UNDERSTANDING LEADERSHIP AND TEAMS

IN THE MILITARY CONTEXT

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ABSTRACT

Given that the focus in the military context is on the team rather than the individual, the importance of unit (or work team) cohesion as a social influence on work team performance is critical to the operational effectiveness of the Canadian Forces. Accordingly, understanding the effects of leader behaviour in the cohesion-performance relationship is of particular significance. And so, the objective of this paper is to explicate the integrative influence of military leadership and military cohesion on work team performance. To this end, this paper begins with a review of several research findings on military leadership. Next, we review the existing research on military cohesion. And lastly, in an attempt to shed light on how leadership among work teams can be understood in the Canadian Forces, we provide a model describing the relationships among leadership, cohesion, and work team performance.

INTRODUCTION

There exists a plethora of research on effective performance of teams in the workplace. Of particular interest to this paper, the academic literature highlights a strong relationship between team cohesion and team performance and between leadership and team performance in military and other contexts (e.g., Shangley & Langfred, 1998; Siebold & Lindsay, 1999). Thus, an in depth examination of these relationships is required to arrive at an adequate understanding of effective performance of teams in the military. This paper fulfills this objective by specifically examining three major topics: leadership in teams, cohesion in teams, and the effects of leadership and cohesion on work team performance.

The first section of this paper is devoted to reviewing leadership in teams. In this section, the emphasis is placed on the relevance of leadership to the military context, the influence of leadership on team performance, and leader-subordinate relations in teams. In the next section, we review the extant literature on cohesion in teams with a focus on the importance of cohesion to the military context. Two conceptual models of cohesion that are particularly relevant to military organizations are elaborated, and with reference to a recent study investigating the effects of cohesion in the Canadian Forces (i.e., Ahronson, 2002), the cohesion-performance relationship is reviewed. The last section of this paper incorporates the findings of the previous two sections by providing a model that clarifies the integrative effects of leadership and cohesion on work team performance.

LEADERSHIP IN TEAMS

The Importance of Leadership in the Military

> Whatever its causes, military incompetence implies a failure in leadership. Of the psychological problems that beset military officers few exceed in severity those associated with leadership. In this respect they are required to fulfill incompatible roles. They are expected to show initiative, yet remain hemmed in by regulations. They must be aggressive, yet never insubordinate. They must be assiduous in caring for their men, yet maintain an enormous social distance. They must know everything about everything, yet never appear intellectual. – Norman Dixon (1976)

Leadership has long been considered as critical to the operational effectiveness of military organizations. In the above passage, Norman Dixon illustrates both the importance given to leadership in the military, as well as some of the complexities that are relevant to understanding leadership today. Undoubtedly, it is because of the life-and-death nature of military operations and the importance of the military to a nation's survival that leadership has typically been studied more seriously in military organizations than in civilian institutions (Waddell III, 1994). For example, the U.S. Army has identified leadership as the most essential component of combat power or the ability to fight and win (Kane & Tremble, 2000). Yet as James L. Stokesbury noted, "we do not know exactly what makes men get up out of a hole in the ground and go forward in the face of death at a word from another man" (Waddell III, 1994, pp. 29). And so, leadership remains one of the highest and most elusive of qualities.

Leadership in the Canadian Forces

The Canadian Forces have a number of publications that specifically state its doctrine on leadership. Among the doctrinal statements, leadership has always been the primary function of all commissioned and non-commissioned officers (DND Canada, 1973), and according to the current doctrinal authority (*Leadership*), leadership is defined

as “that combination of persuasion, compulsion and example that makes people do what you want them to do” (DND Canada, 1978). A leader is “anyone who directs and influences people in such a way that they will act with willing obedience, confidence, respect, and loyal cooperation in order to accomplish a mission” (DND Canada, 1978).

