Mediators of Stress in an Army Unit

by

WILLIAM R. WILD

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Abstract

Stress occurs when environmental demands exceed the organism's ability to cope. Cohesion and leadership have been shown to be two of the possible mediators of stress in a small group. This study investigated the relationships among environmental demand, unit cohesion and subordinates attitude towards authority with a view to determining if an increase in environmental demand fosters cohesion and improves attitudes to authority which in turn ameliorate the aversive effects of stress. Three hundred-six Corporals/Privates, half of whom were engaged in peacekeeping duties on the Mediterranean island of Cyprus and half of whom remained on duty in Canada, completed questionnaires designed to determine levels of stress, cohesion, and attitudes to authority. Multivariate Analysis of Variance (MANOVA) revealed mean differences at the .05 level for all variables. Tukey's pairwise multiple comparison procedure indicated relationships generally in the predicted direction although one of the five groups investigated responded in a manner opposite to that predicted. Suggestions are offered for this anomaly. It is concluded that appropriate supervision is crucial to the fostering of cohesion and a positive attitude towards authority.

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Mediators of Stress in an Army Unit

In 1980 the Surgeon General of the Canadian Forces issued a policy statement on the management of stress reaction casualties in the Land Forces (McPherson, 1980). In the statement, stress reaction casualties were broadly defined as "those soldiers who, for a wide variety of reasons, are unable to cope with the demands of battle" (p. 2). This definition infers that the person suffering from stress reaction is responding to his environment. As such, a response-class approach to stress (McGrath, 1970) is in keeping with the definition of stress reaction casualty. One response class definition of stress, offered by Selye (1976), is "the state manifested by a specific syndrome which consists of all the nonspecifically-induced changes within a biological system" (p. 64). For our purposes the specific syndrome referred to by Selye (1976) is stress reaction and the state manifested by this syndrome is a state of inability to cope with the demands of battle. The reasons for this inability to cope are, in Selye's terms, nonspecifically-induced changes within the biological system.

Although the stress reaction casualty is not a new phenomenon, the incidence of such casualties has been

steadily growing as societal values and the methods of waging war change. Prior to the First World War there were few recorded instances of stress reaction casualties because "in Wellington's day ... the diagnosis would have been cowardice, the treatment shooting and prevention, [the] fear of contempt of ones comrades" (Richardson, 1978, p. 49). Nor was the 19th century soldier as susceptible to battlefield stress as today's soldier. According to Richardson (1978) he was a soldier because the alternative was quite often starvation in a back alley, or the gallows. He was typically a drifter, a peasant or a prisoner; illiterate, ill bred, in poor health and feeble of mind and imagination. He was accustomed to deprivation and death and in the Army quite possibly formed his first close friendships and had his first opportunity to show his courage and manhood . He fought shoulder to shoulder with his comrades, against an enemy he could see and weapons he could understand.

Modern society and the modern battlefield are quite different. Today's soldier is quite different from the soldier of Wellington's day. He is seldom a drifter or peasant or a prisoner, and the modern military does not accept the illiterate, the ill bred, the unhealthy or those feeble of mind. The soldier of today is raised in

a society where he is sheltered from deprivation and death and is likely to be less adaptable to the ravages of war. The modern battlefield is far different from that of Wellington's day as well. On the modern battlefield friendly and enemy forces are seldom visible. Modern weapons are capable of destruction unheard of in the previous century and usually strike without warning. As the battlefield has become more frightening and the soldier has become less adaptable to the realities of war, the incidence of stress reaction casualties has increased. Estimates of the ratio of stress reaction casualties to physically wounded among American soldiers for specified battles during the Second World War are 33% in Okinawa, 35% in the European campaign and 25% in North Africa (Ingraham and Manning, 1980). Estimates for Israeli soldiers in the 1973 Arab-Israeli war are 23% (Tyner and Russell, 1983) and statistics for Israeli soldiers in recent hostilities in Lebanon show that more men were incapacitated due to stress reaction (approximately 600) than through death (approximately 500) (Schneider and Luscombe, 1984).

Clearly the prevention of stress reaction casualties is important to any military commander. Studies by Grinker (1945), Stouffer (1949), Hilmar (1965), Janowitz (1974) and others led to the previously mentioned Surgeon

General's policy statement (McPherson, 1980) in the Canadian Forces, a field manual (Wickam, 1983) in the American Army, and undoubtedly similar publications in other armies. A common factor in all of these studies, publications and policies is the importance placed on group cohesion and leadership as defences against combat stress. Unfortunately, little attempt has been made to incorporate recent psychological literature on stress, cohesion, and leadership in a systematic study of battlefield stress. Nor has the current literature on battlefield stress been based on data derived from an experimental methodology. Rather it has relied on naturalistic observation, convention and in many cases, in true military fashion, the opinion of the senior officer present. This study is an attempt to explain, using current psychological theory, and to demonstrate empirically, the manner in which group cohesion and leadership ameliorate the effects of battlefield stress.

Stress

The causes of stress are many and varied, but it is generally accepted that the level of stress experienced depends on the personal characteristics of the individual and the manner in which he perceives his environment (McGrath, 1970; Lazarus 1966, Cox, 1978; Stokols, 1979;).

McGrath (1970) lists four classes of events or stages of stress: (a) environmental demand or the objective stressors in the organism's environment; (b) reception or how the organism perceives or appraises the objective demand; (c) response, the organism's physiological, psychological, or behavioural reaction to the perceived environmental demand; and (d) the consequences of the response either for the organism or for the larger organization. McGrath's (1970) reception stage of stress has been further described by Stokols (1979). Stokols (1979) emphasizes that the manner in which the individual perceives environmental demand is determined by environmental salience or the importance to the individual of the need or goal with which the environment interferes and his ability to cope, which depends to a great extent on the degree to which the individual controls the environment. When the individual perceives an imbalance between environmentaly salient demands and his ability to cope with these demands he experiences stress. Thus two people in identical situations could experience different levels of stress depending upon their perception of the environmental demand and their ability to cope with that demand.

Coping with Stress

Controlling the environment as a method of coping with it, can be accomplished by either behavioural or cognitive means (Averill, 1973). Lazarus (1966) supports Avrill's contention when he refers to two main forms of coping with stress, direct action and palliation. Direct action focuses on attempts to "alter one's troubled relationship with the environment" (p. 32). Flight and fight are two action oriented means of coping with a hostile environment. Palliation, on the other hand, focuses not on a physical alteration of the environment, but is directed towards reducing, tolerating, or eliminating the distressing affective features of the stress emotion aroused by the environment.

In a wartime environment the soldier has limited opportunity to cope with stress by confronting the hostile environment. Flight is an alternative which is frowned upon by superiors and peers alike, and combat (fight) is in many cases the very stimulus which evokes the fear. There are of course, activities which lie between the extremes of flight and fight. Preparation activities would be included in this category, but can be of short duration for those soldiers not involved in the planning stage of battle. For these personnel, the majority, palliative measures are the only coping

mechanism available.

Two major palliative measures, inoculation and affiliation, have been studied in occupations which impose life threatening stressors. A review of the literature indicates that inoculation has generally been discounted as an effective palliative measure. Research in both the laboratory and in real life situations, has studied the effects of exposure to the life threatening situation (inoculation) as a means of increasing tolerance. Fenz and Epstein (1967) found that experienced sport parachutists reported less stress than did novice parachutists prior to a parachute descent, supporting the notion that experience mediates the level of stress experienced. The opposite, however, was found by Knapp, Capel, and Youngblood (1976), Keinan and Freidland (1984) and O'Neil, Hanewicz, Franzway, and Cassidy-Risk (1982). In the Knapp et al. (1976) study, experienced deep sea divers were found to suffer more stress prior to a dive than were their less experienced counterparts. Keinan and Freidland (1984) in a laboratory study, reported that training for performance under stress which included an element of stress, was less effective than training which did not include an element of stress, and O'Neil et al. reported that police officers who underwent stress inoculation training,

performed no better as a result of such training than did their non-trained counterparts. It has also been reported that "soldiers in battle can only withstand so much battle stress" (Idzikowski and Baddely, 1983, p. 140), and "approximately 100 days of intermittent exposure to battle was the average length of endurance before non-effective behaviour became frequent" (Shaw, 1983, p.223). If, as has been suggested by some, exposure to the stressor, and stress inoculation training reduce the effects of stress, then the incidence of stress reaction casualties should decline with prolonged exposure to combat. In fact, the opposite is true. The incidence of stress reaction increases with prolonged exposure.

