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STABILITY AND CHANGE IN DIMENSIONS OF SOLDIER MORALE

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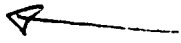
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19. ABSTRACT (Continue on reverse if necessary and identify by block number) Morale is a popular construct, but its meaning is not clear. This report describes a replication study on the factor structure of morale in US Army soldiers, and a more comprehensive study examining the factor structure of morale in American soldiers over time. Over a one-year period, results showed stability in some factors but somewhat different from that of soldiers stationed in the US. For all groups, seven factors emerged which tap aspects of the broad domains of morale, cohesion, and esprit. New soldiers display similar structures regardless of location or proximity to a potential battlefield. Over time, however, different structures emerge that reflect increased understanding of organizational goals, values, and social relations. Detailed factor results, including items and factor loadings, are provided. Morale measures based on these empirical results are suggested. 				
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STABILITY AND CHANGE IN DIMENSIONS OF SOLDIER MORALE

ABSTRACT

Although morale is a popular construct both within and outside the military, the concept is not a clear one. This ambiguity is reflected in a wide array of morale measures. In this report, a replication of a recent study on the factor structure of soldier morale is integrated with a more comprehensive study examining the structure of American soldier morale over time. The replication found four factors, two of which closely resemble those reported earlier (Gal & Manning, 1987). The more comprehensive study, using an expanded pool of items, identified seven factors. Data collected one year later on the same sample revealed stability in some morale factors, but change in others. U.S. soldiers stationed in Germany were more similar in their factor structure to samples examined in the earlier study. These findings show that (1) the structure of morale and soldier experience changes in meaningful ways over time, and (2) soldiers who are proximate to a potential battlefield differ from those more distant in terms of how morale is structured. New soldiers display similar structures regardless of proximity to a potential battlefield. But over time a different structure emerges that reflects increased understanding of organizational goals and social relations. These results

inform a conceptual framework in which competence, cohesion, and esprit form the essential sub-domains of fighting morale, a construct representing the tendency to strive collectively to master difficult and challenging tasks. It is suggested that measurement strategies based on these empirical results are likely to prove more accurate and useful than previous, conceptually-derived scales.

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STABILITY AND CHANGE IN DIMENSIONS OF SOLDIER MORALE

Several recent studies have used factor analysis to clarify the meaning of "morale" in military units (Gal, 1986; Gal & Manning, 1987). These efforts were spurred by the recognition that while morale is a concept with wide intuitive appeal, its meaning is often unclear. Motowidlo and associates documented a remarkable diversity in understandings of morale by military social scientists (Motowidlo & Borman, 1978; Motowidlo et. al., 1976). Conceptual and methodological ambiguities also surround the use of the term morale outside the military context (e.g., Nydegger, 1986). Psychologists, sociologists, and anthropologists have used "morale" to refer to a person's sense of psychological well-being, happiness, mood, alienation, or life satisfaction (e.g., Lawton, 1975; Lowenthal and Chiriboga, 1973; Lowenthal and Haven, 1968; Lohmann, 1980; Wood, Wylie and Shaefer, 1969). In a thoughtful examination of this problem, Lawton (1977) asserts "the fault lies not in the defenseless term 'morale', but in our sin of placing everything under the sun into a single bag for which we then required a

name" (p. 6). Before proceeding, a brief summary of the major theoretical conceptualizations of "morale" found in the literature is presented.

Three Conceptions of Morale

Although the term "morale" appears frequently in non-military contexts (e.g. Nydegger, 1977; Costa et. al., 1987), it is most often used with reference to military groups. Within the military, various understandings of morale can be classed into three categories based on underlying assumptions made about the nature of the phenomenon: (1) "individual", (2) "social", and (3) "mixed" (individual and social).

The first conception of morale treats it as an individual-level construct nearly exclusively. From this perspective, morale is a person's mood or state that may be influenced by a host of factors, from caring leaders to dry socks and hot food. A good historical example of this individualistic position is provided by Janis (1949), for whom morale consists primarily of job satisfaction. A more recent example is offered by Ewell (1982), who describes morale as the individual soldier's sense that "he will be taken care of through thick and thin" (p. 20).

This individual orientatation is the most frequent understanding of morale within the military community. It is the one presented most consistently in official U.S. Army publications. For example, the Army's field

manual on leadership (Dept. of the Army FM 22-100, 1983) enjoins leaders to develop morale by attending to the individual needs of their soldiers. Morale is seen largely as the level of contentment or satisfaction of individuals:

"Morale is defined as the mental, emotional, and spiritual state of the individual. It is how he feels - happy, hopeful, confident, appreciated, worthless, sad, unrecognized, or depressed."

(Dept. of the Army FM 22-100, p. 228)

Although the term "group morale" is sometimes used within this individualistic perspective, no actual group-level phenomena are implied. Rather, by "group morale" is meant the aggregated morale of individual group members. Social variables such as cohesiveness or teamwork are considered separately, under the heading of "esprit de corps" or just "esprit".

Quite a different conception of morale views it as nearly exclusively a property of the group, with no application to individuals outside of the social context. From this perspective, "individual morale" is simply the straightforward reflection of group-level phenomena. Many social scientist observers of the military hew to this model. This view often includes an emphasis on the subordination of individual concerns to the tasks and goals of the group. For example, Leighton (1943) maintained that morale is the capacity of a group of people to pull together consistently for a

common purpose. Grinker and Spiegel (1945) take a similar position. In their classic study of Army fliers in World War II, they define morale as "the psychological forces within a combat group which impel its men to get into the fight". Morale is high when the "...the men feel confident, satisfied, united, and eager..." (p. 37). English and English (1958) assert even more clearly that morale is "confidence in the group" and the "readiness to strive for group goals" (p. 328). Likewise Baynes (1967) sees morale as the "confident, resolute, willing, often self-sacrificing attitude of an individual to the functions or tasks demanded or expected of him by a group of which he is a part" (p. 108). What these positions have in common is the belief that individual morale is a reflection of group characteristics. For these authors, morale is an empty concept in the absence of a group referent.

A third category is represented by investigators who try to keep separate the notions of individual and group morale. For example, Ingraham and Manning (1981) suggest the term "cohesion" be reserved for those group level phenomena sometimes called "group morale", while the term "morale" be applied only in reference to individuals. Despite this distinction, these authors regard individual morale as strongly influenced by social phenomena. Individual morale is defined as "a psychological state of mind characterized by a sense of well-being based on confidence in the self and in

primary groups" (p. 6). Griffith (1985) takes a similar stance, and makes explicit the causal assumptions that underlie many "social" formulations of morale in arguing that, as a direct result of cohesiveness and group identity, individuals "...experience higher levels of morale, general well-being, satisfaction and commitment (p. V-4). Gabriel and Savage (1978) and Henderson (1985) also treat individual morale as largely a function of group dynamics, in particular of group cohesion.

An interesting variation on this position is offered by J. Glenn Gray (1959), who suggests that "fighting morale" is that kind of morale most relevant for soldiers. It reflects both individual confidence and skills, as well as a sense of identification and solidarity with the military group. Concerns about physical comfort do not enter into "fighting morale".

Morale is also an important concept outside the military context. For example, it appears frequently in the work of adult developmental psychologists, sociologists, and gerontologists (e.g., Lowenthal and Chiriboga, 1973; Lohman, 1977; Wood, Wylie and Schaefer, 1969). And although morale is most often here treated as an individual, psychological variable, beyond that there is just as much definitional confusion as within the military research community (cf. Lawton, 1977).

The lack of precision in meaning and usage prompts

necessary questions about the utility of the morale construct. If morale is a generic or "catch-all" term for other more specific constructs, then this needs to be specified, and the component constructs clearly described. If, on the other hand, morale is just another term for "happiness" or "well-being", then it's superfluous and confusing. Careful research into the nature and structure of morale in military groups is needed to determine the scientific utility of this popular construct. The knowledge that results should also be of value to those who employ the morale construct in non-military contexts.

A good example of such research is a recent study by Gal and Manning (1987). In an effort to identify the components of morale, they factor analyzed a small pool of relevant items in three samples: (1) Israeli soldiers, (2) U.S. soldiers stationed in the U.S., and (3) U.S. soldiers stationed in Germany. Very similar 4-factor solutions were reported for all three groups, described as a leadership factor ("confidence in senior commanders"), a group factor ("morale and cohesion"), and two individual factors ("soldierly level" and "worries"). Further analyses lead the authors to conclude that important cultural differences influence the structure of morale. For example, for U.S. soldiers morale is seen as more closely associated with technical concerns (e.g., weapons), while for Israeli soldiers it is more related to human issues (e.g.,

cohesion; p. 387). Gal and Manning also conclude that major situational variables, such as proximity to hostile forces, can affect the structure of morale in important ways. For example, their Israeli and U.S.-in-Germany samples appeared to attach higher salience to effective leadership than did U.S.-based soldiers (pp. 386-390).