In the last decade, the Canadian Forces Directorate for Human Resource Research and Evaluation (DHRRE) has conducted numerous research projects on topics related to leadership. For example, Stouffer (1994) attempted to identify the leadership attributes and behaviours that could be assessed in the selection of junior naval officers and the selection of junior combat arms officers, and Tzvetanka Dobreva-Martinova (1999) examined leadership behaviour in the context of human dimensions of operational combat readiness, such as morale and cohesion, professional morale, perception of immediate leader’s skills, and confidence in leaders at different levels. In addition, other studies in the 1990s that have been conducted by DHRRE have examined the relationship between several occupational personality attributes and performance (e.g., O’Keefe, 1999).

As a part of DHRRE’s research paradigm, either the Unit Morale Profile (UMP) or the Ship’s Effectiveness Profile (SEP) are typically administered to Canadian Forces’ members participating in research studies. In terms of item content, these instruments are virtually identical survey documents designed for different sections of the Canadian Forces. Whereas the UMP is administered to the Canadian Army, the SEP is administered to the Canadian Navy. The UMP and SEP include several scales that purport to measure different aspects of the work environment. Among the different facets measured by these instruments, the leadership construct is currently assessed using

the Bass Multifactor Leadership Questionnaire (MLQ 5x, Military Format, 1996), and leadership in the context of DHRRE research is defined as "an individual's personal influence that causes another individual or a group to accomplish a task or an activity that the leader intends to achieve" (UMP, 2001).

The MLQ was developed and refined by Bass and colleagues (Avolio, Bass, & Jung, 1996; Bass & Aviolo, 1990), and it measures a broad range of leadership styles using the most commonly employed measure of transactional and transformational leadership. The different dimensions measured with this instrument are transactional leadership (Contingent Rewards, Management-by-exception) transformational leadership (Idealized Influence, Inspirational Motivation, Intellectual Stimulation, and Individualized Consideration), and laissez-faire leadership (UMP, 2001).

According to Bass (1985a, 1985b), the laissez-faire leadership style is not among the sets of behaviours that are typically displayed by leaders to influence subordinates. That is, laissez-faire leaders leave the decision making up to their subordinates, and these leaders are typically perceived as giving up responsibility for leading, indifferent, indecisive, and often inaccessible (UMP, 2001). Effective leaders, on the other hand, use two primary sets of behaviours to influence subordinates: (1) transactional behaviours, and (2) transformational behaviours (Bass, 1985a; 1985b).

The first set, transactional behaviours, defines an exchange-based influence between leaders and subordinates whereby followers exchange effort for rewards received from their leaders. In the transactional approach, the leader is said to answer a follower's immediate needs and the follower gives the leader the right to command

him/her. Transactional leaders are perceived as being task oriented and not having an anticipated outlook on the future (UMP, 2001).

Alternatively, transformational leaders are thought to go beyond a simple exchange between work and reward. This exchange implies the desire to integrate the leader's vision in order to have a real but intangible reward such as to conceptualize and model the leader's behaviour, which requires interdependent co-ordination. The transformational leader is thought to influence follower behaviour by a process that gets the follower to internalize key values and beliefs specific to the organization. According to Bass, transformational leader behaviours promote the following subordinate outcomes: admiration, respect, and trust of the leader; motivation and commitment to shared goals and visions; innovative and creative approaches; and growth reflecting the unique needs and desires of individual followers. In other words, transformational leadership is thought to accentuate the level of consciousness in subordinates towards new and challenging goals and visions, to instill the desire in followers to perform their best at work while generating intellectual stimulation, and from the follower's perspective, transformational leaders are characterized as charismatic individuals who care for subordinates' well-being (UMP, 2001).

Accordingly, Bass proposed that follower outcomes promoted by transformational behaviours result in levels of organizational effort and performance over and beyond what is possible by transactional behaviour. These effects of transformational leadership on subordinate outcomes define the augmentation hypothesis (Waldman, Bass, & Yammarino, 1990), which has guided empirical testing of Bass's ideas about transformational leadership (Kane & Tremble, 2000).