Affiliation

The second palliative measure is affiliation. Affiliation was defined by Murray (1938) simply as "to form friendships and associations (p. 38). Although a search of the literature failed to uncover a more recent definition it is generally accepted to refer to the desire of one person to be with others rather than remain alone (Schachter, 1961; Sarnoff and Zimbardo, 1962; Darley and Aronson, 1966; Rofe, 1984). The propensity to affiliate when under stress has been demonstrated in the

laboratory (Schachter, 1961; Zimbardo and Formico, 1963; Darley and Aronson, 1966) and in real life studies (Strumpfer, 1970; Teichman, 1977). One popular explanation for this propensity to affiliate employs Festinger's (1954) theory of social comparison processes (Schacter; Zimbardo and Formica, 1963). In this conceptualization, people group together when under stress in order to evaluate the quality, intensity and appropriateness of their emotions (Sarnoff and Zimbardo, 1962). Others consider this view to be simplistic. Kendall, Finch, Auerbach, Hooke, and Mikulka (1976) have differentiated between ego threat and physical harm threat dimensions which Rofe (1984) labels avoidable-dangerous situations and avoidable-embarrassing situations. Sarnoff and Zimbardo (1962) and Darley and Aronson (1966) have demonstrated that ego threats and physical harm threats lead to different affiliation tendencies. The explanation for this is that the individual perceives ego threat when placed in an ambiguous situation for which the appropriate behaviour is unknown. Under such circumstances the individual prefers either isolation, so as to avoid embarrassment (Sarnoff and Zimbardo, 1962) or affiliation with someone less anxious than himself in order to reduce anxiety,

perhaps through the exchange of information (Darley and Aronson, 1966). In a physical harm threat situation individuals prefer affiliation with someone in a situation similar to their own in order primarily to compare emotions, but also in the hope that such a comparison will serve to reduce anxiety (Sarnoff and Zimbardo, 1962).

Teichman, Teichman, Morad and Melnick (1981) offer a somewhat clearer conceptualization of affiliation under threat. In their view a threat offers three motives to affiliate: (1) self comparison to others in the group in order to determine what behaviour is appropriate, (2) information gathering in an effort to understand the situation, and (3) anxiety reduction either through better understanding of the threat or by the proximity of others in the same situation. Although they suggest that information seeking for anxiety reduction is the motive for affiliation under a moderate amount of threat, Teichman et al., like Sarnoff and Zimbardo (1962) and Darley and Aronson (1966) are unclear as to whether anxiety reduction, social comparison or a combination of the two is the motive for affiliation under extreme stress.

Naturalistic studies have also demonstrated the propensity for people to affiliate under physical harm threat. Strumpfer (1970) using questionnaire data collected after a devastating tropical storm, reported significant positive interrelationships among severity of threat, fear and affiliative tendencies. Teichman (1977) studied Israeli soldiers during the October 1973 Arab-Israeli War and has suggested, in the case of soldiers in battle, a sequential approach to affiliation. In studying the behaviour of a single military unit during the seven day October 1973 war, Teichman (1977) noted that in the early stages, when lack of clarity of the situation was the predominant stressor, information sharing behaviour was common and the unit communications officer, a reliable source of information, was the dominant source of reassurance. At this stage, the threat was mainly to the ego, fear of the unknown, and consistent with affiliation theory noted above, affiliative ties were not with people in a similar situation but with an information giver who through the information offered, could possibly reduce anxiety by decreasing ambiguity. In the later stages of the war, as conditions became more stressful due to the presence of a physical harm threat, emotionally supportive and

friendship behaviour became more common than information sharing. Also during this stage the focus of reassurance shifted from the information giving communications officer to a person described by the soldiers as a father figure. Thus Teichman (1977) suggests a two stage affiliative process, with stage one relying on what Deutsch and Gerard (1955) referred to as informational social influence, or an influence to accept information from another as evidence of reality and stage two relying on normative social influence or an influence to conform to the positive expectation of another.

Shaw (1983) used Masserman's (1955) narcissistic defence theory to describe a similar interaction between soldiers in battle. Masserman (1955) proposed three narcissistic defences: (1) the feeling of invulnerability, (2) belief in the leader as omnipotent servant whose goal is to protect his followers, and (3) belief that in time of great need friends and commrades will offer solace. According to Shaw (1983), the soldier in battle moves through these three stages. At first he feels himself invincible. Other people may get hurt but he feels that it could never happen to him. Eventually the harsh realities of war dispel this notion and he comes to rely on the expertise of his superiors to

protect him. Miller (1979) and Thompson (1981) offer some support to this notion through Miller's (1979) minimax theory of controllability which postulates that although people generally prefer to have control in their own hands, in situations where they consider another person more capable of minimizing future danger they will give up control. Thus the patient prefers that the doctor administer the hypodermic and the soldier prefers that the generals control the battle. When even the leader's efforts appear to be inadequate, the soldier turns to the third narcissistic defence, his comrades, for protection and understanding. While the first of the three defences is clearly an isolation process, the latter two defences rely first on leaders and second on friends, an affiliation process not unlike that proposed by Teichman.

Cohesion

Affiliation is concerned with the individual and what motivates him to join with others. Cohesion, on the other hand, is concerned with the group and what causes people to be attracted to or resistant to leaving it. While the term affiliation is not part of military jargon, group cohesion is touted as the key to building morale and esprit de corps. Grinker (1945) and Hilmar

(1965) credit cohesion and morale as the salient feature of military units which suffer minimal effects of the stresses of battle. More recent studies have agreed. "One of the most effective ways of reducing combat stress is to maintain a high level of cohesion and morale" (King, Mangelsdorf, and O'Brien, 1985b, p. 1). In another study, King et al. (1985a) listed the primary determinants of cohesion as horizontal bonding with peers, and vertical bonding with superiors. The same study listed the primary determinants of morale as unit cohesiveness and confidence in commanders. Furthermore, a current United States Army publication (Wickam, 1983) on the management of stress in army operations lists leadership and unit cohesion as <u>the</u> defences against stress. Stouffer's (1949) study supports the role of cohesion in defending against combat stress but offers a different view of the role of leadership. When asked what kept soldiers fighting when the going got tough, both officers and soldiers cited cohesion as a significant motivator, however only officers considered leadership to be a significant motivating factor, rating it first in importance while soldier's rated it last. Torrance (1954) however indicates that in small groups under the stress condition of survival, authority is an

important factor in group structure. Furthermore, Weinberg, Rovinski, Weiman, and Beitman (1981) list cohesion and leadership first among the four most common group problems which can be reliably identified. Clearly, cohesion and leadership are important variables in preventing combat stress.

Cohesion has been defined as "attraction to the group or resistance to leaving" (Seashore, 1954, p. 11; Johnson 1982, p. 205); "that group property which is inferred from the number and strength of mutual positive attitudes among the members of a group" (Lott and Lott, 1961, p. 408, 1965, p. 259); and "the resultant of all forces acting on members to remain in a group" (Cartwright, 1968, p. 91). Many factors combine to determine the degree of cohesiveness in a group. Lott and Lott (1965) list a number of antecedents of interpersonal liking, a concept which they consider instrumental in determining cohesion, which have a direct bearing on soldiers in combat: (1) contact between members; (2) cooperation in the reaching of common goals; and (3) a common threat from an external source which is not a function of the groups lack of skill. Seashore (1954) found in his study, that groups who believe their jobs to be of high status exhibit greater cohesion. He

admitted though that high status may not have been the determining variable. Lott and Lott (1965) have suggested that perhaps the variable Seashore had measured was job satisfaction. Pepitone and Kleiner (1957) also found evidence of a link between status and cohesion. In their field study of a boy's summer camp they discovered that loss of status tended to undermine group cohesion supporting a link between status and cohesion. This finding does not, however, detract from the importance of job satisfaction to cohesion. Cartwright (1968), Shaw (1981), Lawler (1983), Narayanan and Nath (1984) and O'Reilly and Caldwell (1985) have all demonstrated a correlation between job satisfaction and cohesion.

Cartwright (1968) offers a different perspective on what determines cohesion. He suggests four variables which the individual will consider before committing himself to the group: (1) motive base for attraction such as need for affiliation, recognition or security, (2) incentive properties of the group such as its goals, characteristics of membership, and prestige, (3) expectancy that membership will have positive outcomes, and (4) comparison between one group and another. Cartwright added that groups, social values, and individuals change over time and so to does the

attraction to a group. In time of hostilities the soldier has a greater need for security and so will bond more closely with the group.

Leadership has also been cited as a determinant of cohesion with democratic leadership generally leading to greater cohesion (Lott and Lott, 1965; Cartwright, 1968). However, as mentioned earlier, in a crisis situation control is readily relinquished to an authority figure who is considered better able to facilitate a positive outcome.

It is generally agreed (Lott and Lott, 1961, 1965; Cartwright, 1968; Johnson, 1982) that the major consequence of group cohesiveness is the power it gives to the group to influence its members. Because the value attached to group membership is greatest in a cohesive group, the pressure to conform to group standards is strongest. Additional results are (1) the reduction of anxiety and the concomitant increase in a sense of security (Seashore, 1954), (2) the willingness of group members to persist longer in working towards goals (Lawler, 1983; O'Reilly and Caldwell, 1985) and (3) the reduction of absenteeism and turnover (Cartwright). Thus in a combat situation, cohesion ameliorates the effects of stress by exerting pressure on the individual to

remain a part of the group and work towards the common goal, rather than succumb to stress and leave the group as a stress reaction casualty.

