*, Vol. 7, No. 3, 1998, pp. 83–87.

Carless, Sally A., and Caroline de Paola, "The Measurement of Cohesion in Work Teams," *Small Group Research*, Vol. 31, No. 1, 2000, p. 71.

Carron, Albert V., and Lawrence R. Brawley, "Cohesion: Conceptual and Measurement Issues," *Small Group Research*, Vol. 31, No. 1, 2000, pp. 89–106.

Carron, Albert V., Steven R. Bray, and Mark A. Eys, "Team Cohesion and Team Success in Sport," *Journal of Sports Sciences*, Vol. 20, No. 2, 2002, pp. 119–126.

Casey-Campbell, Milly, and Martin L. Martens, "Sticking It All Together: A Critical Assessment of the Group Cohesion–Performance Literature," *International Journal of Management Reviews*, Vol. 11, No. 2, 2009, pp. 223–246.

Chang, Artemis, and Prashant Bordia, "A Multidimensional Approach to the Group Cohesion–Group Performance Relationship," *Small Group Research*, Vol. 32, No. 4, 2001, p. 379.

Chatman, Jennifer A., and Francis J. Flynn, "The Influence of Demographic Composition on the Emergency and Consequences of Cooperative Norms in Groups," *Academy of Management Journal*, Vol. 44, 2001, pp. 956–974.

Chatman, Jennifer A., Jeffrey T. Polzer, Sigal G. Barsade, and Margaret A. Neale, "Being Different Yet Feeling Similar: The Influence of Demographic Composition and Organizational Culture on Work Processes and Outcomes," *Administrative Science Quarterly*, Vol. 43, No. 4, 1998, pp. 749–780.

Chiocchio, François, and Hélène Essiembre, "Cohesion and Performance: A Meta-Analytic Review of Disparities Between Project Teams, Production Teams, and Service Teams," *Small Group Research*, Vol. 40, No. 4, 2009, pp. 382–420.

Cohen, Jacob, *Statistical Power Analysis for the Behavioral Sciences*, 2nd ed., Hillsdale, N.J.: Lawrence Erlbaum Associates, 1988.

Cota, Albert A., Charles R. Evans, Kenneth L. Dion, and Lindy Kilik, "The Structure of Group Cohesion," *Personality and Social Psychology Bulletin*, Vol. 21, No. 6, 1995, pp. 572–580.

De Dreu, Carsten K. W., and Laurie R. Weingart, "Task Versus Relationship Conflict, Team Performance, and Team Member Satisfaction: A Meta-Analysis," *Journal of Applied Psychology*, Vol. 88, No. 4, 2003, pp. 741–749.

Deluga, Ronald J., "The Relation Between Trust in the Supervisor and Subordinate Organizational Citizenship Behavior," *Military Psychology*, Vol. 7, No. 1, 1995, p. 1.

Dion, Kenneth L., "Group Cohesion: From 'Field of Forces' to Multidimensional Construct," *Group Dynamics: Theory, Research, and Practice*, Vol. 4, No. 1, 2000, pp. 7–26.

Dirks, Kurt T., "The Effects of Interpersonal Trust on Work Group Performance," *Journal of Applied Psychology*, Vol. 84, No. 3, 1999, pp. 445–455.

DoDD—*see* U.S. Department of Defense.

Dvir, Taly, Dov Eden, Bruce J. Avolio, and Boas Shamir, "Impact of Transformational Leadership on Follower Development and Performance: A Field Experiment," *Academy of Management Journal*, Vol. 45, No. 4, August 2002, pp. 735–744.

Fazio, R. H., and M. P. Zanna, "Direct Experience and Attitude-Behavior Consistency," in L. Berkowitz, ed., *Advances in Experimental Social Psychology*, Vol. 14, New York: Academic Press, 1981, pp. 161–202.