Clearly, Bass' ideas are especially attractive to military organizations, such as the Canadian Forces. That is, the Canadian Forces' doctrine states that leadership is the primary function of all commissioned and non-commissioned officers, and it implies that leaders effectively contribute to unit performance by using a combination of "persuasion, compulsion and example". In a similar vein, transformational leaders are thought to promote admiration, respect, trust of the leader, motivation, and commitment to shared goals and visions, each of which are elements that could contribute to effective team performance in the military context. Undoubtedly, it is for this reason that leadership in the Canadian Forces is currently operationalized in terms of the MLQ.

Leadership and Team Performance

To maintain consistency with DHRRE's conceptual and empirical definition of leadership, this section focuses on research findings from transformational leadership studies that are particularly related to work team performance in the military context. In fact, a considerable amount of research has investigated the effects of transformational leadership behaviours on leader or unit performance and effectiveness (Lowe, Kroeck, & Sivasubramaniam, 1996). For example, in a study using a sample from the United States Air Force Academy, Clover (1990) found a direct link between transformational leadership and team performance; transformational leaders had higher performing squadrons. In other research, Lowe et al. (1996) conducted a meta-analysis to test the augmentation hypothesis by examining 22 published and 17 unpublished studies that specifically investigated leader effectiveness and its relationship to leadership behaviour, as measured by the MLQ. The meta-analysis results consistently indicated that leader effectiveness was significantly predicted by transformational leader behaviours.

However, this meta-analysis also highlighted the limited amount and range of subordinate outcomes examined in the transformational leadership research. This fact was particularly true for the hypothesized direct effects of transformational leader behaviours on subordinate outcomes, such as unit (or work team) performance. For example, of the 22 published studies, 13 reported dependent measures of subordinate outcomes. And of these 13, 12 studies used satisfaction with the leader as the dependent measure. Extra effort by subordinates was the next most frequently measured outcome (5 studies).

Nonetheless, Lowe et al.'s (1996) meta-analysis did indicate that there were positive relationships between subordinates' perceptions of transformational leadership and the outcomes of leader effectiveness, satisfaction, and extra effort. As such, these meta-analytic findings indicate that transformational leadership has a positive effect on a range of subordinate outcomes that are conducive to team performance. That is, these findings suggest a link, albeit indirect, between transformational leadership and team performance.

The results of more recent studies also lend support to Bass' augmentation hypothesis. Of particular significance for this paper, Kane and Tremble (2000) examined subordinate outcomes of transformational leadership for a military sample. Kane and Tremble's results were consistent with earlier research indicating that transformational leader behaviours uniquely predicted subordinate extra effort and job motivation, after having accounted for the variance in the dependent variables predicted by transactional behaviours.

Other recent research has focused on the link between subordinates' reported trust in their leaders in order to determine the effects of transformational leadership on team performance (Dirks, 2000; Podsakoff, MacKenzie, Moorman, & Fetter, 1990). According to Yukl (1998), trust in leadership is one means by which transformational leadership operates, and it has been suggested that trust is important if followers are to accept goals, beliefs, or vision of the leader (Bennis, & Nanus, 1985). In line with this reasoning, Podsakoff et al. (1990) found that transformational leader behaviours indirectly influenced whether subordinates' worked beyond their role expectations. Specifically, this relationship was mediated by followers' trust in their leaders.

In another study, Dirks (2000) found that trust in leadership was a direct predictor of team performance. Dirks' explanation for his findings was consistent with Bennis and Nanus (1985). He argued that trust in leadership was an important determinant of team performance because it allowed the team to be willing to accept the leader's activities, goals and decisions, and work hard to achieve them. In particular, Dirks noted that the leader's role typically involved a number of activities related to team performance, such as determining team member roles, distributing rewards and motivating employees, developing team members, and setting the team's goals and strategies. Dirks concluded that when the team members did not feel that they could rely on their leader or that the leader did not have the team's interests at heart, they were unlikely to carry out the roles specified by the leader or to work toward the performance-related objectives and strategies set by the leader.

In sum, the transformational leadership research to date indicates that there is a positive relationship between transformational leader behaviours and team performance

in the military context. Not only do transformational leader behaviours result in subordinate outcomes that are conducive to team performance, but trust in leadership has also been found to both directly and indirectly enhance team performance.