Leadership

The second important variable in preventing combat stress is leadership. That the individual turns to an authority figure for direction when placed in an ambiguous situation was dramatically demonstrated by Milgram (1974). In Milgram's (1974) studies, subjects instructed by the experimenter to administer increasingly larger voltages of electric shock to a confederate did so in spite of the confederate's increasing discomfort and not uncommon pleas for a halt to the proceedings. Although Milgram's focus was the committing of atrocities under the direction of an authority figure, the studies show too, how influential an authority figure can be. Milgram's subjects, though undoubtedly under a great deal of duress due to the perceived harm they were causing to another person, continued to follow instructions because the leader was in charge. He must, therefore, know what he is doing, and, in any case is responsible for the consequences.

Rigby and Rump (1979, 1982) and Rigby (1984a, 1984b) have studied the individual's attitude to authority. In

their conceptualization, attitude to authority is "an indication of the degree of approval or disapproval with which a person views various institutional authorities" (Rigby and Rump, 1979, p. 470). The results of their studies suggest that attitude to authority generalizes across different institutional authorities so that, for instance, the individual who approves of the authority granted a peace officer is likely to approve of the authority granted a teacher. Furthermore, attitudes to authority in general vary according to the social issues of the day.

Job Satisfaction

Another variable which was mentioned as important to the development of cohesion was job satisfaction. A 1973 report, Work in America defined work as "an activity which produces something of value for other people" (Secretary of Health, Education, and Welfare, 1973). Work, according to the report, confers status on the individual. Isolation, constant supervision, lack of variety and involvement in meaningless tasks were seen as the most oppressive features of work and autonomy the most sought after feature. Zeitz (1983) however, in a study of 12 American manufacturing companies found that formal structuring could reduce role ambiguity and

increase satisfaction. Lawler (1983) cites (1) pay, (2) promotion, (3) security, (4) leadership, and (5) the work, as significant contributors to job satisfaction. The major consequence of dissatisfaction they list as turnover and absenteeism.

The Present Study

Thus far we have seen that under the stress of physical harm threat, people prefer affiliation to isolation (Sarnoff and Zimbardo, 1962; Darley and Aronson, 1966; Strumpher, 1970; Teichman, 1977). It has also been shown (Teichman 1977; Shaw, 1983) that affiliation in the military unit takes two forms. Affiliation between follower and leader occurs when information is desired for anxiety reduction purposes. Affiliation between comrades occurs at a later stage when a physical harm threat is known to be present. At this stage warmth and understanding is desired as comrades engage in social comparison.

Cohesion has been shown to vary with (1) interpersonal contact, (2) cooperation, and (3) severity of external threat (Lott and Lott, 1965), (4) job status and recognition (Seashore, 1954; Pepitone and Kleiner, 1957; Cartwright, 1968) (5) job satisfaction (Cartwright, 1968; Shaw, 1981; Lawler, 1983, Narayanan

and Nath, 1984; O'Reilly and Caldwell, 1985), (6) security, and (7) prestige (Cartwright, 1968).

Reliance on authority has also been shown to be characteristic of individuals under stress (Torrance, 1954; Milgram, 1974; Teichman, 1977; Miller, 1979; Weinberg et al. 1981; Shaw, 1983; King 1985;).

The present study will focus on the effects of different levels of stress, (the independent variable), on a Canadian Army unit, in order to determine the interrelationships among stress, and the dependent variables, cohesion and attitude to authority.

The typical Canadian Army unit is called upon to function in three distinct environments. Garrison life is most like normal civilian employment. Tasks are primarily routine administrative and housekeeping chores or a combination of classroom and practical trades training. The working day covers nine hours after which the "employees" are free to pursue individual interests. As there are few stressors, the tendency to affiliate should not be great. For the same reason there is also little need to rely on authority figures for information or anxiety reduction. Nor is the environment conducive to the fostering of group cohesion. Regular working hours and individual pursuit of goals permits relatively

little interpersonal contact. The lack of an external threat obviates any security needs and because of the routine, at times menial, nature of the tasks, status, prestige, and job satisfaction are limited. Recognition by the civilian population with whom the soldiers are in daily contact is, if not non-existent, extremely subdued. As a result job satisfaction and cohesion are predicted to be at a low level relative to other environments.

The second environment in which the Canadian soldier is called upon to function is the field training environment. This environment is characterized by 12 to 24 hour working days, seven days a week, engaged as small units in physically demanding and challenging tasks for which they have previously received training. The life-style is a communal one with members of the unit living together in tents, and eating in a common kitchen. The level of environmental demand, given the harsh environment and little free time, is greater than that of the

garrison situation. The greater stress should engender greater affiliative tendencies and greater reliance on authority (Milgram, 1974; Teichman, 1977; Shaw, 1983). Greater interpersonal contact, the cooperative nature of the work and living arrangements, plus the prestige

associated with leading a rigorous lifestyle should lead to greater cohesion and job satisfaction as well (Lott and Lott, 1965, Cartwright, 1968).

The third environment is an operational environment, war or, as in the case of the 3rd Battalion The Royal Canadian Regiment, a local army unit, a peacekeeping role. This environment is an even more stressful one than the field training environment because of the presence of an opposing military force and the very real threat to life and limb. This threat should produce a greater tendancy to affiliate (Sarnoff and Zimbardo, 1962; Strumpfer, 1970; Teichman, !977) than was characteristic of either of the two previous environments as well as greater reliance on authority figures (Milgram, 1974; Teichman, 1977; Shaw, 1983). The presence of a number of factors would also suggest that group cohesion should be maximized. Interpersonal contact and cooperation would, due to similar communal living arrangements, be as great as was the case in the field training environment. A number of additional factors however, which have been shown to increase cohesion are characteristic of the operational environment. In the operational environment a known common external threat is present (Lott and Lott, 1965).

In addition, during actual hostilities or peacekeeping, the soldier is actually engaging in the work for which he was trained: defending the country or protecting the vulnerable. This role gives the occupation prestige (Cartwright, 1968) which is not evident on his home soil and offers a sense of meaningfulness of employment (Secretary of Health, Education, and Welfare, 1973) not normally felt in garrison or on field training. Status and recognition (Pepitone and Kliener, 1957; Cartwright, 1968) are bestowed through the presentation of medals and the wearing of distinctive apparel such as the blue beret of the United Nations soldier. As a consequence, a high level of group cohesion and job satisfaction should ensue.

It has been suggested (Strumpher, 1970; Teichman, 1977; Shaw, 1983) that a stressful environment motivates people to bond together both for social comparison and anxiety reduction reasons. When members of a group form mutual bonds, the group is said to have cohesion. Numerous other factors are said to contribute to the cohesiveness of the group including prestige, job satisfaction and the presence of an external threat. The first hypothesis then is that the military unit engaged in an operational role will be more cohesive than one

engaged in a field training role which in turn will be more cohesive than one confined to garrison. It has been also been suggested that more cohesive groups are better able to withstand stress than are less cohesive groups (Grinker, 1945; Hilmar, 1965; King, Mangelsdorf and O'Brien, 1985). The second hypothesis therefore is that in spite of the different degree of stress implicit in the three environments being studied, there will be no difference in the amount of stress reported. The stressors of the operational unit will be offset by its greater cohesion. The literature also suggests that as the situation becomes more stressful people tend to rely more on authority figures (Teichman, 1977; Shaw, 1983). The third hypothesis therefore is that attitude to authority will covary with the degree of stress characteristic of the environment. That is, the greater the stress the more positive the attitude to authority.

Method

Subjects

Three hundred six members of The 3rd Battalion, The Royal Canadian Regiment (3 RCR), an Army unit stationed in Winnipeg, Manitoba, volunteered to participate in this study. All subjects were of Corporal or Private rank, male, under 30 years of age and had less than six years

of service in the Regular Force. Subjects were members of five different groups (Companies) with each Company representing an experimental or control group. Groups sizes were determined by the number of subjects of the appropriate rank who were available for the study and willing to participate. Group one consisted of 78 members of a composite Company which had been recently established as a holding organization for new arrivals to the battalion. Members of this group were participating as students on course, or in administrative duties, and had not yet been assigned to permanent positions in the battalion. The environmental demands experienced by this group were considered to be the lowest of the five groups. Group two consisted of 83 members of M Company, a rifle company which had just returned from a one month field concentration during which field tactics and field living had been practised. Group two was considered to have experienced slightly higher environmental demand than group one. Groups three, four and five were participating in a United Nations peacekeeping force on the island of Cyprus in the eastern Mediterranean. Group three consisted of members of Logistics Company, the organization responsible for administrative and logistics support, while groups four (N Company) and five

patrolling the line between opposing forces. Participation in a peacekeeping force with the inherent dangers associated with living and working in close proximity to warring neighbours was considered to impose more environmental stress than service in Canada. Line companies, because members dealt daily with armed belligerents, were considered to be experiencing greater environmental demand than were members of the primarily administrative Logistics Company.