The value of the Gal and Manning (1987) study is underscored by the questions it raises for further investigation. For example, would the cultural and situational effects noted by these authors also be observed in other samples of soldiers? In particular, are the conclusions regarding the structure of morale in American soldiers generalizable to all American soldiers, or are they specific to the samples observed by Gal and Manning? A replication study using different, perhaps larger and more representative samples is needed to address this question.

Additional issues merit consideration in studies of the factor structure of morale. What is an adequate and pool of items? The results of any factor analysis are only as valid as the items input into the analysis are relevant to the construct. Also, if proximity to a potential battlefield is indeed an important influence on the structure of morale, are there other major situational variables that might have similar strong effects? For example, does the length of time the unit

is together, or the soldier is with the unit, affect the way morale or experience is structured? Another way to phrase this question is, what is the stability of the factor structure of morale over time? The present study was undertaken to address these and related questions. This report describes (1) an attempted replication of the Gal and Manning study using a large and representative sample of U.S. Army soldiers, and (2) a more comprehensive investigation including an expanded pool of items, and exploring the factorial structure and possible dynamics of morale over time. Results of these investigations inform a model of "morale" which subsumes morale, cohesion, and esprit.

Overview of Method:

Both studies reported here draw upon survey data collected on a large sample (N=6,453) of U.S. Army soldiers in the lower enlisted ranks (E-1 to E-4). These soldiers had all volunteered for the Army, and at the time of the study ranged in age from 17-30 years (median = 20). Most (71%) were single (cf. Marlowe et. al., 1985 for more details on the larger study). All were assigned either to U.S. Army posts in Germany (N=1772), or to posts in the U.S. (N=4681). Surveys were administered as part of a longitudinal study of 137 Army companies (about 20% of total Army strength) conducted by the Department of Military Psychiatry, Walter Reed Army Institute of Research.

The Initial (replication) Study:

The first study replicated the work of Gal and Manning (1987), using a large sample of U.S. Army soldiers. Included in the Walter Reed survey was a shortened version of the "Unit Cohesion and Morale" scale developed by Gal (1983). These items provide exact or nearly-exact matches for 19 of the 28 items used by Gal and Manning (1987).¹ Three additional matching items were drawn from the Walter Reed survey, providing a total of 22-items for this replication (Appendix 1). The Gal/Manning items for which no matches were found concerned familiarity with terrain, mission, and location of enemy and friendly forces. The absence of such items here is not likely to affect results for two reasons. First, Gal and Manning found these items did not enter the factor solution for the U.S.-based sample. Second, in their other two samples (Israeli and Germany-based U.S.), these items loaded on a "soldierly level"/self-confidence factor, a domain well-represented in the present pool of 22-items.

¹ Tables 5 and 6 of the Gal/Manning report show that 29 items were used with their Israeli sample, 28 for U.S. soldiers stationed in Germany, and 27 for U.S. soldiers in the U.S. (pp. 383-386).

Analyses:

Respondents with complete data on all 22-items at the first administration point were included in this study (N=6,453). The factor extraction method was the principal axis (sometimes called principal components) method provided by Version 5 of SAS (SAS, 1985) under its "Factor" procedure. A varimax (orthogonal) rotation was applied to this solution, and a Scree plot of eigenvalues examined to help determine the number of factors (Kim & Mueller, 1978a & 1978b). To test the Gal/Manning hypothesis that proximity to hostile forces affects the structure of morale, the same procedures were repeated for sub-samples of Germany-based (N=1772) and U.S.-based (N=4681) soldiers.

Results:

The results of the factor analysis on the total sample are displayed in Table 1. By the Scree test criterion, four factors were kept, accounting for 56.2% of the variance. These factors were identified as (1) Senior Command Confidence (19.1%), Unit Trust & Cohesion (15.7%), Confidence in Self & Crew (11.3%), and Team/Weapons Combat Readiness (10.1%).

Not surprisingly given its larger size, the solution for the U.S.-based sample (USA) closely resembled that for the total group, and accounted for 56.6% of the variance (Table 2). Again, four factors emerged: (1) Senior Command Confidence (19.3%), (2) Unit

Trust & Cohesion (16.6%), (3) Confidence in Self & Crew (11.7%), and (4) Team/Weapons Combat Readiness (9.1%).

Four factors also appeared for the Germany-based U.S. sample (USG), accounting for 55.5% of the variance (Table 3). These were (1) Senior Command Confidence (18.8%), (2) Team/Weapons Combat Readiness (14.0%), (3) Unit Trust & Cohesion (12.2%), and (4) Confidence in Self & Crew (10.6%). These factor solutions accounted for relatively high amounts of total variance, 56% for the Germany sample and 57% for the U.S. sample. By comparison, the Gal and Manning solutions accounted for less variance (36-47%).

Discussion:

First comparing the findings for the Germany and U.S.-based samples, three of the four factors are virtually identical: Senior Command Confidence, Unit Trust & Cohesion, and Confidence in Self & Crew. The remaining factor suggests somewhat different dimensions in the two samples. In the U.S. sample, this rather sparse (3-items) factor reflects nearly exclusively concerns about weapons systems. By contrast, in the Germany sample these weapons items group together with concerns about combat readiness, training, and cooperative effort. For U.S. soldiers in Germany then, this factor represents a more comprehensive and salient dimension of unit combat readiness, including both technical (weapons) and human (teamwork, training) resources. It would seem that being physically closer to a

potential military adversary (the Warsaw Pact) leads to a special premium being placed on teamwork and weapons readiness.

This expanded dimension of "Team/Weapons Combat Readiness" in the Germany sample is quite similar to the first factor identified by Gal and Manning in both their USA and USG samples, which they labeled "unit readiness, morale, and cohesion". It includes concerns about the readiness of both personnel and equipment, as well as "togetherness" of unit members. For some reason then, the sample of U.S.-based soldiers examined by Gal and Manning is more like both their Germany sample and ours, and rather unlike our larger U.S.-based sample. This suggests that something other than geographic/ strategic location affects how morale gets structured in American soldiers.

One possible explanation for this is that the Gal/Manning USA sample, though physically located in the U.S., was nevertheless close in a psychological sense to potential combat. This would be the case, for example, if the unit was anticipating or preparing for deployment overseas. In fact, this unit is one of several in the U.S. Army that regularly rotates to Germany for a tour of duty (F. Manning, personal communication). The anticipation of deployment to a "front-line" zone, and associated preparatory activities may generate a "psychological closeness" to the potential battlefield that is equally as important as physical proximity in shaping soldier perceptions.

The Gal/Manning factor of Senior Command Confidence was also found in both of the present samples. As with their Israeli sample, this was the first factor to emerge. At first blush this might suggest a universal morale factor of confidence in senior leadership. But some caution is necessary, since there are good reasons to question the real meaning of this factor. The items that consistently load here inquire about confidence in the tactical decisions of senior leaders, from battalion commander up to the Army general staff. But soldiers in the U.S. Army have little if any direct experience of leaders above the company level. Most can form only the vaguest sense of what their brigade, division, or corps commanders are like. On what basis then are such items responded to? It is likely that responses reflect generalized attitudes about the organization rather than soldier assessments of specific leaders. That these items are so highly intercorrelated (.70 - .85) would support such an interpretation. Thus, although the factor is here labelled "Senior Command Confidence" on the basis of its manifest content, it is more likely a dimension of overall commitment to, or faith in the Army organization.

The remainder of these findings differ from those of Gal and Manning. The "soldierly level" factor found in all 3 Gal/Manning samples, though somewhat reminiscent of our "Confidence in Self and Crew", is completely self- or ego-oriented, lacking any social component. The analogous

factor in our samples shows self- confidence is closely intertwined with confidence in crew-mates for American soldiers. Also, no "personal worries or concerns" factor appears in our data, suggesting it may be peculiar to the samples, methods, or items used by Gal and Manning.²

Based on their findings, Gal & Manning offer two hypotheses regarding major influences on the structure of morale. One is cultural (Israeli versus American), and the other situational (i.e., proximity to potential battle). Since items directly concerning morale load together with items about weapons for their U.S. but not Israeli samples, Gal & Manning conclude that there is a cultural difference; morale involves technical aspects for U.S. soldiers moreso than for Israeli soldiers, for whom "...morale is associated more with human aspects".

(p. 387)³ While we have no data on Israeli soldiers with which to address this important question, the findings of this replication do not support the contention that morale has a more technical focus for U.S. soldiers. In both the present samples (Germany and U.S.-based), the direct morale items loaded with Unit Trust & Cohesion, not with the weapons items.

² There were no items in the present study that inquired directly about personal comfort, worries or concerns.