Garvey, Gerald J., and John J. DiIulio, Jr., "Only Connect: Cohesion vs. Combat Effectiveness; Ban on Gay Military Personnel," *The New Republic*, April 26, 1993, pp. 18–21.

Greenberg, J., S. Solomon, and T. Pyszczynski, "Terror Management Theory of Self-Esteem and Cultural Worldviews," in Mark P. Zanna, ed., *Advances in Experimental Social Psychology*, Vol. 29, San Diego, Calif.: Academic Press, 1997, pp. 61–139.

Grice, R. L., and L. C. Katz, *Cohesion in Military and Aviation Psychology: An Annotated Bibliography and Suggestions for U.S. Army Aviation*, Arlington, Va.: United States Army Research Institute for the Behavioral and Social Sciences, TR1166, 2005. As of October 30, 2010:
http://www.hqda.army.mil/ari/pdf/TR1166.pdf

Griffith, James, "Measurement of Group Cohesion in U.S. Army Units," *Basic and Applied Social Psychology*, Vol. 9, No. 2, 1988, pp. 149–171.

———, "The Army's New Unit Personnel Replacement and Its Relationship to Unit Cohesion and Social Support," *Military Psychology*, Vol. 1, No. 1, 1989, p. 17.

———, "Multilevel Analysis of Cohesion's Relation to Stress, Well-Being, Identification, Disintegration, and Perceived Combat Readiness," *Military Psychology*, Vol. 14, No. 3, 2002, pp. 217–239.

———, "Being a Reserve Soldier: A Matter of Social Identity," *Armed Forces and Society*, Vol. 36, No. 1, 2009, pp. 38–64.

Grinker, Roy R., and John P. Spiegel, *Men Under Stress*, Philadelphia: Blakiston Company, 1945.

Gully, Stanley M., Dennis J. Devine, and David J. Whitney, "A Meta-Analysis of Cohesion and Performance: Effects of Levels of Analysis and Task Interdependence," *Small Group Research*, Vol. 26, No. 4, 1995, pp. 497–520.

Harrell, Margaret C., and Laura L. Miller, *New Opportunities for Military Women: Effects Upon Readiness, Cohesion, and Morale*, Santa Monica, Calif.: RAND Corporation, MR-896-OSD, 1997. As of October 28, 2010:
http://www.rand.org/pubs/monograph_reports/MR896/

Harrison, David A., Kenneth H. Price, and Myrtle P. Bell, "Beyond Relational Demography: Time and the Effects of Surface- and Deep-Level Diversity on Work Group Cohesion," *Academy of Management Journal*, Vol. 41, No. 1, 1998, pp. 96–107.

Harrison, David A., Kenneth H. Price, Joanne H. Gavin, and Anna T. Florey, "Time, Teams, and Task Performance: Changing Effects of Surface- and Deep-Level Diversity on Group Functioning," *Academy of Management Journal*, Vol. 45, No. 5, 2002, pp. 1029–1045.

Henderson, Wm. Darryl, *Cohesion: The Human Element in Combat*, Washington, D.C.: National Defense University Press, 1985. As of November 8, 2010:
http://www.au.af.mil/au/awc/awcgate/ndu/cohesion/index.htm

Herek, Gregory M., and Linda D. Garnets, "Sexual Orientation and Mental Health," *Annual Review of Clinical Psychology*, Vol. 3, 2007, pp. 353–375.

Hogg, Michael A., and Deborah J. Terry, "Social Identity and Self-Categorization Processes in Organizational Contexts," *Academy of Management Review*, Vol. 25, No. 1, 2000, pp. 121–140.

Hoigaard, Rune, Reidar Safvenbom, and Finn Egil Tonnessen, "The Relationship Between Group Cohesion, Group Norms, and Perceived Social Loafing in Soccer Teams," *Small Group Research,* Vol. 37, 2006, pp. 217–232.