Seashore (1969) points out some of the dilemmas faced when conducting experiments with a formal organization. Three such dilemmas arose in the present study regarding the composition and testing of groups one two and five. It was intended that all groups be as homogeneous as possible in composition. As Seashore (1969) states, however, the composition of organizations change over time and in the case of the present study, an influx of recently enrolled personnel caused group one to be composed mainly of inexperienced soldiers. This difference in composition from the other groups possibly imposed unwanted confounding variables. It was intended to assess group two, the field exercise group, in the field during a field exercise. Transportation to the field location was unavailable and so testing immediately on their return was substitutd. Whether the residual

effects of the dependent variables are a true reflection of the field condition is unknown. The third dilemma was a more fortuitous one. Although only one line company had originally been selected for inclusion in the study, the Commanding Officer of the Canadian Contingent in Cyprus requested that both line companies be assessed. This request was accommodated and as a result, the overall sample consisted of every Corporal/Private in 3RCR who was available for testing and willing to participate.

Materials

A number of survey instruments were administered to subjects to collect data for the study. Stress was measured using the State-Trait Anxiety Inventory (STAI) Form X1 by Speilberger, Gorsuch, and Lushene (1970) (Appendix A). Spielberger defines state anxiety as "a transitory emotional state or condition characterized by subjective feelings of tension and apprehension, and by activation of the autonomic nervous system" (Gaudry, Vagg, & Speilberger, 1975, p. 331). This definition is sufficiently similar to the Selye (1976) definition used earlier to warrant the use of the inventory. The STAI Form X1 is a popular instrument for measuring state anxiety (anxiety level at the time the questionnaire is completed) and has been described as "one of the best

standardized of anxiety measures, if not the best" (Dreger, 1978, p. 1095). Alpha coefficients range from .83 to .92 and validity coefficients from .50 to .80 (Dreger, p. 1094).

Cartwright (1968) listed four dimensions of cohesion; (1) interpersonal attraction among members, (2) evaluation of the group as a whole, (3) closeness or identification with the group, and (4) expressed desire to remain in the group. Three of these dimensions are addressed in the Seashore Cohesion Index (Seashore, 1954), a five item index in which intercorrelations among items range from .15 to .70, sufficient according to Seashore, to justify their use as an index of cohesion. Others (Johnson, 1982; Narayanan and Nath, 1984; O'Reilly and Caldwell, 1985) have also used Seashore's index. Johnson reported that it had "good reliability" (p. 207), and O'Reilly and Caldwell reported a Cronbach Alpha internal consistency of .85 (p. 199). As Seashore's index does not measure interpersonal attraction among members as a dimension of cohesion, this study employed, as an addition to the Seashore index, an adaptation of the instrument used by Pepitone and Kleiner (1957) in which each member of the group was asked with which other members of the group he would want or not want to participate in a task. The complete questionnaire can be

found at Appendix B.

The General Attitude to Institutional Authority Scale (GAIAS - Rigby and Rump, 1979) was used to measure attitude to authority. This inventory (Appendix C) consists of four scales designed to measure attitudes to police, army, the law, and teacher authority. Intercorrelations of the four scales are reported by Rigby and Rump to range from .41 to .73 and by Ray and Lovejoy (1973) to range from .53 to .65, suggesting that attitude to authority is a general trait (Ray and Lovejoy). Reliabilities are reported to be in the .80 to .85 range (Ray and Lovejoy). Validity has been shown to exceed .50 in comparison with a symbolic authority scale and to exceed -.50 with a radicalism scale. Correlation with a simple 11 point rating of authority in general reached .69 (Rigby and Rump). Ray and Lovejoy have commented that GAIAS "was shown to be valid as a measure of what it purports to measure - respectful attitudes towards conventional institutional authority" (Ray and Lovejoy, p. 97).

Although not included in the hypotheses, two additional dimensions, job satisfaction and causes of stress were measured to aid in interpreting the data. Job satisfaction was measured using the Job Descriptive Inventory (JDI- Smith, Kendall and Hulin, 1969) This

adjective check list (Appendix D) asks workers to describe five aspects of their job, (1) the work, (2) the pay, (3) the opportunities for promotion, (4) the supervision, and (5) the people with whom they work. Extensive validation across several samples has resulted in validity estimates which average from .50 to .70. Individual scales have relatively low intercorrelations (.30 to .50) indicating that a separate aspect of the work is measured by each, and split-half reliability has been shown to be adequate, ranging between .80 and .88 (Hulin and Smith, 1976, p. 178).

A second instrument, The Causes of Stress Inventory (Appendix E) was developed by the researcher from questions drawn from the literature and personal interviews from a previous study involving a similar military sample (Wild, 1986). The questionnaire was designed to determine specific environmental demands which impacted on the sample being studied. Respondents were asked to describe on a four point scale ranging from not at all (1) to very much so(4) the amount of stress inherent in various aspects of their work environment. Examples of questions are: (1) My family suffers because of my job, (2) I am not getting enough sleep, and (3) I could get hurt in my job. Psychometric properties have not yet been determined.

Procedure

At the time of the study 3RCR was configured in a manner which lent itself to research. Having been tasked with providing a peacekeeping force on Cyprus, the unit was almost equally split between its home base in Canada and its peacekeeping duty. The composite company (group one) was employed in a garrison role with regular hours, and comfortable living and working conditions; a low environmental demand situation. Group two (M Company) had just returned from a month long field training exercise in which they lived in tents, ate in field kitchens, and were engaged in tasks in which they were required to endure physical and mental demands for days at a time. This group comprised the medium environmental demand situation. The high environmental demand groups were the line companies in Cyprus (N Company-group 4 and O Company-group 5). These groups endured six months away from home performing peacekeeping duties in an alien cultural milieu between hostile factions. The normal work week consisted of six 12 hour days leaving little leisure time. The unsettled situation in Cyprus was exacerbated by conflicts elsewhere in the Middle-East creating a potential for confrontation in which the personnel along the line would be at the core. The last group (group 3-Q Company) was also present on Cyprus but

employed in administrative duties similar to those they would expect to perform in Canada. Any effects noted in this group would be due primarily to their presence on Cyprus and not to the nature of their employment.

Questionnaires were administered separately to groups one and two (composite company and M Company) in an auditorium at their place of employment in Winnipeg. Questionnaires were administered to groups three, four, and five approximately two weeks later in Cyprus. Administration of questionnaires to all groups but group four were conducted solely by the researcher. In Cyprus, survey administration had to be completed for 12 small and geographically separated groups most of whom were billeted literally on the line demarcating opposing factions. In addition, subjects worked varying shifts from which they could not be excused, necessitating a number of administrations at each site to capture all subjects . As time did not permit the researcher to personally administer surveys to all groups, two assistants (officers from M Company) were trained to administer surveys to some 40 subjects. As the surveys were largely self explanatory the use of assistants was not expected to affect the results. Prior to the start

of each session of the study the participants were given a detailed written and oral briefing in which the purpose of the study was outlined, the volunteer nature of their present and any subsequent participation was reinforced and a commitment was made by the researcher to present feedback on the results of the study. A copy of the written briefing is attached as appendix F. Fewer than ten individuals declined to participate in the study. No pressure was exerted to persuade individuals to participate as it was felt that unenthusiastic subjects would not produce credible data. Administration of the complete set of surveys generally took less than an hour.

Results

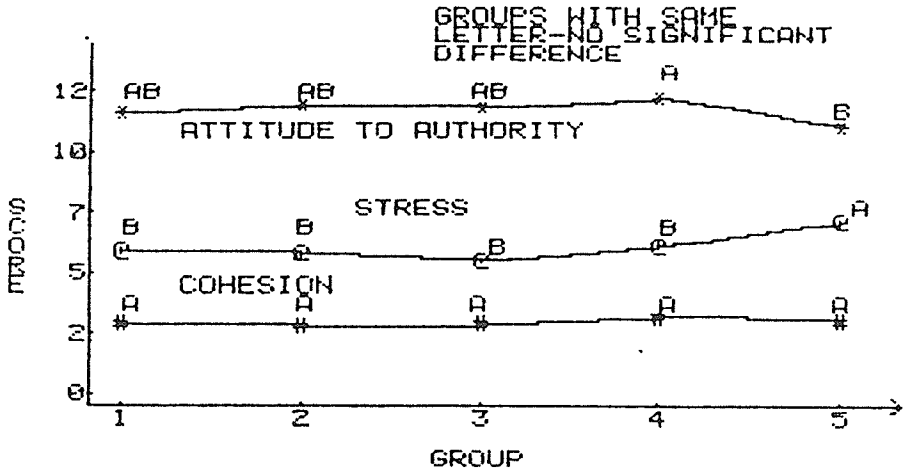
Mean scores per group for cohesion, stress and attitude to authority are shown in figure 1. A

Figure 1 - Following Page

general linear model multivariate analysis of variance (MANOVA) indicated that significant differences existed among the groups for all three dimensions; (Cohesion - $F(4,301) = 2.88$, $p<.02$. Stress - $F(4,301) = 8.97$, $p<.0001$. Attitude to authority - $F(4,301) = 2.90$, $p<.02$). In order to determine among which groups a

Figure Caption

Figure 1. Group mean scores for main effects. (attitude to authority and stress score divided by 10 for ease of presentation).



significant difference existed, Tukey's honestly significant test of differences among means was used. The Tukey test was developed specifically for pairwise comparisons (as opposed to all possible contrasts) and controls the Type One experiment wise error rate. It is a more powerful test than others of the same genre when used as a pairwise multiple comparison procedure. The Tukey procedure employed by SAS (1985) provides the Tukey-Kramer method for unequal group sizes (p. 473).