³ Somewhat surprisingly, items about weapons do not appear anywhere in the Gal & Manning factor solution for the IDF (Israeli) sample. This suggests that concerns about weapons are unrelated to cohesion, morale, or readiness for Israeli soldiers.

As regards the situational hypothesis, the present findings support the Gal/Manning argument that proximity to a potential battlefield exerts important effects on the structure of morale. U.S. soldiers in Germany display a more salient and comprehensive factor of "Team & Weapons Combat Readiness" than their U.S.-based counterparts. As discussed above, the fact that Gal & Manning found a similar factor in both their U.S. samples suggests that "psychological" proximity to battle may be as important as physical proximity.

In summary, these findings show that U.S. soldiers stationed in Germany are similar to both the Gal & Manning U.S. samples, while the present home-based U.S. sample is somewhat unique in its factor structure of morale. Two of the 4 Gal/Manning factors were replicated in our Germany sample, but only one in our U.S. sample.

For the next, more extended study, data from both the first and second administrations of the Walter Reed survey were analyzed, using an expanded pool of (83) relevant items. Items cover many aspects of the soldiers' experience, including perceptions about leaders, fellow soldiers, equipment, training and combat readiness, personal concerns, off-duty time, and confidence in self and unit. For most units, the first survey administration occurred within 1-3 months of the formation of the unit. The second administration occurred 10-12 months later. Only soldiers with complete data at both time points

(N=1902) were included.

Analyses:

The same analytic procedures described for the replication study were employed here. First, data for the total sample at Time 1 were examined, followed by the Time 2 data. Given the apparent importance of proximity to potential battle revealed in the replication study findings as well as in the Gal/Manning results, these data were also analyzed separately for U.S. soldiers stationed in Germany (N=508) and those stationed in the U.S. (N=1394).

Results:

Again applying the Scree test, 7 factors were retained at both Time 1 and Time 2. The T1 solution accounts for 50% of total variance (Table 4), and the T2 solution 52% (Table 5). Three factors remain essentially the same over time, though shifting slightly in order of appearance. These are "Company Commitment & Pride" (T1-factor1; T2-factor1), "Peer Support" (T1-factor3; T2-factor5), and "Senior Command Confidence" (T1-factor5; T2-factor6).

Two factors change moderately over time. One is "Competent NCOs", in which items about going to war with one's small unit show higher loadings at T2 than at T1 (e.g., "If we went to war tomorrow, I would feel good about going with my squad", .45 --> .59; "If we went to war tomorrow, I would feel good about going

with my platoon", .41 --> .56). Also, at T2 this factor includes confidence in the combat effectiveness of one's close fellows (crew, squad), and emerges sooner (as factor 2) than it did at T1 (factor 4).

The other factor that changes moderately also concerns perceptions of leaders. At T1 this (factor 2) is a general one of "Caring Leaders", including items about caring officers, nurturant NCOs, and a responsive chain-of-command (e.g., "My officers are interested in my personal welfare"; "My platoon sergeant talks to me personally outside normal duties"). But at T2 it (factor 3) involves caring officers exclusively. Thus, this factor at T1 appears as a generalized dimension of perceptions about superiors, while at T2 it represents Caring Officers distinctively from other leaders.

The remaining two factors change more dramatically over time. At T1, one dimension (factor 6) combines items about leisure time and condition of weapons systems, while another (factor 7) represents self-confidence. But at T2, a distinct "Leisure Time/Personal Growth" dimension emerges (factor 4); items about weapons systems no longer load on this factor. Instead, items about an effective chain-of-command now contribute. Also, a new factor of "Confidence in Self & Weapons" integrates self-confidence with confidence and pride in equipment and weapons.

When the U.S. soldiers in Germany (USG) are examined separately from their U.S. counterparts, the T1 solutions are nearly identical to that for the total sample. But the

T2 data do show some important differences. For the USA sample, concerns about weapons load together on the "Senior Command Confidence" factor, a situation not seen with any previous sample (Table 6). In the USG sample, leisure time concerns group with Caring Officers, and a separate factor of "Team/Weapons Combat Readiness" emerges (Table 7).

General Discussion:

The more comprehensive study reveals greater complexity in the structure of soldier morale than has been previously recognized. Not only is proximity to a potential battlefield important to how soldiers organize their experience, but some of these dimensions shift dramatically over time.

Across samples (USG and USA), three factors remain stable: Esprit, Senior Command Confidence, and Peer Support. Apparently, from a very early point (probably basic training), these are distinctive categories of experience for soldiers, and continue to be.

Changes over time in the remaining factors are all suggestive of a social-learning process, wherein soldiers develop a better understanding of the important parameters of their social environment as they spend more time in their units. For example, the data show that early on (T1) soldiers do not distinguish much between officers and NCOs. It appears the critical classifying variable is who is above one

in the organizational hierarchy, and exercises some measure of control over one's life. At T2 however, soldiers make a clear distinction between officers and NCOs, one which corresponds more accurately to very different organizational roles vis-a-vis the soldier. Also at T1, "condition of unit weapons systems" is grouped with "leisure time concerns", perhaps as new soldiers consider excessive time spent on weapons maintenance interferes with leisure activities. With time however, they seem to recognize the importance of weapons to individual and unit performance and survival in projected combat operations. It is at T2, and especially for U.S. soldiers stationed in Germany, that concerns about weapons become associated with crew combat readiness rather than leisure. Traditional conceptions of morale assume that while levels may change over time in response to changing conditions, the categories themselves are constant. Thus for example, the parameters of job satisfaction (a commonly understood aspect of morale; e.g., Guion, 1958) remain the same for both new and old employees. While various employees may be high or low, their reference points for job satisfaction do not change in any essential way; the dimension itself is stable. The present findings suggest this assumption of stability should be re-examined, especially as regards the conception and measurement of morale in soldiers. Our results indicate

there are aspects of morale that take some time to "crystallize" or become apparent as coherent dimensions. These are the aspects of morale that are heavily social in nature, involving cohesion, teamwork, and relationships with superiors. To the extent that measures of morale are based upon conceptual categories present in new units, they are likely to miss the essential nature of these more social dimensions. More appropriate instruments would be based on the structure observed in mature units, where the relevant categories of experience have had the chance to congeal. Of the data available to date, the factor structure for the U.S. sample in Germany at T2 (Table 7) provides the most appropriate basis for a set of morale measures that could be applied to other units. Scales based on these dimensions have shown good evidence of convergent, discriminant, and criterion-related validity in independent samples of U.S. Army soldiers (Bartone & Schneider, 1988).

An Empirically-Grounded Model of Morale, Cohesion, & Esprit

The studies described here reveal 7 dimensions of "morale" in military units. Some of these factors show significant shifts over time, and with respect to proximity of potential adversaries. At least for military personnel, these results permit the increased precision in the use of the morale concept called for by Lawton (1977). In this final section, the present findings are

used to inform a theoretical framework that includes the related constructs of morale, cohesion, and esprit.

As noted earlier, most theoretical positions on morale fall into one of three categories: (1) morale is primarily an "individual" phenomenon (e.g., job satisfaction); (2) morale is mostly a "social" phenomenon (e.g., group cohesion); and (3) morale involves both individual and social phenomena. These wide variations in perspective result in part from a failure to distinguish among the related constructs of morale, cohesion, and esprit. Further consideration of the present 7-factor solution indeed suggests three superordinate, or second-order factors. On conceptual grounds, 3 of the 7 factors represent aspects of cohesion, 2 reflect esprit, and 2 have to do with a sense of confidence in oneself and one's fellows (Figure 1). This latter dimension can be termed "competence morale".

The factors "Officer Perceptions" and "NCO Perceptions" form the essential elements of what has elsewhere been called Vertical Cohesion (cf. Marlowe, 1985; Vaitkus, 1986; Henderson, 1985). Such cohesion involves relationships across levels in a unit. Likewise, "Peer Support" is the basis of Horizontal Cohesion, or relationships within levels. Vertical and Horizontal cohesion are themselves elements of the higher-order category, Cohesion".

The factor "Company Commitment & Pride" captures what is often described as "esprit" in military groups (e.g., Dept. of the Army FM 22-100, 1983; Manning, 1988). This is especially true if the same concerns represented in this factor also operate above company level. It is a somewhat general dimension dominated by indicators of pride and identification with one's work organization, leaders and fellows. "Senior Command Confidence" is best understood as an expression of faith and commitment to the larger organization, rather than confidence in specific commanders. Thus it too should be considered an aspect of esprit, as esprit is thought to involve faith and pride in the organization.

"Confidence in Self & Crew" and "Team & Weapons Combat Readiness" represent a domain that is closer to what is often thought of as morale in military units, as distinct from cohesion and esprit. It involves a strong sense of competence, trust in one's crew-mates, pride in one's tools and equipment, and confidence in individual and group abilities to perform well. Rather than just "morale", a more precise term for this domain is "competence morale".