Hong, Lu, and Scott E. Page, "Groups of Diverse Problem Solvers Can Outperform Groups of High-Ability Problem Solvers," *Proceedings of the National Academy of Sciences of the United States of America*, Vol. 101, No. 46, 2004, pp. 16385–16389.

Horwitz, Sujin K., and Irwin B. Horwitz, "The Effects of Team Diversity on Team Outcomes: A Meta-Analytic Review of Team Demography," *Journal of Management*, Vol. 33, No. 6, 2007, pp. 987–1015.

Jackson, Susan E., Aparna Joshi, and Niclas L. Erhardt, "Recent Research on Team and Organizational Diversity: SWOT Analysis and Implications," *Journal of Management*, Vol. 29, No. 6, 2003, p. 801.

Janis, I., *Groupthink*, 2nd ed., Boston: Houghton Mifflin, 1982.

Jordan, Mark H., Hubert S. Field, and Achilles A. Armenakis, "The Relationship of Group Process Variables and Team Performance: A Team-Level Analysis in a Field Setting," *Small Group Research*, Vol. 33, No. 1, 2002, p. 121.

Joshi, Aparna, and Hyuntak Roh, "The Role of Context in Work Team Diversity Research: A Meta-Analytic Review," *Academy of Management Journal*, Vol. 52, No. 3, 2009, pp. 599–627.

Judge, Timothy A., and Ronald F. Piccolo, "Transformational and Transactional Leadership: A Meta-Analytic Test of Their Relative Validity," *Journal of Applied Psychology*, Vol. 89, No. 5, 2004, pp. 755–768.

Kaplan, Danny, and Amir Rosenmann, *Presence of Openly Gay Soldiers in IDF Does Not Undermine Unit Social Cohesion*, Ramat Gan, Israel: Bar-Ilan University, research report submitted to the Michael D. Palm Center, June 2010. As of November 8, 2010:
http://www.palmcenter.org/publications/dadt/
presence_openly_gay_soldiers_idf_does_not_undermine_unit_social_cohesion

Keithly, D. M., and J. J. Tritten, "A Charismatic Dimension of Military Leadership," *Journal of Political and Military Sociology*, Vol. 23, 1997, pp. 131–146.

Kelty, R., "Citizen Soldiers and Civilian Contractors: Soldiers' Unit Cohesion and Retention Attitudes in the 'Total Force,'" *Journal of Political and Military Sociology*, Vol. 37, 2009.

Kier, Elizabeth, "Homosexuals in the U.S. Military: Open Integration and Combat Effectiveness," *International Security*, Vol. 23, No. 2, Fall 1998, pp. 5–39.

King, Eden B., Michelle R. Hebl, and Daniel J. Beal, "Conflict and Cooperation in Diverse Workgroups," *Journal of Social Issues*, Vol. 65, No. 2, 2009, pp. 261–285.

Knouse, S. B., *Keeping 'On Task': An Exploration of Task Cohesion in Diverse Military Teams*, Patrick Air Force Base, Fla.: Defense Equal Opportunity Management Institute, 1998.

———, *Diversity and Shared Mental Team Mental Models in the Military*, Patrick Air Force Base, Fla.: Defense Equal Opportunity Management Institute, 2001.

Kozlowski, Steve W. J., and Daniel R. Ilgen, "Enhancing the Effectiveness of Work Groups and Teams," *Psychological Science in the Public Interest (Wiley-Blackwell)*, Vol. 7, No. 3, 2006, pp. 77–124.

Kramer, Roderick M., "Trust and Distrust in Organizations: Emerging Perspectives, Enduring Questions," *Annual Review of Psychology*, Vol. 50, 1999, pp. 569–598.

Lee, Adrienne Y., Gary D. Bond, Deborah C. Russell, Jeremy Tost, Carlo González, and Pamela S. Scarbrough, "Team Perceived Trustworthiness in a Complex Military Peacekeeping Simulation," *Military Psychology*, Vol. 22, No. 3, 2010, pp. 237–261.