Although a significant difference was suggested by the MANOVA for cohesion, no means among the groups were demonstrated to be significantly different at the .05 level by Tukey's test for comparisons among means. As figure one shows however, means for groups three, four and five, the Cyprus groups, (2.77, 2.98,and 2.88 respectively) were higher than the means for either group one (2.71) or group two (2.68) both of whom remained in the relative safety of Canada.

For the dimension Stress, Tukey's test revealed a significant difference between group five ($\underline{M}$ = 67.67, SD = 16.01) and all of the other groups. Means and standard deviations for the other groups were 58.34/12.65, 56.41/13.66, 55.05/12.04 and, 52.21/12.95 for groups four, one, two and three respectively.

Tukey's test for variability among means for Attitude to Authority revealed significant differences at the .05 level between group four (M = 116.39, SD = 15.42) and group five (M = 105.44, SD = 13.68). Means and standard deviations for the other groups were: group two, mean 113.36, standard deviation 17.26, group three, mean 113.1, standard deviation 17.23 and, group one, mean 110.97, standard deviation 19.60.

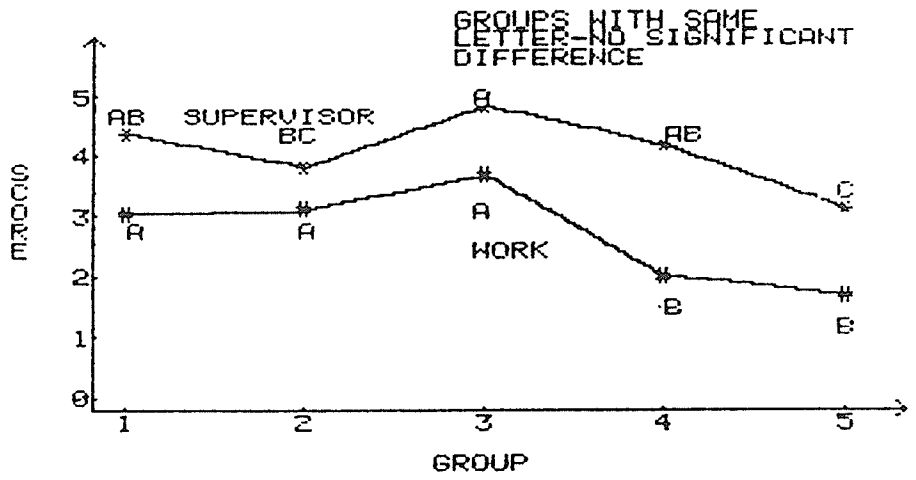
The Job Description Index (JDI) produced scores on attitudes towards work, supervisor, pay and co-workers. Figure 2 shows scores for each of the five groups on the dimensions of work and supervisor, with higher scores representing a more positive view of the variable. A significant difference at the .05 level was

Figure 2 - Following Page

found on the work variable between groups four and five, means 17.98 and 14.93 respectively, and groups one, two and three, means 27.01, 27.83, and 32.87 respectively. Significant differences at the .05 level were also found for the supervisor variable. Group three (M = 43.46) was significantly greater than groups two and five (Ms = 34.10 and 27.78 respectively) while group five

Figure Caption

Figure 2. Group mean scores for Supervisor and Work indices of Job Descriptive Index. (scores divided by ten for ease of presentation).



(M = 27.78) was significantly less than groups three, one and four (Ms = 43.46, 38.94 and, 37.44 respectively).

The relationship among the five groups on the variables of pay and co-workers are shown in figure 3.

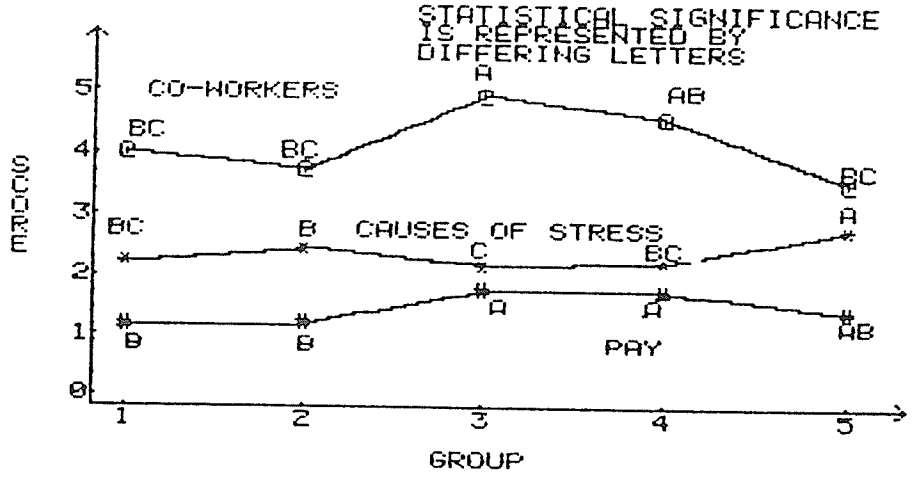
Figure 3 - Following Page

For the variable pay, the response of two of the three Cyprus groups (groups three and four) was found to be significantly greater (alpha = .05) than the two groups who remained in Canada (groups one and two). Means for groups three and four were 15.54 and 15.40 respectively, while means for groups one and two were 10.09 and 10.57 respectively. Group five was significantly different from none of the other groups.

Responses to questions regarding co-workers showed that group three gave significantly more positive answers than groups one, two and five, while group five scored significantly lower than groups three and four (alpha = .05). Means of groups in order from highest to lowest (groups three, four, one, two, five) are 44.13, 39.97, 35.83, 33.40 and, 31.56.

Figure Caption

Figure 3. Group mean scores for Co-workers and Pay indices of Job Descriptive Index and for Causes of Stress Survey. (pay and co-workers scores divided by ten for ease of presentation).



The Causes of Stress survey was designed to measure those environmental factors which contributed to environmental demand. The State Anxiety Inventory, on the other hand measures anxiety level at the time of questionnaire administration. A Pearson product moment correlation of .55 was found between these two variables. Mean scores on the Causes of Stress survey were computed for each group and compared using the Tukey studentized range test for variability. Group five ($\underline{M}$ = 2.48) was significantly greater than all of the other groups (alpha = .05). Group three ($\underline{M}$ = 1.91) was significantly lower than either group five or group two ($\underline{M}$ = 2.17). Group mean scores per item were also calculated and the five most stressing situations for each group compared (Table 1). All five groups

Table 1 - Following Page

reported question 24 We do the same things over and over again and question 27 It takes a lot of paperwork to get anything done to be notable environmental demands. Question 20, My job is boring was noted by Cyprus groups but not Canada groups. Among Cyprus groups, both line Companies rated boredom of their jobs as one of

Table 1

Situations Reported as Most Stressing by Group

Group		Situation
1	a.	We do the same things over and over again.
	b.	I am not given the opportunity to show my true capabilities.
	c.	Today's activities are not adequately preparing me for combat.
	d.	It takes a lot of paperwork to get anything done.
	e.	I miss my family.
2	a.	We do the same things over and over again.
	b.	It takes a lot of paperwork to get anything done.
	c.	I miss my family.
	d.	The equipment I have to use is not very good.
	e.	My job is physically demanding.

Group	Situation
3	a. I miss my family.
	b. We do the same things over and over again.
	c. We have too many inspections.
	d. There are a lot of stupid rules to follow.
	e. It takes a lot of paperwork to get anything done.
4	a. We do the same things over and over again.
	b. I miss my family.
	c. Today's activities are not adequately preparing me for combat.
	d. I am not given the opportunity to show my true capabilities.
	e. My job is boring.
5	a. We do the same things over and over again.
	b. It takes a lot of paperwork to get anything done.
	c. My job is boring.
	d. My job interferes with my leasure time activities.
	e. Today's activities are not adequately preparing me for combat.

their great concerns, while Logistics Company reported boredom as one the least stressful situations. All groups except group five reported statement 21 I miss my family as a source of stress.