The factor analytic results thus suggest three important domains of experience for soldiers; cohesion, esprit, and competence morale. But data from various sources (e.g., Shils & Janowitz, 1948; Kozumplik, 1986; Marlowe, 1985) indicate these dimensions interact

somehow to generate a sense of group spirit and resilience that is related to combat effectiveness. An appropriate term for this over-arching construct is offered by Gray (1959), who called it "fighting morale"; that which leads men to stand and fight together vigorously in battle. Fighting morale is thus conceptually distinct from comfort morale, that which involves concerns about physical comfort and security (Bartone, 1987). No "comfort morale" factor emerged in the present analyses, an outcome best explained by the absence of items relevant to this dimension.⁴

It is apparent that fighting morale can fluctuate independently of comfort morale; one can be high while the other is low. There are many historical examples of military units in which morale remains high, despite extreme hardships and physical discomforts (cf. Kozumplik, 1986). Such examples point out the importance of distinguishing between aspects of morale that comprise fighting morale, and those that make up comfort morale. Failure to make this distinction is certainly responsible for some of the confusion surrounding the morale concept. For example, a number of authors have observed that morale seems to

⁴ A comprehensive measure of morale would include a scale(s) to assess comfort morale. The factor identified by Gal & Manning (1987) as "Worries and Concerns" is probably best understood as a comfort morale dimension, as it represents concerns about individual safety and well-being.

have special relevance for the performance of groups under pressure (Motowidlo and Borman, 1977), and indeed may be strengthened by the common experiencing of adverse conditions and obstacles (Ingraham and Manning, 1981). And yet for others, adverse conditions are likely to lower morale, as morale involves an individual's sense of comfort and being cared for (Ewell, 1982). But how can the same conditions both increase morale and decrease it? By keeping separate the notions of fighting morale and comfort morale, we can avoid much conceptual confusion around issues like this, and allow a more precise specification of the differential effects of various physical and social environmental conditions on each type of "morale".

The present findings suggest what are the essential features of fighting morale. The emphasis on self, crew and tools all indicate that competence, and a related sense of industry and meaning are at its core. In military units, the development and maintenance of this kind of morale would thus require frequent engagement in interesting and challenging training activities that exercise individual and team skills.⁵ Fighting morale also involves the presence of

⁵ In a convincing series of studies, Csikszentmihalyi (1975) and colleagues have shown that well-being or satisfaction (fighting morale?) is highest when the challenges presented by a task are closely matched by, but slightly higher than an individual's relevant skills.

strong social ties and a sense that daily activities are constructive and meaningful. In this respect, the present findings are similar to those reported in studies of morale and well-being among older adults. Life-span developmental psychologists have frequently observed that low morale in older people is closely associated with reduced social involvement and integration (e.g., Havighurst, Neugarten & Tobin, 1968; Lowenthal & Haven, 1968). Even mortality increases when long-standing social ties are broken (Lieberman, 1961). It appears the same kinds of circumstances that lead to high morale and spiritedness in older adults, i.e., purposeful social and work activities, also promote a sense of fighting morale in soldiers.

Based on the present results, a model of Fighting Morale was constructed (Figure 1). This model shows the three general sub-domains of fighting morale (competence morale, cohesion, and esprit), and the factors that define them. Using arrows, it also suggests possible pathways of influence among the domains.

The combined effects of the three sub-domains of competence morale, cohesion, and esprit result in overall low or high Fighting morale. But how might these sub-domains influence and interact with each other? While this is a question that should also be addressed empirically, some hypothesized relations can be suggested at this point.

It has recently been observed that some military units show low morale, despite high levels of cohesion (Marlowe et. al., 1988). This can happen, for example, when cohesive units become alienated from the larger organization, or when meaningful training activities are lacking. Still, small-unit cohesion likely has a strong influence on competence morale. When cohesion is high, the teamwork that is an integral aspect of competence morale for soldiers is fostered. Likewise, competence morale reinforces cohesion, in a feedback loop suggested by a broken line in Figure 1. As a sense of individual and team confidence grows through the collective mastery of challenging tasks, bonds among teammates are strengthened. The influence of competence morale on cohesion may be more pronounced at the high or low end of the spectrum. Such is apparently the case when, for example, firmly established horizontal cohesion in small units is eroded by low morale related to boring and inadequate training challenges (Marlowe et. al., 1988).

Given the composition of esprit revealed by the present analyses, cohesion should have an influence on this dimension too. As it represents a generalized pride in and commitment to one's organization, esprit will be affected to some extent by perceptions about unit social relations. In this regard, vertical cohesion, or relationships across levels within the organization, might have stronger effects than horizontal cohesion on

esprit. Still, the finding that esprit factors remain stable in structure over time for soldiers suggests esprit has more to do with a general acceptance of the values and goals of the organization than with the development of social relations in the unit.

On a theoretical basis, it seems equally likely that esprit would influence competence morale as vice-versa. High competence and high esprit would reinforce each other, as would low competence and low esprit. And while it is conceivable that competence morale could remain high (as it is rooted in individual/team competence and confidence) even when esprit is low, it is more difficult to conceive esprit being high when competence morale is low across a unit. Esprit, or organizational pride may provide the fertile seedbed in which both competence morale and cohesion can grow. But when morale and cohesion diminish, the symbols and insignia of unit pride and esprit lose their positive valence, and commitment to the organization is replaced by anger and alienation.

Conclusion

The studies reported here have shown that "morale" for U.S. soldiers consists of 7 factors, which are more precisely described as elements of 3 higher-order domains of cohesion, competence morale, and esprit. These in turn are conceived as sub-domains of an over-arching construct termed fighting morale, the sum-total

of social-psychological factors that facilitate collective and vigorous pursuit of challenging tasks.

The structure of these factors is influenced in important ways by time-with-unit, and by proximity of the unit to potential combat. Thus, a factor solution based on mature units (together at least one year), located near a potential adversary, is favored. Since such units are closer to the ideal in terms of military readiness, they should provide the reference point by which to assess competence, cohesion and esprit in other units. Scales based on these factors have demonstrated appropriate relations with other variables (convergent and discriminant validity) in independent samples of soldiers (Bartone and Schneider, 1988). Further factor analytic studies should determine if the present findings hold up in other groups, particularly for non-U.S. soldiers. Additional studies are also needed to determine the utility of these factors as indicators of competence morale, cohesion and esprit in other groups, military and non-military.

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Table 1: Factor Loadings for morale items, 4-factor (rotated) solution; Total sample (N=6453) *

Item	Factor 1	Factor 2	Factor 3	Factor 4
10. Confidence: Division Commander	.91			
11. Confidence: Corps Commander	.90			
9. Confidence: Brigade Commander	.87			
12. Confidence: Army General Staff	.86			
8. Confidence: Battalion Commander	.75	.30		
1. Level of Company Morale		.71		
18. Officer/Enlisted Relations		.68		
16. Level of Personal Morale		.61		
5. Confidence: Company Commander	.38	.60		
15. Togetherness of Unit Members		.58		
4. Confidence: Platoon Leader		.57		
21. My Company is Well-Trained		.48		.35
22. Have Time for Family/Friends		.42		
7. Confidence in Myself			.80	
14. Confidence in My Soldier Skills			.70	
20. Confidence in Self in Combat			.70	
6. Confidence in My Crew/Squad		.32	.52	
17. Condition of Unit Weapons Systems				.77
13. Confidence in Weapons Systems				.71
2. Company Combat Readiness		.31		.60
3. Fellow Soldiers' Combat Readiness			.36	.54

* Only loadings above .30 are displayed

Table 2: Factor Loadings for morale items, 4-factor (rotated) solution; U.S. based sample (N=4681) *

Item	Factor 1	Factor 2	Factor 3	Factor 4
10. Confidence: Division Commander	.91			
11. Confidence: Corps Commander	.90			
9. Confidence: Brigade Commander	.87			
12. Confidence: Army General Staff	.86			
8. Confidence: Battalion Commander	.76	.32		
1. Level of Company Morale		.71		
18. Officer/Enlisted Relations		.68		
5. Confidence: Company Commander	.38	.63		
15. Togetherness of Unit Members		.61		
4. Confidence: Platoon Leader		.59		
16. Level of Personal Morale		.58		
21. My Company is Well-Trained		.54		
22. Have Time for Family/Friends		.30		
7. Confidence in Myself			.79	
20. Confidence in Self in Combat			.70	
14. Confidence in My Soldier Skills			.69	
6. Confidence in My Crew/Squad		.38	.53	
3. Fellow Soldiers' Combat Readiness		.36	.42	.40
17. Condition of Unit Weapons Systems				.81
13. Confidence in Weapons Systems				.74
2. Company Combat Readiness		.38	.34	.47