Leader-subordinate Relationships

Two distinct approaches have been used to describe the phenomena of leader-subordinate relationships (Vecchio, 1982). The first approach, the Average Leadership Style (ALS) or between-group approach, assumes that leaders act in a relatively homogeneous way to all of their subordinates within a work unit. That is, a leader tends to have a style that characterizes his or her interactions with all subordinates. Given this theoretical approach, many early leadership studies used the average of the responses from all of a leader's subordinates as the best description of the leader's style.

The second theoretical approach interprets leadership at the dyadic level of analysis, where the dyad consists of the leader and one subordinate in the work unit. As such, the dyadic view assumes that leaders do not exhibit the same behaviours to each of their subordinates, thus varying leadership style across subordinates. Proponents of the dyadic approach (e.g. Leader Member Exchange [LMX], Dienesch & Liden, 1986; Graen & Scandura, 1987; Williams & Podsakoff, 1992) have argued that the dyadic relationship between a leader and his or her subordinates is the most appropriate unit of analysis for conducting leadership studies. For example, Williams and Podsakoff (1992) contended that although a leader's overall style does predict attitudinal criteria, the dyadic model (as represented by individual leader behaviour ratings) also contributes to the variance explained in dependent variables.

An example of the dyadic approach is the Leader Member Exchange (LMX) model. According to LMX theory, leadership processes will be effective when high LMX occurs, or when a high quality social exchange relationship is developed and maintained (Cogliser & Schriesheim, 2000). In line with this reasoning, positive relationships have been found for performance, job satisfaction, satisfaction with supervision, role clarity, and organizational commitment (Gerstner & Day, 1997).

Of particular relevance to this paper, LMX theory and Transformational Leadership theory both conceptualize effective leadership in a similar manner (Gerstner & Day, 1997). That is, the quality of the leader-follower relationship put forth by LMX theory is the type of relationship that would be expected between a transformational leader and his or her followers. In particular, both theories argue for leaders to encourage and understand the viewpoints of subordinates in order to engage in quality relationships with them (Aviolo & Bass, 1995; Gerstner & Day, 1997; Kuhnert, 1994). LMX theory also describes a quality leader-subordinate relationship as one that denotes mutual respect and trust. Similarly, Yukl (1998) argued that trust in leadership is a means by which transformational leadership operates. And finally, the effects of LMX leadership (e.g., employee job performance) are also those that are traditionally associated with transformational leadership (Gerstner & Day, 1997). Based on the conceptual and empirical similarities between these two leadership theories, the benefits associated with high quality leader-follower relationships (as typified by LMX theory) can be viewed as additional support for the benefits of transformational leadership at all levels within an organization (DND Canada, 2001).

Naturally, the majority of LMX research has specifically focused on the antecedents within dyads and the outcomes of these relationships (Graen & Uhl-Bien, 1995). One unfortunate consequence of this focus has been the separation of leader-subordinate relations from their social context. That is, in terms of studying leadership in the military context, it is especially relevant to consider the relative magnitude of individual attributes and behaviours within groups as well as attributes of groups within organizations. Traditional group theory suggests that it is of utmost importance to consider the work unit context in which the dyad resides, as all behaviour takes place within the context of one or more larger systems (Hare, 1992). As such, the LMX relationship does not develop in a vacuum, but involves characteristics of the leader and the subordinate, their interaction, and the situation in which the interaction develops.

This fact is especially relevant for understanding the relationships among leadership, cohesion, and work team performance. For example, in a recent study Cogliser and Schriesheim (2000) found that leaders tend to develop differentiated exchange relationships among subordinates, and that work unit context, such as work team cohesion, significantly affected how these relationships were developed as well as the individual difference factors that both supervisors and subordinates brought to the relationship. To give an appropriate backdrop for understanding the integrative influence of leadership and cohesion on work team performance, we now turn to an examination of cohesion in the military context.