Discussion

This study provides limited support for the hypotheses. It was hypothesized that the greater the magnitude of the environmental demand the more cohesive would be the group. No significant differences were found between the groups. Although differences were not statistically significant, the effect was in the hypothesized direction with Cyprus groups tending to report greater cohesion than Canada groups offering some support for the hypothesis.

The second hypothesis was that, in spite of the difference in environmental demands impacting on the five groups, no differences in the levels of stress reported would be noted. This would be so, it was suggested, because the increased environmental demand would foster cohesion and a positive attitude to authority, palliative behaviours which together would ameliorate the individuals perception of the environmental demand. With the exception of group five, no significant difference in the levels of stress reported by the groups was found.

With the exception of group five, the second hypotheses was supported.

The third hypothesis was that attitude to authority would covary with environmental demand. With the exception of group five no significant differences were discovered although the direction of the effect was in the expected direction.

The results for the main effects; stress, cohesion and attitude to authority, show no significant differences among groups one to four. A significant difference did exist between group five and all other groups on the variable stress and between group five and group four along the variable attitude to authority. In both cases group five gave the less positive response. The differences noted between groups four and five is important because groups five and four were the most similar of any two groups and had been predicted to give highly correlated scores on the various indexes. Groups four and five were similar in group composition, which was systematically matched to ensure a balance of experienced and inexperienced personnel. The tasks of the two groups were very similar, involving patrolling and vigilance functions, and both groups had, at the time of testing, been on Cyprus for some three months. In addition living conditions for both groups were similar.

It had been hypothesised that as environmental demands increased, subjects would turn to peers and superiors for support and by so doing ameliorate the aversive effects of the environmental demands. Although some support for this hypothesis was demonstrated, the two groups under the greatest environmental demand situation responded in opposite directions. Group four reported a higher level of cohesion than group five and a more positive attitude to authority. The levels of stress reported by the two groups reflected group cohesion and attitude to authority with the more cohesive group with the better attitude to authority (group four) indicating less stress. This suggests that an increase in environmental demand does not necessarily result in an improved attitude to authority or greater cohesion as was hypothesised. It is clear that in this study, variables other than environmental demand were impacting on the dependant variables.

A suggestion of what other variables might have influenced the results can be found by reviewing the Job Descriptive Index. Analysis of the Supervisor scale of the JDI shows that a significant difference in attitude towards the supervisor existed between groups four and five with group five rating supervisors much lower than did group four. This suggests, that an increase in environmental demand has the potential to foster an improved attitude

towards authority as suggested by Teichman (1977) and Shaw (1983), and demonstrated in the minor increase in cohesion and attitude to authority of group four over the Canada based groups, but only if the subordinates in the organization feel they can rely on authority figures to help them weather the uncertainties of the situation. This may not have been the case for group five. Subordinates will not automatically seek comfort from their leaders in time of need. They will draw towards their leaders only if the leaders have gained the subordinates' respect.

Teichman (1977) and Shaw (1983) also reported a greater reliance on peers in situations of high environmental demand. Analysis of the Co-worker index of the JDI shows that groups four and five differed significantly in this respect also, with group five reporting less support for co-workers than did group four. Reliance on peers mitigates the aversive effects of high environmental demand, according to Teichman and Shaw. Group four, reported a positive attitude towards co-workers and reported no difference in the level of stress than did other groups. Group five, on the other hand, reported a less positive attitude towards co-workers and showed a high level of stress. In spite

of this less positive attitude towards peers, group five recorded no less group cohesion than the other groups. Two explanations for this anomaly are possible. Although personnel in group five may not have cared for their co-workers they could not alter the situation and so were resolved to make the best of it. A second explanation is possible. Torrance (1954) indicated that interpersonal hostility is unusual in small groups under the stress condition of survival. Perhaps in group five, the stress condition was not one of survival but an internal organizational problem that so frustrated respondents that they lashed out at others in the group for causing the situation. Members of group five did not feel comfortable seeking reassurance from their supervisors or their peers and reported a corresponding high level of stress.

Although groups four and five were expected to give similar results, group five was less positive on all scales. Group five had a poorer attitude to authority, less cohesion, less regard for supervisors and peers alike, a lower opinion of their job and they were less happy with their pay.

Group three (Cyprus Logistics Company) was tested in order to determine if results obtained could be attributed to the functions of peacekeeping or merely to

service in Cyprus. The significant difference reported on the JDI Work index (group three reported greater satisfaction with work than groups four and five) suggests that the nature of the work was more salient than service on Cyprus. Reported levels of stress also support this view. Group three reported the lowest levels of stress of the five groups, lower even than the Canada groups. Groups four and five on the other hand, reported the highest levels of stress, although only group five was significantly different from the rest. Group three reported the lowest level of stress and the most job satisfaction of any group while groups four and five reported the highest levels of stress and the least job satisfaction. Thus the results obtained for groups four and five can be attributed to peacekeeping and not to service on Cyprus alone.

The Causes of Stress survey was developed to tap the sources of environmental demand. As such, it was expected to represent not the level of stress experienced by the individual (the State Anxiety Inventory performed this function) but the degree of environmental demand present. The Pearson product moment correlation of .55 suggests that approximately 30% of the variance of the State Anxiety Inventory was accounted for by the Causes

of Stress survey. Thus the two surveys did to a great extent, measure different variables, with the Causes of Stress survey representing a better predictor of actual environmental demand.

Those environmental demands which were seen as particularly stressful were similar for all groups. Analysis of the Causes of Stress questionnaire reveals that all five groups complained of too much paperwork and doing the same things over and over again. The two line companies in Cyprus emphasized the boredom of their jobs, while Logistics Company described their job as not boring. It is interesting to note that group four, in spite of sharing with group five a dislike for the work, as reflected on both the JDI Work index and the Causes of Stress survey did not report greater stress or a poor attitude to authority. This indicates group cohesion and a positive attitude to authority are possible under poor working conditions.

The demands of the environment can do much to mold the character of an organization. Adversity can bind people together and cause subordinates to look towards their leaders for guidance. As the results of this study suggest however, increased environmental demand in itself is not enough to bind members of a unit into a cohesive

organization with a positive attitude towards unit leadership. Group four reacted as hypothesised to the imposition of greater environmental demand, reporting higher levels of cohesion and a more positive attitude to authority than other groups, however group five reacted in the opposite manner. The nature of the work is not considered to be a reasonable explanation for the difference as both groups were involved in similar work and rated their work equally. The relationship between subordinates and supervisors requires careful consideration. Leadership is an important factor in ameliorating stress. The major differences between groups four and five were their attitudes to authority in general and more specifically, their attitudes to their supervisors. In both cases the group with lower reported stress also reported a more positive attitude towards authority in general and towards their own supervisors.

This study suggests that the relationship between authority figures and subordinates is the most significant factor in ameliorating stress. Teichman (1977) and Shaw (1983) suggested that in times of high environmental demand subordinates turn to their superiors for guidance. The present study suggests that this is not necessarily so. Much research has been conducted

into the behaviour of subordinates under stress. Less thought has been given to the behavioural changes brought about in leaders under stress. Perhaps the differences in attitudes towards authority and supervisors described in this study was a result not of differences in the way the two sets of subordinates reacted in a stressful situation but of differences in the way supervisors reacted to stress, which in turn impacted on subordinates. McGrath (1970) spoke of objective environmental demand, the objective stressor, and subjective environmental demand, the individual's perception of that demand. Good leadership lessens the subjective environmental demand by giving the subordinate somebody in whom he can put his trust to resolve the stressful situation. Masserman's (1955) second narcissistic defence, leader as omnipotent servant, discusses this palliative measure. Uninspiring leadership, not only lacks the capability of lessening the subjective environmental demand but runs the risk of itself becoming one aspect of the objective environmental demand. Poor leadership results in lack of direction and confusion which are themselves objective stressors.

Group five, for example, reported much the same stressors as other groups, as reflected by the Causes of

Stress survey, but where other groups reported we do the same things over and over again and similar questions to be moderately stressful, group five reported them to be very stressful. The difference may be one of objective demand or subjective demand. If doing things over and over again was rated as more stressful by group five because they did in fact do things over and over again more often than other groups, than it is an example of objective demand. If however, in truth, group five did not do things over and over again to a greater extent than other groups, but merely perceived that they did so, then it is an example of subjective demand. As groups four and five were employed in similar tasks with identical objectives, any difference in environmental demand could have been a result of the manner in which the task was organized by supervisors (objective demand), or the level of support received from supervisors (subjective demand). Both these explanations are possible given group five's below average rating of their supervisory staff. Further study is required to resolve this question however.