* Only loadings above .30 are displayed

Table 3: Factor Loadings for morale items, 4-factor (rotated)
solution; Germany-based sample (N=1772) *

Item	Factor 1	Factor 2	Factor 3	Factor 4
10. Confidence: Division Commander	.91			
11. Confidence: Corps Commander	.91			
9. Confidence: Brigade Commander	.87			
12. Confidence: Army General Staff	.84			
8. Confidence: Battalion Commander	.71			
2. Company Combat Readiness		.72		
17. Condition of Unit Weapons Systems		.69		
13. Confidence in Weapons Systems		.68		
3. Fellow Soldiers' Combat Readiness		.64		
21. My Company is Well-Trained		.62		
15. Togetherness of Unit Members		.45	.44	
18. Officer/Enlisted Relations			.66	
22. Have Time for Family/Friends			.64	
1. Level of Company Morale		.34	.63	
16. Level of Personal Morale			.60	.34
4. Confidence: Platoon Leader			.50	
5. Confidence: Company Commander	.37	.33	.44	
7. Confidence in Myself				.81
14. Confidence in My Soldier Skills				.72
20. Confidence in Self in Combat				.71
6. Confidence in My Crew/Squad		.32		.47

* Only loadings above .30 are displayed

TABLE 4: MORALE FACTORS AND ITEM LOADINGS, T1 DATA, TOTAL SAMPLE (Prin. Components, Varimax Rotation, N=1,902)

ITEM	CONTENT	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
P4	THIS CO. MORE COMBAT READY THAN MOST	.68						
P1	THIS CO. IS ONE OF THE BEST IN THE ARMY	.68						
P32	THIS CO. BETTER TRAINED THAN MOST	.63						
P2	PEOPLE IN THIS CO. FEEL VERY CLOSE	.58		.40				
F2	I AM PROUD OF MY CO.	.57	.35					
F25	MY UNIT GETS THE JOB DONE	.56						
P20	LEVEL OF TRAINING IN THIS CO. VERY HIGH	.55						
P19	THIS CO. KNOWS HOW TO USE ITS WEAPONS	.54						
U15	SPIRIT OF TOGETHERNESS IN THIS UNIT	.54		.36				
U1	WHAT IS THE LEVEL OF MORALE IN YOUR CO.	.54						
P29	I LIKE BEING IN THIS CO.	.54	.39				.30	
F5	LO'S OF TEAMWORK IN THIS COMPANY	.54						
U2	COMPANY READINESS FOR COMBAT	.53			.32			.35
P12	THIS CO. HAS HIGH QUALITY LEADERS	.51	.40					
U3	FELLOW SOLDIERS' COMBAT READINESS	.48						.38
P31	PEOPLE IN CO. LOOK OUT FOR EACH OTHER	.47		.46				
F15	MY CO. WILL PLAY PART WINNING CONFLICTS	.47						.33
P35	TRUST IN FELLOW CO. SOLDIERS IN COMBAT	.47						
P28	PEOPLE IN CO. GET EVEN TIGHTER IN TIME	.46		.41				
F3	I REALLY FEEL I BELONG IN THIS CO.	.46	.36					.30
P25	WANT TO SPEND ALL ENLIST IN THIS CO.	.45	.32					
F24	MY LEADERS BETTER THAN IN OTHER UNITS	.44	.30		.32			
F6	SOLDIERS WILLINGLY COOPERATE WITH OFFICERS	.40	.35					
S14	OFFICERS INTERESTED MY PERSONAL WELFARE		.70					
S16	OFFICERS INTERESTED WHAT I THINK & FEEL		.67					
S13	CO. COMMANDER TALKS TO ME AS A PERSON		.61					
S12	PLATOON LEADER TALKS TO ME AS PERSON		.59					
S24	CO. OFFICERS GOOD TO SERVE UNDER COMBAT	.44	.58					
P33	CO. OFFICERS WOULD LEAD WELL IN COMBAT	.47	.51					
U1	QUALITY OF RELATION/OFFICERS & ENLIST	.32	.50					
P3	OFFICERS IN THIS CO. KNOW THEIR STUFF	.45	.49					
S20	MY PLATOON LEADER KNOWS HIS STUFF		.46		.37			
S11	PLATOON SERGEANT TALKS TO ME AS A PERSON		.45					
F8	SOLDIERS IN CO. DO ANTHING FOR OFFICERS	.36	.45					
S28	MY CHAIN OF COMMAND WORKS WELL	.30	.42				.34	
P26	SUPERIORS TRY TO TREAT ME AS A PERSON		.42	.35				
P17	CO. CH/OF/COMMAND HELPS W/ PERSONAL PROBS		.38				.31	
U4	CONFIDENCE IN COMBAT: PLATOON LEADER		.36					

ITEM	CONTENT	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
S8	MY PLATOON HELPS ME WITH PERSONAL PROBLEMS			.69				
S7	MY SQUAD HELPS ME WITH PERSONAL PROBLEMS			.69				
S9	MY SQUAD LENDS ME MONEY WHEN NEEDED			.68				
S10	MY PLATOON LENDS ME MONEY WHEN NEEDED			.67				
S4	I SPEND TIME WITH PLATOON AFTER DUTY HOURS			.63				
P9	I SPEND TIME WITH CO. AFTER DUTY HOURS			.57				
P10	MY CLOSEST FRIENDS ARE PEOPLE I WORK WITH			.52				
P23	DIFFERENT RACES IN CO. MIX AFTER HOURS	.37		.43				
P24	MOST PEOPLE IN CO. CAN BE TRUSTED	.42		.43				
P22	DIFFERENT RACES IN CO. MIX DURING WORK HOURS			.38				
P30	NO NEED TO WATCH BELONGINGS IN THIS CO.			.33				
S5	AFTER DUTY, RACES HANG OUT SEPARATELY			-.30				
P34	CO. NCOs WOULD LEAD WELL IN COMBAT	.32			.72			
S25	CO. NCOs GOOD TO SERVE UNDER IN COMBAT	.31			.68			
P6	NCOs IN THIS CO. KNOW THEIR STUFF	.33			.67			
S18	MY SQUAD LEADER KNOWS HIS STUFF				.60			
S17	NCOs ARE INTERESTED IN WHAT I THINK & FEEL		.37		.57			
S15	NCOs ARE INTERESTED IN MY PERSONAL WELFARE		.36		.57			
S19	MY PLATOON SERGEANT KNOWS HIS STUFF				.54			
F9	SOLDIERS IN CO. DO MOST ANYTHING FOR NCOs				.45			
S21	IF WAR, FEEL GOOD ABOUT GOING WITH MY SQUAD	.31	.32		.45			.35
F7	SOLDIERS WILLINGLY COOPERATE WITH NCOs	.33			.43			
S22	IF WAR, FEEL GOOD ABOUT GOING WITH PLATOON	.39			.41			
U10	TACTICAL CONFIDENCE: DIVISION COMMANDER					.86		
U11	TACTICAL CONFIDENCE: CORPS COMMANDER					.85		
U9	TACTICAL CONFIDENCE: BRIGADE COMMANDER					.83		
U12	TACTICAL CONFIDENCE: ARMY GENERAL STAFF					.82		
U8	TACTICAL CONFIDENCE: BATTALION COMMANDER					.71		
U5	CONFIDENCE IN COMBAT: CO. COMMANDER	.38	.40			.41		
F17	ENOUGH TIME FOR RELAXATION & ENTERTAINMENT						.70	
F16	ENOUGH TIME TO TAKE CARE OF PERSONAL NEEDS						.68	
F18	ENOUGH TIME FOR FAMILY AND FRIENDS						.67	
U17	CONDITION OF UNIT WEAPON SYSTEMS	.30					.43	
P18	I HAVE A LOT OF CONFIDENCE IN WEAPONS						.43	
U13	CONFIDENCE IN UNIT WEAPONS SYSTEMS	.32					.42	
F13	ARMY GIVES ME CHANCE TO BE ALL I CAN BE						.42	
F14	US ARMY EQUIPMENT IS BETTER THAN RUSSIAN						.34	
U7	CONFIDENCE IN COMBAT: SELF							.68
P21	A LOT OF CONFIDENCE IN SELF IN COMBAT							.65
U14	OWN SKILLS & ABILITY AS SOLDIER							.61
F4	I AM AN IMPORTANT PART OF THIS CO.		.33					.48
F1	I AM PROUD TO BE IN THE US ARMY							.46
U6	CONFIDENCE IN COMBAT: CREW/SQUAD MEMBER							.43
F10	WHAT I DO IN THE ARMY IS WORTHWHILE						.34	
U16	LEVEL OF PERSONAL MORALE	.32						.36