COHESION IN TEAMS

The Importance of Cohesion in the Military

Cohesion has long been considered by industrial-organizational, military, and sports psychologists (among others) to be one of the most important small-group properties (Dion, 2000). In military psychology, it is a topic of significant interest that has generated considerable research over the past several decades (Oliver, Harman, Hoover, Hayes, & Pandhi, 1999). One reason for this interest is due to the fact that military leaders, policy makers and social scientists consider cohesion to be an important ingredient for combat effectiveness and performance. For example, Siebold (1999) argued that the concept of the cohesive and organized small unit combat formation is of great value for the development of tactics and the synchronization of individual and teams. Similarly, Tziner and Vardi (1983) contended that concerns with cohesion are more than academic in combat situations; a noncohesive unit could lead to fatalities in artillery and tank crews.

Since the 1960s, several research studies have demonstrated that team cohesion is related to other important group phenomena, such as work team performance, job satisfaction and reported well being (Bliese & Halverson, 1996; Dion, 2000; Dion & Evans, 1992; Evans & Dion, 1991; Gully, Devine & Whitney, 1995; Keller, 1986; Langfred, 2000; Mullen & Cooper, 1994). Despite these findings, cohesion has been defined in many ways. From Festinger, Schachter and Back's (1950) 'Field of Forces' to multidimensional conceptualizations, such as Carron's Model (1988), there is a considerable lack of agreement about how to conceptualize and measure this construct (Ahronson, 2001; Bliese, & Halverson, 1996; Carless & De Paola, 2000; Carron,

Widmeyer, & Brawley, 1985; Carron & Brawley, 2000; Chin & Salisbury, 1999; Cota, Longman, Evans, Dion, & Kilik, 1995; Mudrack. 1989; Mullen & Cooper, 1994; Shangley & Langfred, 1998, Siebold, 1999; Wech, Mossholder, Steel, Bennett, 1998; Xie & Johns, 2000). Nonetheless, in a recent meta-analysis of the military cohesion literature, Oliver et al. (1999) demonstrated robust findings for several correlates of cohesion, such as team and individual performance and job satisfaction. Clearly, the cohesion construct remains one of the most important small group properties, if not the most important property of groups (Dion, 2000).

Recent Conceptualizations of Cohesion

In the last two decades, applied researchers have primarily examined cohesion in terms of sports teams or military small units (Siebold, 1999). In this section, we provide a selective review of two recent conceptualizations of cohesion that demonstrate relevance to the Canadian military context. The first conceptualization, Carron's model (Carron, Widmeyer, & Brawly, 1985; Brawley, Widmeyer, & Carron, 1987), came out of research on sports teams, whereas the second conceptualization, the U.S. Army Research Institute's (ARI) model (Siebold, 1987b; Siebold & Kelly, 1987b), was the result of research on military small units.

Carron's model

In an attempt to understand and measure cohesion in sport teams, Albert V. Carron and his colleagues developed a conceptual model of cohesion, which was derived from the group dynamics literature (Carron et al., 1985; Brawley et al., 1987). According to the authors, their multidimensional model taps both group and individual beliefs of group members, and it is grounded in the assumption that cohesion can be assessed

through those beliefs. Consequently, two key distinctions were made to define group cohesion. The first was the distinction between the individual and the group, and the second was the distinction between task and social cohesion.

Using a model that incorporates these two distinctions, along with an extensive process of interviews, administration, and modification of the scale, Carron and his colleagues developed the 18-item Group Environment Questionnaire to measure cohesion in sports teams. This instrument measures the following factors: 1) individual attraction to the group – social (ATG-Social), 2) individual attraction to the group – task (ATG-Task), 3) group integration – social (GI-Social), and 4) group integration – task (GI-Task). Individual attraction to the group (social) reflects individual team member's feelings about personal involvement in the social interaction of the group; individual attraction to the group (task) describes individual team member's feelings about personal involvement in the group task; group integration (social) reflects individual team member's perceptions about closeness and bonding regarding the team's social activities; and group integration (task) is an individual team member's perceptions about the similarity and closeness within the team about accomplishing the task.