Leedom, Dennis K., and Robert Simon, "Improving Team Coordination: A Case for Behavior-Based Training," *Military Psychology*, Vol. 7, No. 2, 1995, p. 109.

MacCoun, Robert J., "Sexual Orientation and Military Cohesion: A Critical Review of the Evidence," in Gregory M. Herek, J. B. Jobe, and R. Carney, eds., *Out in Force: Sexual Orientation and the Military*, Chicago: University of Chicago Press, 1996.

MacCoun, Robert J., Elizabeth Kier, and Aaron Belkin, "Does Social Cohesion Determine Motivation in Combat?" *Armed Forces and Society*, Vol. 32, No. 4, 2006, pp. 646–654.

Majchrzak, Ann, Sirkaa L. Jarvenpaa, and Andrea B. Hollingshead, "Coordinating Expertise Among Emergent Groups Responding to Disasters," *Organization Science*, Vol. 18, No. 1, 2007, pp. 147–161.

Manning, F. J., "Morale and Cohesion in Military Psychiatry," in F. D. Jones, L. R. Sparacino, V. L. Wilcox, and J. M. Rothberg, eds., *Textbook of Military Medicine*, Part I: *Military Psychiatry: Preparing in Peace for War*, Falls Church, Va.: U.S. Department of the Army, Office of the Surgeon General, 1994, pp. 2–18.

Marlowe, D. H., *Cohesion, Anticipated Breakdown, and Endurance in Battle: Considerations for Severe and High Intensity Combat*, Washington, D.C.: Walter Reed Army Institute of Research, 1979.

Marshall, S. L. A., *Men Against Fire: The Problem of Battle Command in Future War*, New York: William Morrow, 1947.

Mathieu, John, M. Travis Maynard, Tammy Rapp, and Lucy Gilson, "Team Effectiveness 1997–2007: A Review of Recent Advancements and a Glimpse into the Future," *Journal of Management*, Vol. 34, No. 3, 2008, pp. 410–476.

Mayer, Roger C., James H. Davis, and F. David Schoorman, "An Integrative Model of Organizational Trust," *Academy of Management Review*, Vol. 20, No. 3, 1995, pp. 709–734.

McAllister, Daniel J., "Affect- and Cognition-Based Trust as Foundations for Interpersonal Cooperation in Organizations," *The Academy of Management Journal*, Vol. 38, No. 1, 1995, pp. 24–59.

McKenna, Katelyn Y. A., and John A. Bargh, "Coming Out in the Age of the Internet: Identity 'Demarginalization' Through Virtual Group Participation," *Journal of Personality and Social Psychology*, Vol. 75, No. 3, 1998, pp. 681–694.

Meyerson, Debra, Karl E. Weick, and Roderick M. Kramer, "Swift Trust and Temporary Groups," in Roderick M. Kramer and Tom R. Tyler, eds., *Trust in Organizations: Frontiers of Theory and Research*, Thousand Oaks, Calif.: Sage Publications, Inc., 1996, pp. 166–195.

Moradi, Bonnie, and Laura Miller, "Attitudes of Iraq and Afghanistan War Veterans Toward Gay and Lesbian Service Members," *Armed Forces and Society*, Vol. 36, No. 3, April 2010, pp. 397–419.

Moskos, Charles C., "Vietnam: Why Men Fight," in Martin Oppenheimer, ed., *The American Military*, Transaction, Inc., 1971, pp. 16–36.

Mullen, Brian, and Carolyn Copper, "The Relation Between Group Cohesiveness and Performance: An Integration," *Psychological Bulletin*, Vol. 115, No. 2, 1994, pp. 210–227.

Nemeth, Charlan J., "Differential Contributions of Majority and Minority Influence," *Psychological Review*, Vol. 93, No. 1, 1986, pp. 23–32.