TABLE 5: MORALE FACTORS AND ITEM LOADINGS, T2 DATA, TOTAL SAMPLE (Prin. Components, Varimax Rotation, N=1,902)

ITEM	CONTENT	1	2	3	4	5	6	7
P4	THIS CO. MORE COMBAT READY THAN MOST	.69						
P1	THIS CO. IS ONE OF THE BEST IN THE ARMY	.68						
P2	PEOPLE IN THIS CO. FEEL VERY CLOSE	.66				.38		
P32	THIS CO. BETTER TRAINED THAN MOST	.64						
F5	LOTS OF TEAMWORK IN THIS COMPANY	.63						
F2	I AM PROUD OF MY CO.	.62			.31			
U15	SPIRIT OF TOGETHERNESS IN THIS UNIT	.61				.32		
F25	MY UNIT GETS THE JOB DONE	.59						
P28	PEOPLE IN CO. GET EVEN TIGHTER IN TIME	.58				.32		
U1	WHAT IS THE LEVEL OF MORALE IN YOUR CO.	.57						
P29	I LIKE BEING IN THIS CO.	.56			.38			
P12	THIS CO. HAS HIGH QUALITY LEADERS	.55	.33		.34			
F24	MY LEADERS BETTER THAN IN OTHER UNITS	.55	.31					
P31	PEOPLE IN CO. LOOK OUT FOR EACH OTHER	.54				.42		
P20	LEVEL OF TRAINING IN THIS CO. VERY HIGH	.53						
F3	I REALLY FEEL I BELONG IN THIS CO.	.53			.32			.34
P19	THIS CO. KNOWS HOW TO USE ITS WEAPONS	.50						
P35	TRUST IN FELLOW CO. SOLDIERS IN COMBAT	.49					.34	
U2	COMPANY READINESS FOR COMBAT	.48						.38
F15	MY CO. WILL PLAY PART WINNING CONFLICTS	.48						
P25	WANT TO SPEND ALL ENLIST IN THIS CO.	.46						
F6	SOLDIERS WILLINGLY COOPERATE WITH OFFICERS	.44		.39				
F7	SOLDIERS WILLINGLY COOPERATE WITH NCOS	.42	.32		.39			
U3	FELLOW SOLDIERS' COMBAT READINESS	.42					.30	
P24	MOST PEOPLE IN CO. CAN BE TRUSTED	.42				.37		
F9	SOLDIERS IN CO. DO MOST ANYTHING FOR NCOS	.37	.36		.37			
P30	NO NEED TO WATCH BELONGINGS IN THIS CO.	.30						
S25	CO. NCOS GOOD TO SERVE UNDER IN COMBAT	.36	.64					
P34	CO. NCOS WOULD LEAD WELL IN COMBAT	.40	.62					
S21	IF WAR, FEEL GOOD ABOUT GOING WITH MY SQUAD	.31	.59					
S18	MY SQUAD LEADER KNOWS HIS STUFF	.45	.58					
P6	NCOS IN THIS CO. KNOW THEIR STUFF	.45	.58					
S19	MY PLATOON SERGEANT KNOWS HIS STUFF	.38	.57					
S22	IF WAR, FEEL GOOD ABOUT GOING WITH PLATOON	.38	.56					
S15	NCOS ARE INTERESTED IN MY PERSONAL WELFARE		.55	.31	.34			
S17	NCOS ARE INTERESTED IN WHAT I THINK & FEEL		.53		.40			.34
U6	CONFIDENCE IN COMBAT: CREW/SQUAD MEMBER		.49					
S11	PLATOON SERGEANT TALKS TO ME AS A PERSON		.39	.38				

ITEM	CONTENT	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
S14	OFFICERS INTERESTED MY PERSONAL WELFARE			.67				
S16	OFFICERS INTERESTED WHAT I THINK & FEEL			.65				
S12	PLATOON LEADER TALKS TO ME AS PERSON			.60	.31			
S13	CO. COMMANDER TALKS TO ME AS A PERSON			.59				
S24	CO. OFFICERS GOOD TO SERVE UNDER COMBAT	.42		.59				
P33	CO. OFFICERS WOULD LEAD WELL IN COMBAT	.45		.56				
P3	OFFICERS IN THIS CO. KNOW THEIR STUFF	.47		.52				
S20	MY PLATOON LEADER KNOWS HIS STUFF		.38	.50				
U18	QUALITY OF RELATION/OFFICERS & ENLIST	.34		.50				
F8	SOLDIERS IN CO. DO ANYTHING FOR OFFICERS	.39		.45				
U4	CONFIDENCE IN COMBAT: PLATOON LEADER		.43	.44				
U5	CONFIDENCE IN COMBAT: CO. COMMANDER	.37		.39				
F18	ENOUGH TIME FOR FAMILY AND FRIENDS				.69			
F17	ENOUGH TIME FOR RELAXATION & ENTERTAINMENT				.67			
F16	ENOUGH TIME TO TAKE CARE OF PERSONAL NEEDS				.63			
F13	ARMY GIVES ME CHANCE TO BE ALL I CAN BE				.52			
P26	SUPERIORS TRY TO TREAT ME AS A PERSON	.32	.34	.31	.49			
S28	MY CHAIN OF COMMAND WORKS WELL	.32		.31	.46			
P17	CO. CH/OF/COMMAND HELPS W/ PERSONAL PROBS			.30	.44			.43
F10	WHAT I DO IN THE ARMY IS WORTHWHILE				.44			.35
U16	LEVEL OF PERSONAL MORALE	.32			.36			
S8	MY PLATOON HELPS ME WITH PERSONAL PROBLEMS					.70		
S9	MY SQUAD LENDS ME MONEY WHEN NEEDED					.69		
S10	MY PLATOON LENDS ME MONEY WHEN NEEDED					.69		
S7	MY SQUAD HELPS ME WITH PERSONAL PROBLEMS					.69		
S4	I SPEND TIME WITH PLATOON AFTER DUTY HOURS					.64		
P9	I SPEND TIME WITH CO. AFTER DUTY HOURS					.58		
P10	MY CLOSEST FRIENDS ARE PEOPLE I WORK WITH					.54		
P23	DIFFERENT RACES IN CO. MIX AFTER HOURS	.30				.42		
P22	DIFFERENT RACES IN CO. MIX DURING WORK HOURS	.31		.30		.36		
U10	TACTICAL CONFIDENCE: DIVISION COMMANDER						.85	
U11	TACTICAL CONFIDENCE: CORPS COMMANDER						.84	
U9	TACTICAL CONFIDENCE: BRIGADE COMMANDER						.82	
U12	TACTICAL CONFIDENCE: ARMY GENERAL STAFF						.80	
U8	TACTICAL CONFIDENCE: BATTALION COMMANDER						.67	
U7	CONFIDENCE IN COMBAT: SELF							.66
P21	A LOT OF CONFIDENCE IN SELF IN COMBAT							.66
F14	US ARMY EQUIPMENT IS BETTER THAN RUSSIAN							.64
U13	CONFIDENCE IN UNIT WEAPONS SYSTEMS							.47
P18	I HAVE A LOT OF CONFIDENCE IN WEAPONS				.34			.46
F1	I AM PROUD TO BE IN THE US ARMY				.34			.45
U14	OWN SKILLS & ABILITY AS SOLDIER							.43
U17	CONDITION OF UNIT WEAPON SYSTEMS							.43
F4	I AM AN IMPORTANT PART OF THIS CO.	.33						.42

TABLE 6: MORALE FACTORS AND ITEM LOADINGS, T2 DATA, USA SAMPLE (Prin. Components, Varimax Rotation, N=1,902)