Although this conceptual model was developed to understand cohesion in sports teams, some group dynamics theorists subsequently suggested that it had broader applications in other types of groups (e.g. Dion & Evans, 1992). For example, it has been argued that the distinction between individual attraction to the group and group integration has applications for work teams. That is, cohesion has both individual level (e.g., absenteeism, turnover) as well as group level outcomes (e.g. team performance), and conceptually it is important to recognize this distinction when defining cohesion

(Wech, Mossholder, Steel, & Bennet, 1998). As Carless and DePaola (2000) contended, organizations need to understand the individual and group level perspective to adequately address the issue of work team effectiveness. Furthermore, the distinction between task and social cohesion has clear precedence within group research (Dion, 2000). For example, several other researchers have independently suggested separating measurement of the task and social components of cohesion (Tziner, 1982a, 1982b; Wheeless, Wheeless, & Dickson-Markham, 1982; Zaccaro, 1991).

This model is particularly relevant to this paper because the Canadian Forces currently utilize it to operationalize cohesion in the Unit Morale Profile (UMP) and the Ship's Effectiveness Profile (SEP). Recall that the UMP and SEP include several scales that purport to measure different aspects of the work environment. One of the aspects measured by these instruments is the cohesion construct, which is currently operationalized in terms of a work-adapted version of the Group Environment Questionnaire (GEQ; Carron & Brawley, 2000).

U.S. Army's Research Institute

In the mid 1980s, the United States Army Research Institute (ARI) initiated a research program to investigate how to build and sustain unit cohesion. The primary objective of this research was to determine the dynamics of the relation between cohesion and unit performance and to develop training tools, measures, and insights for leader and leadership development. In effect, ARI investigated what leaders could do to develop their soldiers and build cohesive units that could perform well in combat (Siebold, 1987a).

The ARI researchers defined cohesion in terms of the "degree to which mechanisms of social control operant in a unit maintain a structured pattern of social relationships between unit members, individually and collectively, necessary to achieve the unit's purpose" (Siebold, 1987b, p.5). As Siebold (1999) noted, this definition implies that individual group members perceive many forces as external to the individual. In other words, an individual's attraction to the unit is irrelevant because the military unit and its actions are thought to have claims on the individual, who in turn, perceives the unit as powerful. Yet the group is also perceived as a source of power for the individual member (Siebold, 1999).

In terms of operationalizing cohesion, ARI researchers deviated from Carron and his colleagues in arguing that measuring this construct in terms of only peer-group bonding is not adequately representative. They argued that bonding between leaders and subordinates and between group members and the unit as a whole must be included to fully represent military unit cohesion. Consequently, the measures that were subsequently developed examine three basic components of small unit cohesion: horizontal, vertical, and organizational (Siebold, 1987a, 1987b). Each component is conceived as having an affective (emotional or feeling) and an instrumental (action or skill) aspect. The components with their affective and instrumental aspects, respectively, are 1) horizontal cohesion—peer bonding and teamwork, 2) vertical cohesion—leader caring and leader competence, and 3) organizational cohesion—pride and shared values, and attainment of needs and goals.

Using this multidimensional model, two scales were developed. There is a long form (79-items) known as the Combat Platoon Cohesion Questionnaire, as well as a 20-

item, short form of the questionnaire known as the Platoon Cohesion Index (Siebold & Kelly, 1988). Each scale is made up of questionnaire items that are clustered into scales and are used to measure each aspect of each of the three components.

Cohesion and Team Performance

Two recent meta-analyses indicate that cohesion is a determinant of group performance (Evans & Dion, 1991; Mullen & Cooper, 1994). As alluded to at the outset if this section, a recent meta-analysis of the military cohesion literature confirmed the cohesion-performance relationship, demonstrating that cohesion was strongly associated with group performance in the military context (Oliver et al., 1999).

There is also evidence that performance is particularly related to specific dimensions of cohesion. For example, Mullen and Cooper (1994) argued that the cohesion-performance effect is driven predominantly by commitment to the task. Two studies conducted by Zaccaro and his colleagues supported this contention, indicating that differentiating task and interpersonal cohesion improves the prediction of group task performance. Not only did task cohesion more strongly facilitate group performance than did interpersonal cohesion on an additive task, but Zaccaro (1991) also demonstrated a stronger association for task cohesion with group and individual performance than for interpersonal cohesion (Zaccaro & Lowe, 1988).