Nemeth, Charlan J., and Julianne L. Kwan, "Minority Influence, Divergent Thinking and Detection of Correct Solutions," *Journal of Applied Social Psychology*, Vol. 17, No. 9, 1987, pp. 788–799.

Nisbett, Richard E., and Timothy D. Wilson, "Telling More Than We Can Know: Verbal Reports on Mental Processes," *Psychological Review*, Vol. 84, No. 3, 1977, pp. 231–259.

Oliver, Laurel W., Joan Harman, Elizabeth Hoover, Stephanie M. Hayes, and Nancy A. Pandhi, "A Quantitative Integration of the Military Cohesion Literature," *Military Psychology*, Vol. 11, No. 1, 1999, pp. 57–83.

Ozer, Emily, Suzanne R. Best, Tami L. Lipsey, and Daniel S. Weiss, "Predictors of Posttraumatic Stress Disorder and Symptoms in Adults: A Meta-Analysis," *Psychological Bulletin*, Vol. 129, No. 1, 2003, pp. 52–73.

Pelled, Lisa Hope, Kathleen M. Eisenhardt, and Katherine R. Xin, "Exploring the Black Box: An Analysis of Work Group Diversity, Conflict, and Performance," *Administrative Science Quarterly*, Vol. 44, No. 1, 1999, pp. 1–28.

Peterson, F. W., *Predicting Group Performance Using Cohesion and Social Network Density: A Comparative Analysis*, thesis, Wright-Patterson Air Force Base, Ohio: Air Force Institute of Technology, 2007.

Peterson, Jeffrey D., *The Effect of Personnel Stability on Organizational Performance: Do Battalions with Stable Command Groups Achieve Higher Training Proficiency at the National Training Center?* dissertation, Santa Monica, Calif.: The Frederick S. Pardee RAND Graduate School, RGSD-234, 2008. As of October 30, 2010:
http://www.rand.org/pubs/rgs_dissertations/RGSD234/

Petrie, Keith J., Roger J. Booth, and James W. Pennebaker, "The Immunological Effects of Thought Suppression," *Journal of Personality and Social Psychology*, Vol. 75, No. 5, 1998, pp. 1264–1272.

Popper, Micha, "Leadership in Military Combat Units and Business Organizations: A Comparative Psychological Analysis," *Journal of Managerial Psychology*, Vol. 11, No. 1, 1996, pp. 15–23.

RAND—*see* RAND Corporation.

RAND Corporation, *Sexual Orientation and U.S. Military Personnel Policy: Options and Assessment*, Santa Monica, Calif., MR-323-OSD, 1993. As of October 11, 2010:
http://www.rand.org/pubs/monograph_reports/MR323/

Rosen, Leora N., Paul D. Bliese, Kathleen A. Wright, and Robert K. Gifford, "Gender Composition and Group Cohesion in U.S. Army Units: A Comparison Across Five Studies," *Armed Forces and Society*, Vol. 25, No. 3, 1999, pp. 365–386.

Rovio, Esa, Jari Eskola, Stephen A. Kozub, Joan L. Duda, and Taru Lintunen, "Can High Group Cohesion Be Harmful? A Case Study of a Junior Ice-Hockey Team," *Small Group Research*, Vol. 40, No. 421–435, 2009.

Salas, Eduardo, C. Shawn Burke, and Janis A. Cannon-Bowers, "Teamwork: Emerging Principles," *International Journal of Management Reviews*, Vol. 2, No. 4, 2000, p. 339.

Salas, Eduardo, Deborah Diaz Granados, Cameron Klein, C. Shawn Burke, Kevin C. Stagl, Gerald F. Goodwin, and Stanley M. Halpin, "Does Team Training Improve Team Performance? A Meta-Analysis," *Human Factors*, Vol. 50, No. 6, 2008, pp. 903–933.