ITEM	CONTENT	FACTOR						
		1	2	3	4	5	6	7
P4	THIS CO. MORE COMBAT READY THAN MOST	.69						
P1	THIS CO. IS ONE OF THE BEST IN THE ARMY	.67						
P32	THIS CO. BETTER TRAINED THAN MOST	.64						
F25	MY UNIT GETS THE JOB DONE	.60						
F2	I AM PROUD OF MY CO.	.59	.37					
P2	PEOPLE IN THIS CO. FEEL VERY CLOSE	.59					.41	
U15	SPIRIT OF TOGETHERNESS IN THIS UNIT	.56					.36	
F5	LOTS OF TEAMWORK IN THIS COMPANY	.56					.31	
F24	MY LEADERS BETTER THAN IN OTHER UNITS	.53		.33				
P20	LEVEL OF TRAINING IN THIS CO. VERY HIGH	.53						
P19	THIS CO. KNOWS HOW TO USE ITS WEAPONS	.53		.30				
U1	WHAT IS THE LEVEL OF MORALE IN YOUR CO.	.52	.32					
F15	MY CO. WILL PLAY PART WINNING CONFLICTS	.52						.30
U2	COMPANY READINESS FOR COMBAT	.52				.39		
P28	PEOPLE IN CO. GET EVEN TIGHTER IN TIME	.51	.32				.37	
P12	THIS CO. HAS HIGH QUALITY LEADERS	.50	.39	.34	.30			
P29	I LIKE BEING IN THIS CO.	.49	.47					
P35	TRUST IN FELLOW CO. SOLDIERS IN COMBAT	.48						
F3	I REALLY FEEL I BELONG IN THIS CO.	.48	.39					
U3	FELLOW SOLDIERS' COMBAT READINESS	.48				.34		
P31	PEOPLE IN CO. LOOK OUT FOR EACH OTHER	.45	.33				.43	
F6	SOLDIERS WILLINGLY COOPERATE WITH OFFICERS	.41			.40			
P25	WANT TO SPEND ALL ENLIST IN THIS CO.	.41	.37					
U5	CONFIDENCE IN COMBAT: CO. COMMANDER	.40			.35	.33		
P24	MOST PEOPLE IN CO. CAN BE TRUSTED	.37					.34	
F18	ENOUGH TIME FOR FAMILY AND FRIENDS		.70					
F17	ENOUGH TIME FOR RELAXATION & ENTERTAINMENT		.67					
F16	ENOUGH TIME TO TAKE CARE OF PERSONAL NEEDS		.63					
P26	SUPERIORS TRY TO TREAT ME AS A PERSON		.55	.31	.33			
F13	ARMY GIVES ME CHANCE TO BE ALL I CAN BE		.53					
S28	MY CHAIN OF COMMAND WORKS WELL		.50					
F10	WHAT I DO IN THE ARMY IS WORTHWHILE		.49					.40
P17	CO. CH/OF/COMMAND HELPS W/ PERSONAL PROBS		.46		.32			
F7	SOLDIERS WILLINGLY COOPERATE WITH NCOS		.43					
F9	SOLDIERS IN CO. DO MOST ANYTHING FOR NCOS		.40	.31				
U16	LEVEL OF PERSONAL MORALE		.40					.36
F1	I AM PROUD TO BE IN THE US ARMY		.40					.39
P18	I HAVE A LOT OF CONFIDENCE IN WEAPONS		.38					
P30	NO NEED TO WATCH BELONGINGS IN THIS CO.		.32					

ITEM	CONTENT	F1	F2	F3	F4	F5	F6	F7
S25	CO. NCOS GOOD TO SERVE UNDER IN COMBAT	.35	.31	.63				
S18	MY SQUAD LEADER KNOWS HIS STUFF			.62				
P34	CO. NCOS WOULD LEAD WELL IN COMBAT	.37	.31	.61				
S21	IF WAR, FEEL GOOD ABOUT GOING WITH MY SQUAD	.33		.60				
S19	MY PLATOON SERGEANT KNOWS HIS STUFF			.58				
P6	NCOS IN THIS CO. KNOW THEIR STUFF	.42		.57				
S22	IF WAR, FEEL GOOD ABOUT GOING WITH PLATOON	.40		.56				
S15	NCOS ARE INTERESTED IN MY PERSONAL WELFARE		.39	.51	.35			
U6	CONFIDENCE IN COMBAT: CREW/SQUAD MEMBER			.51				
S17	NCOS ARE INTERESTED IN WHAT I THINK & FEEL		.45	.50	.34			
U4	CONFIDENCE IN COMBAT: PLATOON LEADER			.45	.41			
S14	OFFICERS INTERESTED MY PERSONAL JELFARE				.68			
S16	OFFICERS INTERESTED WHAT I THINK & FEEL		.34		.66			
S12	PLATOON LEADER TALKS TO ME AS PERSON			.30	.60			
S13	CO. COMMANDER TALKS TO ME AS A PERSON				.59			
S24	CO. OFFICERS GOOD TO SERVE UNDER COMBAT	.47			.54			
P33	CO. OFFICERS WOULD LEAD WELL IN COMBAT	.47			.52			
P3	OFFICERS IN THIS CO. KNOW THEIR STUFF	.48			.51			
U18	QUALITY OF RELATION/OFFICERS & ENLIST	.39			.49			
S20	MY PLATOON LEADER KNOWS HIS STUFF			.41	.47			
F8	SOLDIERS IN CO. DO ANTHING FOR OFFICERS	.38			.46			
S11	PLATOON SERGEANT TALKS TO ME AS A PERSON			.39	.40			
P23	DIFFERENT RACES IN CO. MIX AFTER HOURS				.38			37
S5	AFTER DUTY, RACES HANG OUT SEPARATELY				-.40			
U10	TACTICAL CONFIDENCE: DIVISION COMMANDER					.84		
U11	TACTICAL CONFIDENCE: CORPS COMMANDER					.83		
U9	TACTICAL CONFIDENCE: BRIGADE COMMANDER					.81		
U12	TACTICAL CONFIDENCE: ARMY GENERAL STAFF					.80		
U8	TACTICAL CONFIDENCE: BATTALION COMMANDER					.69		
U13	CONFIDENCE IN UNIT WEAPONS SYSTEMS					.39		
U17	CONDITION OF UNIT WEAPON SYSTEMS					.37		
S9	MY SQUAD LENDS ME MONEY WHEN NEEDED						.71	
S10	MY PLATOON LENDS ME MONEY WHEN NEEDED						.70	
S8	MY PLATOON HELPS ME WITH PERSONAL PROBLEMS						.70	
S7	MY SQUAD HELPS ME WITH PERSONAL PROBLEMS						.69	
S4	I SPEND TIME WITH PLATOON AFTER DUTY HOURS						.64	
P9	I SPEND TIME WITH CO. AFTER DUTY HOURS						.61	
P10	MY CLOSEST FRIENDS ARE PEOPLE I WORK WITH						.55	
P22	DIFFERENT RACES IN CO. MIX DURING WORK HOURS				.31		.34	.31
U7	CONFIDENCE IN COMBAT: SELF							.70
P21	A LOT OF CONFIDENCE IN SELF IN COMBAT							.64
U14	OWN SKILLS & ABILITY AS SOLDIER							.63
F4	I AM AN IMPORTANT PART OF THIS CO.		.35					.48

TABLE 7: MORALE FACTORS AND ITEM LOADINGS, T2 DATA, USC SAMPLE (Prin. Components, Varimax Rotation, N=1,902)

ITEM	CONTENT	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7
P2	PEOPLE IN THIS CO. FEEL VERY CLOSE	.75						
F5	THERE'S A LOT OF TEAMWORK IN THIS COMPANY	.70						
P31	PEOPLE IN THIS CO LOOK OUT FOR EACH OTHER	.67			.34			
P28	PEOPLE IN CO. GET EVEN TIGHTER IN TIME.	.66						
U15	SPIRIT OF TOGETHERNESS IN THIS UNIT	.66						
P1	THIS CO. IS ONE OF THE BEST IN THE ARMY	.66						
P32	THIS CO. BETTER TRAINED THAN MOST	.64						
P4	THIS CO. MORE COMBAT READY THAN MOST	.63				.37		
F2	I AM PROUD OF MY CO.	.61	.37					
P12	THIS CO. HAS HIGH QUALITY LEADERS	.61	.37					
U1	WHAT IS THE LEVEL OF MORALE IN YOUR CO.	.61						
P29	I LIKE BEING IN THIS CO.	.59	.36					
P6	NCOS IN THIS CO. KNOW THEIR STUFF	.55		.51				
F25	MY UNIT GETS THE JOB DONE	.55						
P35	TRUST IN FELLOW CO. SOLDIERS IN COMBAT	.54						
F24	MY LEADERS BETTER THAN IN OTHER UNITS	.54	.34					
P24	MOST PEOPLE IN CO. CAN BE TRUSTED	.53			.34			
F3	I REALLY FEEL I BELONG IN THIS CO.	.53	.32					
P20	LEVEL OF TRAINING IN THIS CO. VERY HIGH	.53						
F7	SOLDIERS WILLINGLY COOPERATE WITH NCOS	.51	.37					
P19	THIS CO. KNOWS HOW TO USE ITS WEAPONS	.50				.47		
P23	DIFFERENT RACES IN CO. MIX AFTER HOURS	.45						
P25	WANT TO SPEND ALL ENLIST IN THIS CO.	.45	.31					
P30	NO NEED TO WATCH BELONGINGS IN THIS CO.	.41						
F15	MY CO. WILL PLAY PART WINNING CONFLICTS	.40				.34		
P22	DIFFERENT RACES IN CO. MIX DURING WORK HOURS	.39						
U3	FELLOW SOLDIERS' COMBAT READINESS	.38				.38		
F18	ENOUGH TIME FOR FAMILY AND FRIENDS		.63					
F17	ENOUGH TIME FOR RELAXATION & ENTERTAINMENT		.63					
F16	ENOUGH TIME TO TAKE CARE OF PERSONAL NEEDS		.56					
U18	QUALITY OF RELATION/OFFICERS & ENLIST		.55					
S16	OFFICERS INTERESTED WHAT I THINK & FEEL		.53	.44				
U5	CONFIDENCE IN COMBAT: CO. COMMANDER		.52					
S24	CO. OFFICERS GOOD TO SERVE UNDER COMBAT		.52	.35		.39		
S13	CO. COMMANDER TALKS TO ME AS A PERSON		.50					
P33	CO. OFFICERS WOULD LEAD WELL IN COMBAT	.39	.50			.42		
P3	OFFICERS IN THIS CO. KNOW THEIR STUFF	.42	.50			.32		
F8	SOLDIERS IN CO. DO ANYTHING FOR OFFICERS	.36	.50					
F6	SOLDIERS WILLINGLY COOPERATE WITH OFFICERS	.44	.46					
F13	ARMY GIVES ME CHANCE TO BE ALL I CAN BE	.33	.45					.35
P17	CO. CH/OF/COMMAND HELPS W/ PERSONAL PROBS	.33	.39	.35				