Like Zacaro's bidimensional model, Carron's model of cohesion also distinguishes task cohesion from social cohesion. And consistent with Zaccaro's findings, recent studies indicate that the task cohesion measures of the GEQ were more strongly associated with individual work output, as well as perceptions of collective self-efficacy than were the social measures of cohesion for sports teams (Kozub & McDonnel,

2000; Prapavessis & Carron, 1997a). Clearly then, the literature supports Mullen and Cooper's (1994) contention that the cohesion-performance relationship is predominantly driven by commitment to the task.

In terms of the GEQ, the dimension of task cohesion encompasses individual team member's feelings about personal involvement in the group task, as well as individual team member's perceptions about the similarity and closeness within the team about accomplishing the task. If individuals feel personally involved in the group task, and perceive that the team shares closeness about accomplishing the task, such highly cohesive beliefs may act to bolster group members' beliefs regarding the agency of their actions, facilitating the cohesion-performance relationship.

Nonetheless, it is important to also consider that social cohesion is an integral aspect of cohesive groups, and contributes to the link between cohesion and performance, albeit to a lesser extent than task cohesion. Recall that social cohesion reflects individual team member's feelings about their personal involvement in the social interaction of the group, as well as individual team member's perceptions about closeness and bonding regarding the team's social activities. The heightened interpersonal attraction that accompanies highly socially cohesive groups might facilitate group processes that are potentially related to group performance. For example, social cohesion could promote more within-group communication, which in turn might facilitate group members' individual and group task accomplishments (Wech, Mossholder, Steel & Bennett, 1998).

Recent research with the Canadian Forces provides some support for the contention that the cohesion-performance relationship is driven by both elements of task and social cohesion (Ahronson, 2002). That is, Ahronson examined several correlates of

cohesion in a path analytic model. Among the variables examined, the relationship between cohesion and subjective perceptions of work team (or unit) performance was examined for a sample of 447 Canadian Forces' employees from the Canadian Army and the Canadian Navy. The results of the path-analytic model replicated previous research findings in demonstrating a direct link between cohesion and job performance (Oliver et al., 1999). And as originally hypothesized, Ahronson found that both task and social cohesion predicted perceptions of job performance. Specifically, team members' perceptions about the similarity and closeness within the team about accomplishing the task (GI-Task), and team members' feelings about their personal involvement in the social interaction of the group (ATG-Social), significantly predicted perceptions of job performance.

Based on his results, Ahronson contended that the cohesion-performance relationship is not predominantly driven by commitment to the task, as put forth by Mullen and Cooper (1994). Rather, in the military context both task and social cohesion are involved in this relationship. Ahronson suggested that it may be the case that if an individual team member perceives that the team shares closeness about accomplishing the task, such a highly cohesive belief might act to bolster this member's beliefs regarding the agency of the teams' actions, resulting in positive subjective judgments about group performance. In like manner, Ahronson proposed that if an individual team member reports feeling personally involved in the social interaction of the group, such personal involvement might facilitate group processes that are potentially related to group performance. For example, greater personal involvement might result in the individual

team member engaging in more within-group communication, which may also act to bolster that individual's perceptions of team performance.

The long and short forms of the ARI questionnaires have also been examined in several research projects in military organizations, including the U.S. Army, the U.S. Army Reserve, the U.S. Army National Guard, the Israeli Defence Force, and the Canadian Forces (for a review see Siebold, 1999). The results of this research indicate that cohesion is empirically related to (simulated) unit combat performance. Although the correlation level with performance criteria has varied, the correlations between horizontal cohesion and unit performance (the most often computed) typically resulted in a moderate correlation.