The expressed purpose of this study was to investigate the relationships among stress, cohesion and attitude to authority in an Army unit. Studies by

Strumpher (1970), and Teichman (1977), suggested that cohesion and attitude to authority would improve as a result of a group being placed under greater stress. The results of this study suggest that the imposition of increased objective environmental demand serves to intensify the existing levels of cohesion and attitude to authority. If cohesion is high and leadership is strong, adversity will cause the group to bind together even more. If cohesion and leadership are weak, adversity will weaken the group further. The consequences of sending to war, units which lack cohesiveness and are poorly led are clear. Cohesion and attitudes to authority will deteriorate even more and, having nowhere to turn for reassurance, soldiers will become stress reaction casualties.

A number of research areas are prompted by this study. It has been implied that cohesion flows from good leadership. What is good leadership in a military context? Do the attributes of a good military leader differ from those of a good leader in industry? It is reasonable to assume that at least some civilian managers who have donned uniforms during wartime have served well, but do military leaders necessarily make good captains of industry? How do we tell a good leader? This paper has

suggested that subordinates' responses to an attitude to authority questionnaire are a realistic gauge of leadership. Support for this suggestion is offered by the inverse relationship between unit stress and attitude to authority. Is the subordinate's rating of his boss a reasonable assessment of leadership ability? Although this is an unusual and untried means of measurement, what better means of measuring a supervisor's ability to lead than by asking subordinates how well they follow.

What happens to a cohesive, well led unit when the leader changes? Even a competent leader, when first put in command of a new group needs time fit in and be trusted. While this fitting in process proceeds does the unit become vulnerable to stress? And once a group has a competant leader and a measure of cohesion, how can increased stress be used to further improve cohesion and attitude to authority?

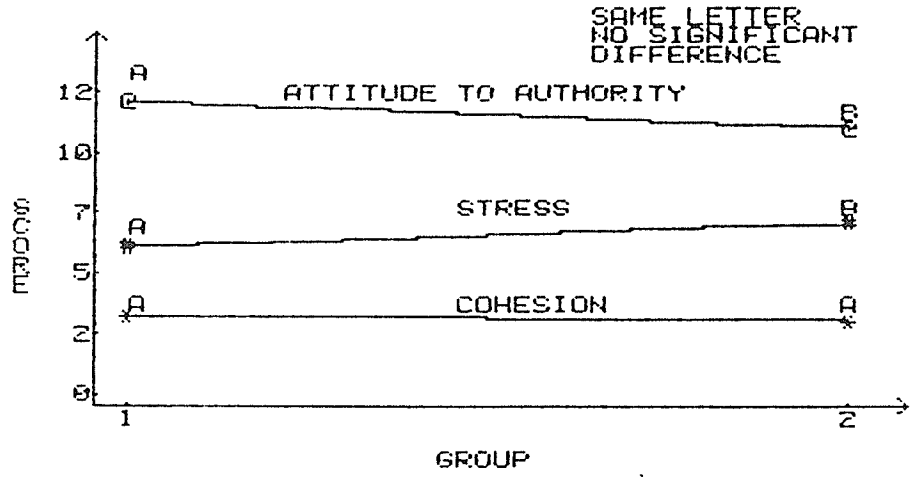
In addition to suggestions for further research, a number of practical considerations arise out of this study. Although military commanders would agree in unison that cohesion and leadership are important to the well-being of any organization, the degree of importance may be underestimated. Lieutenant-General R. D. Lawrence, President of the National Defence University,

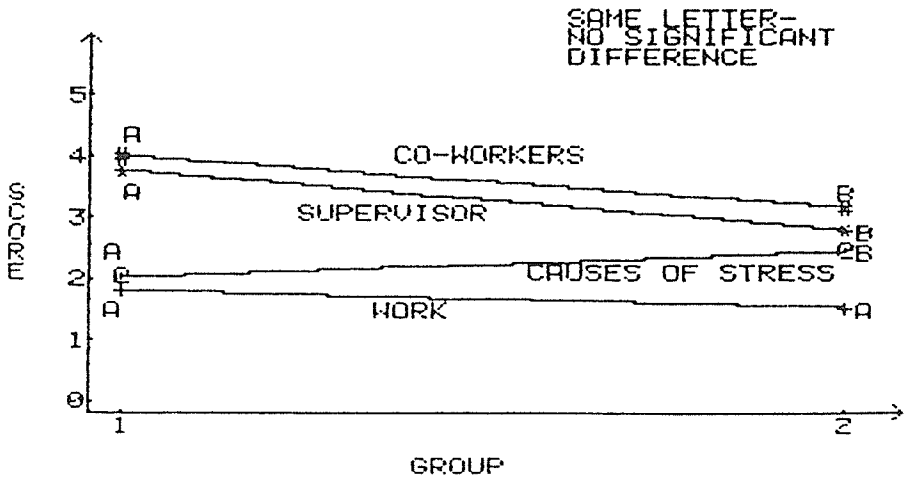
Washington, D. C., speaking of the current Iran/Iraq war stated that "cohesion ... has so far played a more significant role than all the sophisticated weapons on either side" (Henderson, 1985). If this is so, questions of leadership and cohesion should be at the centre of any military training. Practical training in leadership and exercises designed solely to instil cohesion should be planned and conducted with as much care as weapons training and tactical exercises. Instruments to measure cohesion and leadership skill should be developed so that shortcomings could be addressed. Newly formed or recently reorganized units should engage in medium stress cohesion building exercises such as wilderness training before being subjected to more strenuous operations. Much of current military training contains an element of leadership education and cohesion building. These leadership and cohesion building dimensions should be recognized so they can be improved. It is not sufficient to say, post hoc, that such and such an activity fosters cohesion and a positive attitude to authority. Activities must be designed with their appropriatness for building cohesion and fostering a positive attitude towards authority in mind.

The importance of cohesion and leadership cannot be overstated. This study has shown that in an environment which is far less stressful than a battlefield, stress reported by soldiers is higher in a unit where attitudes to authority and cohesion are less positive. In a battlefield situation, poor leadership and cohesion could lead to unit ineffectiveness through loss of personnel suffering stress reaction. Cohesion and leadership are as necessary to survival on the modern battlefield as are weapons training and tactical considerations. Peacetime training must reflect this importance.

Figure Caption

Figure 4. Comparison groups four and five.





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Appendix A

SELF-ANALYSIS QUESTIONNAIRE
STPI FORM X-1

DIRECTIONS: A number of statements that people use to describe themselves are given below. Read each statement and then circle the appropriate number on the answer sheet to indicate how you feel right now. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings.

	NOT AT ALL	SOME WHAT	MODER-ATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel like exploring my environment	1	2	3	4
3. I am furious	1	2	3	4
4. I am tense	1	2	3	4
5. I feel curious	1	2	3	4
6. I feel like banging on the table	1	2	3	4
7. I feel at ease	1	2	3	4
8. I feel interested	1	2	3	4
9. I feel angry	1	2	3	4
10. I am presently worrying over possible misfortunes.	1	2	3	4
11. I feel inquisitive	1	2	3	4
12. I feel like yelling at someone	1	2	3	4
13. I feel nervous	1	2	3	4
14. I am in a questioning mood	1	2	3	4
15. I feel like breaking things	1	2	3	4
16. I am jittery	1	2	3	4
17. I feel stimulated	1	2	3	4
18. I am mad	1	2	3	4
19. I am relaxed	1	2	3	4
20. I feel mentally active	1	2	3	4
21. I feel irritated	1	2	3	4
22. I am worried	1	2	3	4
23. I feel bored	1	2	3	4
24. I feel like hitting someone	1	2	3	4
25. I feel steady	1	2	3	4
26. I feel eager	1	2	3	4
27. I am burned up	1	2	3	4
28. I feel frightened	1	2	3	4
29. I feel disinterested	1	2	3	4
30. I feel like swearing	1	2	3	4

Appendix B

Cohesion Index

Mark the most appropriate answer to each of the following questions.

1. Do you feel that you are really a part of your section?
   - __ Really a part of my section
   - __ Included in most ways
   - __ Included in some ways but not in others
   - __ Don't feel I really belong

2. If you had the chance to do the same kind of work for the same pay, in another section, how would you feel about moving?
   - __ Would want very much to move
   - __ Would rather move than stay where I am
   - __ Would make no difference to me
   - __ Would rather stay where I am than move
   - __ Would want very much to stay where I am

3. How does your section compare to other sections in the company on each of the following points?

	Better than most	About the same as most	Not as good as most
The way the men get along together	__	__	__
The way the men stick together	__	__	__
The way the men help each other on the job	__	__	__

4. For the following three questions write the first name of as many fellow Cpl/Ptes in your section as you want.

   a. If you were going on an overnight patrol, who in your section would you most want to go with?

   _____

   b. If you were going on an overnight patrol, and those you picked first couldn't go with you, who would you choose next?

   _____

   c. If you were going on an overnight patrol who would you not want to go with at all?