ITEM	CONTENT	F1	F2	F3	F4	F5	F6	F7
S15	NCOS ARE INTERESTED IN MY PERSONAL WELFARE			.69				
S17	NCOS ARE INTERESTED IN WHAT I THINK & FEEL	.36		.63				
S25	CO. NCOS GOOD TO SERVE UNDER IN COMBAT	.42		.62				
P34	CO. NCOS WOULD LEAD WELL IN COMBAT	.51		.59				
S11	PLATOON SERGEANT TALKS TO ME AS A PERSON			.54				
S19	MY PLATOON SERGEANT KNOWS HIS STUFF			.54				
S12	PLATOON LEADER TALKS TO ME AS PERSON		.35	.51				
F9	SOLDIERS IN CO. DO MOST ANYTHING FOR NCOS	.43		.51				
S14	OFFICERS INTERESTED MY PERSONAL WELFARE		.47	.48				
P26	SUPERIORS TRY TO TREAT ME AS A PERSON	.38	.39	.46				
S22	IF WAR, FEEL GOOD ABOUT GOING WITH PLATOON	.37		.46	.31	.32		
U4	-CONFIDENCE IN COMBAT: PLATOON LEADER			.45		.44		
S28	MY CHAIN OF COMMAND WORKS WELL	.37	.38	.44				
S21	IF WAR, FEEL GOOD ABOUT GOING WITH MY SQUAD	.31		.40	.39			
S4	I SPEND TIME WITH PLATOON AFTER DUTY HOURS				.72			
S8	MY PLATOON HELPS ME WITH PERSONAL PROBLEMS				.68			
S7	MY SQUAD HELPS ME WITH PERSONAL PROBLEMS				.67			
S9	MY SQUAD LENDS ME MONEY WHEN NEEDED				.66			
P9	I SPEND TIME WITH CO. AFTER DUTY HOURS				.64			
S10	MY PLATOON LENDS ME MONEY WHEN NEEDED				.63			
P10	MY CLOSEST FRIENDS ARE PEOPLE I WORK WITH				.57			
S18	MY SQUAD LEADER KNOWS HIS STUFF			.32	.35			
U13	CONFIDENCE IN UNIT WEAPONS SYSTEMS					.60		
U17	CONDITION OF UNIT WEAPON SYSTEMS					.59		
P18	I HAVE A LOT OF CONFIDENCE IN WEAPONS					.57		
U2	COMPANY READINESS FOR COMBAT	.44				.52		
S20	MY PLATOON LEADER KNOWS HIS STUFF			.41		.44		
F14	US ARMY EQUIPMENT IS BETTER THAN RUSSIAN					.42		.41
U10	TACTICAL CONFIDENCE: DIVISION COMMANDER					.89		
U9	TACTICAL CONFIDENCE: BRIGADE COMMANDER					.86		
U11	TACTICAL CONFIDENCE: CORPS COMMANDER					.86		
U12	TACTICAL CONFIDENCE: ARMY GENERAL STAFF					.82		
U8	TACTICAL CONFIDENCE: BATTALION COMMANDER					.60		
U7	CONFIDENCE IN COMBAT: SELF							.66
P21	A LOT OF CONFIDENCE IN SELF IN COMBAT							.62
U14	OWN SKILLS & ABILITY AS SOLDIER							.54
F10	WHAT I DO IN THE ARMY IS WORTHWHILE	.30	.32			.35		.50
F1	I AM PROUD TO BE IN THE US ARMY		.31					.49
U16	LEVEL OF PERSONAL MORALE	.33	.31					.46
F4	I AM AN IMPORTANT PART OF THIS CO.	.38						.43
U6	CONFIDENCE IN COMBAT: CREW/SQUAD MEMBER			.32	.32			.35

Appendix 1: Morale items used in Study 1 (equivalent Gal/Manning item appears below; G/M item number in brackets) *

1. What is the level of morale in your company?
G/M: What is the level of morale in your company? [1]
2. How would you describe your company's readiness for combat?
G/M: How would you describe your company's readiness for combat? [2]
3. How would you describe your fellow soldiers' readiness to fight if and when it is necessary?
G/M: How would you describe your fellow soldiers' readiness to fight if and when it is necessary? [4]
4. In the event of combat, how would you describe your confidence in your platoon leader?
G/M: In the event of combat, how would you describe your confidence in your platoon leader? [5]
5. In the event of combat, how would you describe your confidence in your Company Commander?
G/M: In the event of combat, how would you describe your confidence in your troop commander? [6]
6. In the event of combat, how would you describe your confidence in your crew/squad members?
G/M: In the event of combat, how would you describe your confidence in your crew/squad members? [7]
7. In the event of combat, how would you describe your confidence in yourself?
G/M: In the event of combat, how would you describe your confidence in yourself? [8]
8. How would you describe your confidence in the tactical decisions of your Battalion Commander?
G/M: How would you describe your confidence in the tactical decisions of your Battalion Commander? [10]
9. How would you describe your confidence in the tactical decisions of your Brigade Commander?
G/M: How would you describe your confidence in the tactical decisions of your Brigade Commander? [11]
10. How would you describe your confidence in the tactical decisions of your Division Commander?
G/M: How would you describe your confidence in the tactical decisions of your Division Commander? [12]

11. How would you describe your confidence in the tactical decisions of your Corps Commander?
G/M: How would you describe your confidence in the tactical decisions of your Corps Commander? [13]
12. How would you describe your confidence in the tactical decisions of the Army General Staff?
G/M: How would you describe your confidence in the tactical decisions of the Army General Staff? [14]
13. How much confidence do you have in your unit's major weapons systems (tanks, APC's, etc)?
G/M: How much confidence do you have in your unit's major weapons system (tanks, APC's, etc)? [20]
14. How would you rate your own skills and abilities as a soldier (using your weapons, operating and maintaining your equipment, etc.)?
G/M: How would you rate your own skills and abilities as a soldier (using your weapons, operating and maintaining your equipment, etc.)? [21]
15. How would you describe your unit's togetherness, or how "tight" are members of your unit?
G/M: How would you describe your unit's togetherness in terms of the relationships among its members? [24]
16. What is the level of your personal morale?
G/M: What is the level of your personal morale? [31]
17. How would you describe the condition of your unit's major weapons systems (tanks, APC's, etc)? In other words, what kind of shape are they in?
G/M: How would you describe the condition of your unit's major weapons systems (tanks, APC's, etc)? In other words, what kind of shape are they in? [3]
18. How would you describe the relationships between officers and the enlisted in your unit?
G/M: How would you describe the relationships between the officers and the men in your unit? [25]
19. How often do you worry about what might happen to you personally, if and when your unit goes into combat?
G/M: To what extent do you worry about what might happen to you personally, if and when your unit goes into combat? [26]
20. I think we are better trained than than most other companies in the Army.
G/M: How much of the time does your unit spend on useful training? [19]

21. If I have to go into combat, I have a lot of confidence in myself.

G/M: In general, how would you rate yourself as a soldier? [22]

22. I have enough time to spend with family members and friends.

G/M: How much stress do you typically undergo because of separation from family/wife/girlfriend due to field training? [29]

- * Items 1-16 scored on 5-point Likert scale, "Very High" to "Very Low";
- Items 17-19 scored on 5-point Likert scale, "Very Good" to "Very Bad";
- Items 20-22 scored on 5-point Likert Scale, "Strongly Disagree" to "Strongly Agree".

FIGURE 1: A MODEL OF "FIGHTING MORALE"

SHOWING HYPOTHESIZED RELATIONS BETWEEN COMPETENCE MORALE, COHESION, & ÉSPRIT