Salas, Eduardo, Kevin C. Stagl, C. Shawn Burke, and Gerald F. Goodwin, "Fostering Team Effectiveness in Organizations: Toward an Integrative Theoretical Framework," in Bill Shuart, Will Spaulding, and Jeffrey Poland, eds., *Modeling Complex Systems*, Lincoln, Neb.: University of Nebraska Press, 2007, pp. 185–243.

Sargent, Leisa D., and Christina Sue-Chan, "Does Diversity Affect Group Efficacy? The Intervening Role of Cohesion and Task Interdependence," *Small Group Research*, Vol. 32, No. 4, 2001, p. 426.

Schaub, G., "Unit Cohesion and the Impact of DADT," *Strategic Studies Quarterly*, Vol. 4, No. 3, 2010, pp. 85–101.

Segal, D. R., and M. Kestnbaum, "Professional Closure in the Military Labor Market: A Critique of Pure Cohesion," in D. M. Snider and G. L. Watkins, eds., *The Future of the Army Profession*, New York: McGraw Hill, 2002, pp. 439–458.

Shamir, Boas, Esther Brainin, Eliav Zakay, and Micha Popper, "Perceived Combat Readiness as Collective Efficacy: Individual- and Group-Level Analysis," *Military Psychology*, Vol. 12, No. 2, 2000, pp. 105–119.

Shay, J., *Odysseus in America: Combat Trauma and the Trials of Homecoming*, New York: Scribner, 2002.

Shils, Edward A., and Morris Janowitz, "Cohesion and Disintegration in the Wehrmacht in World War II," *Public Opinion Quarterly*, Vol. 12, 1948, pp. 280–315.

Shore, Lynn M., Beth G. Chung-Herrera, Michelle A. Dean, Karen Holcombe Ehrhart, Don I. Jung, Amy E. Randel, and Gangaram Singh, "Diversity in Organizations: Where Are We Now and Where Are We Going?" *Human Resource Management Review*, Vol. 19, No. 2, 2009, pp. 117–133.

Siebold, Guy L., "The Essence of Military Group Cohesion," *Armed Forces and Society*, Vol. 33, No. 2, 2007, pp. 286–295.

Siebold, Guy L., and D. R. Kelly, *Development of the Combat Platoon Cohesion Questionnaire*, Alexandria, Va.: U.S. Army Research Institute for the Behavioral and Social Sciences, Technical Report 817, 1988.

Siebold, Guy L., and T. J. Lindsay, "The Relationship Between Demographic Descriptors and Soldier-Perceived Cohesion and Motivation," *Military Psychology*, Vol. 11, 2000, pp. 109–128.

Smith, M. D., and J. D. Hagman, *Pre- to Middeployment Assessment of Unit Focused Stability Impact on Cohesion*, Alexandria, Va.: U.S. Army Research Institute, TR1190, October 2006. As of October 30, 2010:
http://www.hqda.army.mil/ari/pdf/TR_1190.pdf

Spiszer, John M., "Leadership and Combat Motivation: The Critical Task," *Military Review*, Vol. 79, No. 3, 1999, p. 66.

Stogdill, R. M., "Group Productivity, Drive, and Cohesiveness," *Organizational Behavior and Human Performance*, Vol. 8, 1972, pp. 26–43.

Stouffer, Samuel A., Edward A. Suchman, Leland C. Devinney, Shirley A. Star, and Robin M. Williams, Jr., *The American Soldier: Adjustment During Army Life (Studies in Social Psychology in World War II,* Vol. 1*)*, Oxford: Princeton University Press, 1949.

Stout, Renée J., Janis A. Cannon-Bowers, Eduardo Salas, and Dana M. Milanovich, "Planning, Shared Mental Models, and Coordinated Performance: An Empirical Link Is Established," *Human Factors*, Vol. 41, No. 1, March 1999, pp. 61–71.