   _____

How many Cpl/Ptes in your section? __

Appendix C

General Attitude to Institutional Authority

Each of the following statements, may be true or false, or partially true or partially false. Give your opinion as to the amount of truth in each of the following statements by circling the appropriate number for each statement.

For example, in statement 1. below, if you believe that police are generally courteous you would circle 1. If, however, you do not believe that the police are generally courteous, you would circle 5. If you believe that the truth of the statement lies somewhere between true and false you would circle 2, 3, or 4, depending on just how true or false you believe the statement to be.

		true				false
1.	The police in Canada are pretty trustworthy.	1	2	3	4	5
2.	I dislike having to salute an officer.	1	2	3	4	5
3.	The law rightly claims the allegiance of every citizen at all times.	1	2	3	4	5
4.	Teachers seldom have "a sense of proportion".	1	2	3	4	5
5.	A person should obey only those laws that seem reasonable.	1	2	3	4	5
6.	The Army develops initiative.	1	2	3	4	5
7.	It is reasonable to say that, as a rule, teachers work in the best interests of their students.	1	2	3	4	5
8.	The police are quite unfair in their treatment of certain groups in society.	1	2	3	4	5
9.	The law is the embodiment of Justice and Equality.	1	2	3	4	5
10.	I disagree with what the Army stands for.	1	2	3	4	5
11.	The police have a hard job which they carry out well.	1	2	3	4	5
12.	A teacher is a somewhat ridiculous figure, posing as an authority on the important things in life, when, in fact he is often ignorant and immature himself.	1	2	3	4	5
13.	Laws are so often made for the benefit of small, selfish groups that a man cannot respect the law.	1	2	3	4	5
14.	Policemen are unnecessarily violent in handling the people they dislike.	1	2	3	4	5
15.	Teachers freely acknowledge and respect the rights of students.	1	2	3	4	5

		True				False
16.	Military drill helps to improve a person's character.	1	2	3	4	5
17.	The Army reduces men to robots.	1	2	3	4	5
18.	The law represents the wisdom of the ages.	1	2	3	4	5
19.	Teachers do not respect the individual personalities of the students.	1	2	3	4	5
20.	The police are generally impartial and quite fair in the way they carry out the law.	1	2	3	4	5
21.	The law is an ass.	1	2	3	4	5
22.	Policeman like to bully people.	1	2	3	4	5
23.	I expect there is a good reason for most rules and regulations in the Army.	1	2	3	4	5
24.	Teachers are usually ready to take quite seriously whatever it is that students feel in earnest about.	1	2	3	4	5
25.	The police help the weaker members of society.	1	2	3	4	5
26.	Obedience to the law constitutes a value indicative of the highest citizenship.	1	2	3	4	5
27.	In this day and age, students should not be expected to call a teacher "sir".	1	2	3	4	5
28.	The Army brutalizes people.	1	2	3	4	5
29.	The disciplinary measures taken by teachers are usually well considered and desirable.	1	2	3	4	5
30.	The police use their badge as an excuse to push people around.	1	2	3	4	5
31.	The sentances of judges in court are determined by their prejudices.	1	2	3	4	5
32.	People should feel proud to serve in the Army.	1	2	3	4	5

Appendix D

Job Descriptive Index

Place a Y beside those items which describe the particular aspect of your job. Place an N beside those items which do not describe that aspect, or ? if you cannot decide.

WORK

___ Fascinating
___ Routine
___ Satisfying
___ Boring
___ Good
___ Creative
___ Respected
___ Hot
___ Pleasant
___ Useful
___ Tiresome
___ Healthful
___ Challenging
___ On your feet
___ Frustrating
___ Simple
___ Endless
___ Gives sense of accomplishment

SUPERVISION

___ Asks my advice
___ Hard to please
___ Impolite
___ Praises good work
___ Tactful
___ Influential
___ Up-to-date
___ Doesn't supervise enough
___ Quick tempered
___ Tells me where I stand
___ Annoying
___ Stubborn
___ Knows job well
___ Bad
___ Intelligent
___ Leaves me on my own
___ Lazy
___ Around when needed

PAY

___ Income adequate for normal expenses
___ Barely live on income
___ Bad
___ Income provides luxuries
___ Insecure
___ Less than I deserve
___ Highly paid
___ Underpaid

PROMOTIONS

___ Good opportunity for advancement
___ Opportunity somewhat limited
___ Promotion on ability
___ Dead-end job
___ Good chance for promotion
___ Unfair promotion policies
___ Infrequent promotions
___ Regular promotions
___ Fairly good chance for promotion

CO-WORKERS

___ Stimulating
___ Boring
___ Ambitious
___ Stupid
___ Responsible
___ Fast
___ Intelligent
___ Easy to make enemies
___ Talk too much
___ Smart
___ Lazy
___ Unpleasant
___ No privacy
___ Active
___ Narrow interests
___ Loyal
___ Hard to meet
___ Slow

Appendix E

CAUSES OF STRESS

DIRECTIONS:Think about your work situation THIS VERY DAY.Some people would find that certain aspects of your work are stress invoking,that is,some people would be annoyed, bugged or bothered if they were in your situation.Listed below are a number of statements. Each statement refers to a situation which might cause stress.For each statement,circle the number associated with the answer which best describes whether or not that situation is causing you to be under stress TODAY.

	I AM UNDER STRESS BECAUSE?	NOT AT ALL	SOME WHAT	MODER-ATELY SO	VERY MUCH SO
1.	I have too many jobs to do.	1	2	3	4
2.	I could get hurt in my job.	1	2	3	4
3.	I can not live on what I am paid.	1	2	3	4
4.	My job interferes with my leisure time activities.	1	2	3	4
5.	I am not getting enough sleep.	1	2	3	4
6.	I have to wear a uniform all the time.	1	2	3	4
7.	The system does not treat me fairly.	1	2	3	4
8.	There are a lot of stupid rules to follow.	1	2	3	4
9.	Today's activities are not adequately preparing me for combat.	1	2	3	4
10.	My family suffers because of my job.	1	2	3	4
11.	I have more work to do than most people.	1	2	3	4
12	I am not given the opportunity to show my true capabilities.	1	2	3	4

	I AM UNDER STRESS BECAUSE?	NOT AT ALL	SOME WHAT	MODER-ATELY SO	VERY MUCH SO
13.	My career interferes with my private life.	1	2	3	4
14.	Working conditions are poor.	1	2	3	4
15.	I am not left alone to do my job.	1	2	3	4
16.	I have little control over my career.	1	2	3	4
17.	I may be required to hurt someone.	1	2	3	4
18.	I am not encouraged to use my initiative.	1	2	3	4
19.	My job is physically demanding.	1	2	3	4
20.	My job is boring.	1	2	3	4
21.	I miss my family.	1	2	3	4
22.	Nobody cares what I want.	1	2	3	4
23.	The equipment I have to use is not very good.	1	2	3	4
24.	We do the same things over and over again.	1	2	3	4
25.	Nobody is interested in my opinion.	1	2	3	4
26.	I put up with a lot of discomfort in my job.	1	2	3	4
27.	It takes a lot of paperwork to get anything done.	1	2	3	4
28.	I do not have a clear understanding of what my job is.	1	2	3	4
29.	I have not been well trained to do my job.	1	2	3	4
30.	We have too many inspections.	1	2	3	4

Appendix F

3 RCR Mediators of Battlefield Stress Study

Name _____ Coy __ Pl __ Sect __

Marital Status: M S

You are invited to participate in a study which will determine the effects of unit cohesion and leadership on battlefield stress. It is generally accepted that good morale and leadership are essential to the effectiveness of troops in battle. It has been shown in numerous American and Israeli studies that one benefit of good leadership and morale is to decrease the aversive effects of battlefield stress. This study will attempt to determine the relationships among stress, cohesion, and leadership.

Questionnaires are being administered to 3 RCR Corporals and Privates serving in Cyprus on United Nations peacekeeping duty, in Wainwright on Waincon, and in garrison in Winnipeg. The same surveys will be administered once again, to the same personnel when the battalion returns from Cyprus. The results of the surveys will be compared to determine any differences.

You are not required to complete these surveys if you do not wish to. Participation is completely voluntary. Nor are you compelled to participate in the subsequent survey administration merely because you participated in this one. If you do choose to participate, you may withdraw at any time.

If you do choose to complete the surveys, please be as honest as possible. All responses are confidential and will not be revealed to anyone not involved in the conduct of this research. You are requested to give your name only so that the responses you give today, can be compared (by a computer) to the responses you give to the same questionnaire later. Group data will be pooled for comparison purposes but individual responses will not be used.

You will find the questions in this survey quite interesting and easy to answer. If you find, that you do have difficulty with a question, give the best answer you can. If you don't understand a question, raise your hand and the questionnaire administrater will help you.

When the research is completed, a short summary of the findings and recommendations will be prepared and made available to all participants.

Are there any questions at this point? Turn the page and begin.