Swann, William B., Jr., Ángel Gómez, D. Conor Seyle, J. Francisco Morales, and Carmen Huici, "Identity Fusion: The Interplay of Personal and Social Identities in Extreme Group Behavior," *Journal of Personality and Social Psychology*, Vol. 96, No. 5, 2009, pp. 995–1011.

Tajfel, Henri, *Human Groups and Social Categories: Studies in Social Psychology*, New York: Cambridge University Press, 1981.

U.S. Air Force Instruction 10-201, *Status of Resources and Training System*, April 13, 2006.

U.S. Army Regulation 220-1, *Army Unit Status Reporting and Force Registration—Consolidated Policies*, April 15, 2010.

U.S. Department of Defense, Directive 7730.65, *Department of Defense Readiness Reporting System (DRRS)*, June 3, 2002.

Vaitkus, Mark, and James Griffith, "An Evaluation of Unit Replacement on Unit Cohesion and Individual Morale in the U.S. Army All-Volunteer Force," *Military Psychology*, Vol. 2, No. 4, 1990, p. 221.

Van den Berg, C. E., *Soldiers Under Threat: An Exploration of the Effect of Real Threat on Soldiers' Perceptions, Attitudes, and Morale*, Nijmegen, Netherlands: Radboud Universiteit Nijmegen, 2009.

Watson, Warren E., Kamalesh Kumar, and Larry K. Michaelsen, "Cultural Diversity's Impact on Interaction Process and Performance: Comparing Homogeneous and Diverse Task Groups," *Academy of Management Journal*, Vol. 36, No. 3, 1993, pp. 590–602.

Webber, Sheila Simsarian, "Development of Cognitive and Affective Trust in Teams: A Longitudinal Study," *Small Group Research*, Vol. 39, 2008, pp. 746–769.

Webber, Sheila Simsarian, and Lisa M. Donahue, "Impact of Highly and Less Job-Related Diversity on Work Group Cohesion and Performance: A Meta-Analysis," *Journal of Management*, Vol. 27, No. 2, 2001, p. 141.

Wellen, Jackie M., and Matthew Neale, "Deviance, Self-Typicality, and Group Cohesion: The Corrosive Effects of the Bad Apples on the Barrel," *Small Group Research*, Vol. 37, No. 2, 2006, pp. 165–186.

Williams, K. Y., and C. A. O'Reilly, "Demography and Diversity in Organizations: A Review of 40 Years of Research," *Research in Organizational Behavior*, Vol. 20, 1998, pp. 77–140.

Williams, Kip D., "Ostracism," *Annual Review of Psychology*, Vol. 58, 2007, pp. 425–452.

Wilson, Timothy D., "Know Thyself," *Perspectives on Psychological Science*, Vol. 4, No. 4, 2009, pp. 384–389.

Wilson, Timothy D., and Daniel T. Gilbert, "Affective Forecasting," in Mark P. Zanna, ed., *Advances in Experimental Social Psychology*, San Diego: Elsevier Academic Press, 2003, pp. 345–411.

Winkler, J. D., "Stability and Cohesion: How Much Is Needed?" in J. D. Winkler and B. A. Bicksler, eds., *The New Guard and Reserve*, San Ramon, Calif.: Falcon Books, 2008, pp. 29–44.

Wong, Leonard, "The Effects of Cohesion on Organizational Performance: A Test of Two Models," *Dissertation Abstracts International*, Vol. 53, No. 4-A, October 1992, p. 1217.

Wong, Leonard, Paul Bliese, and Dennis McGurk, "Military Leadership: A Context Specific Review," *The Leadership Quarterly*, Vol. 14, No. 6, 2003, pp. 657–692.

Wong, Leonard, Thomas A. Kolditz, R. A. Millen, and T. P. Potter, *Why They Fight: Combat Motivation in the Iraq War*, Carlisle, Pa.: Strategic Studies Institute, U.S. Army War College, 2003. As of October 30, 2010:
http://www.strategicstudiesinstitute.army.mil/pubs/display.cfm?pubID=179