This finding is consistent with the research using the work-adapted version of the GEQ in the Canadian Forces. Recall that horizontal cohesion represents peer bonding and teamwork, vertical cohesion represents leader caring and leader competence, and organizational cohesion represents pride and shared values, and attainment of needs and goals. Clearly, the ARI model's definition of horizontal cohesion shares conceptual similarity with Carron's model of cohesion. That is, peer bonding represents an affective (emotional) aspect of cohesion, which is conceptually similar to the GEQ's social dimension of cohesion. Similarly, horizontal cohesion is comprised of an instrumental (action or skill) aspect, which shares conceptual similarity with the GEQ's task dimension of cohesion. In sum, the extant research on the cohesion-performance relationship indicates that there is a direct link between cohesion and performance in the military context, with both social (or affective), as well as task (or instrumental) aspects driving this relationship.

Leadership and Cohesion

Although many studies on the cohesion-performance relationship have considered the possible effects of cohesion on other variables, few have empirically examined factors that might influence cohesion. Specifically, the relationship between leader behaviours and cohesion has received little attention. Nonetheless, studies that have operationalized cohesion in terms of the GEQ with sports teams have consistently indicated that high levels of task cohesion are linked to a leadership style that is strong in training and instruction, social support, democratic behaviour, positive feedback, and avoids autocratic decision making (Shields, Gardner, Bredemeier, & Bostro, 1997; Westre & Weiss, 1991). The findings for social cohesion are less clear, but based on the data from their study, Shields et al. (1997) concluded that a leadership style accenting social support may be efficacious in supporting this form of cohesion. The sport psychology literature then, indicates that leadership is related to both aspects of social (or affective) and task (or instrumental) cohesion.

In the military psychology literature, leader actions have been widely cited as significant contributors to unit cohesion. For example, in an overview of the literature on morale, cohesion, and esprit, Manning (1991) suggested that effective communication of information from leaders to group members and a clear understanding of the mission is a factor that significantly contributes to unit cohesion. Similarly, Siebold (1987a) put forth that concerned, competent, and honest leadership facilitate unit cohesion. Likewise, other researchers have identified soldiers' perceptions of leaders as caring and competent as a potential influence on the development of cohesion (Kirkland, Bartone, & Marlowe, 1993; Ingraham & Manning, 1981; Manning, 1991; Siebold & Kelly, 1987a).

In a recent study that addressed these assertions, Bartone and Adler (1999) collected data over time during a military peacekeeping deployment in order to examine trends in unit cohesion levels and the relations of cohesion to variables that may influence its growth. Spending time together appeared to be a necessary, but not sufficient, condition for the development of unit cohesion. Rather, the extent to which soldiers perceived their leaders as concerned for their welfare, as well as their confidence in their leader's abilities, was strongly correlated with cohesion throughout the deployment, and it increased in its relation to cohesion over time. Bartone and Adler (1999) concluded from these findings that as leaders are able to demonstrate their concern for the welfare of soldiers in various ways, as well as prove their own technical competence and skill, soldiers develop stronger ties to the unit.

Evidently, there is a causal link between leader behaviours and level of military unit cohesion. Although few research studies have investigated the mechanisms underlying the leadership-cohesion relationship, the extant findings suggest that leader behaviours consistent with transformational leadership facilitate the development of highly cohesive military units. That is, the leadership-cohesion relationship is facilitated by a leadership style that demonstrates technical competence and concern for the welfare of unit members. Similarly, transformational leaders try to integrate their vision in order to have subordinates conceptualize and model the leader's behaviour. Clearly, technical competence is a necessary component for subordinates to imitate their leader's behaviour. Furthermore, transformational leaders are also characterized as individuals who care for subordinates' well-being. In other words, transformational leaders demonstrate concern for their followers. This causal link between leadership and cohesion, therefore, can be

taken as additional support for the benefits of transformational leadership in the military context.

LEADERSHIP, COHESION, AND TEAM PERFORMANCE

This section fulfils two objectives. The first is to provide a useful model for understanding the integrative influence of leadership and cohesion on work team performance in the Canadian Forces (see Figure 1). The second is to discuss several implications of this model, and to suggest directions for future military research.

Hypothesized Model

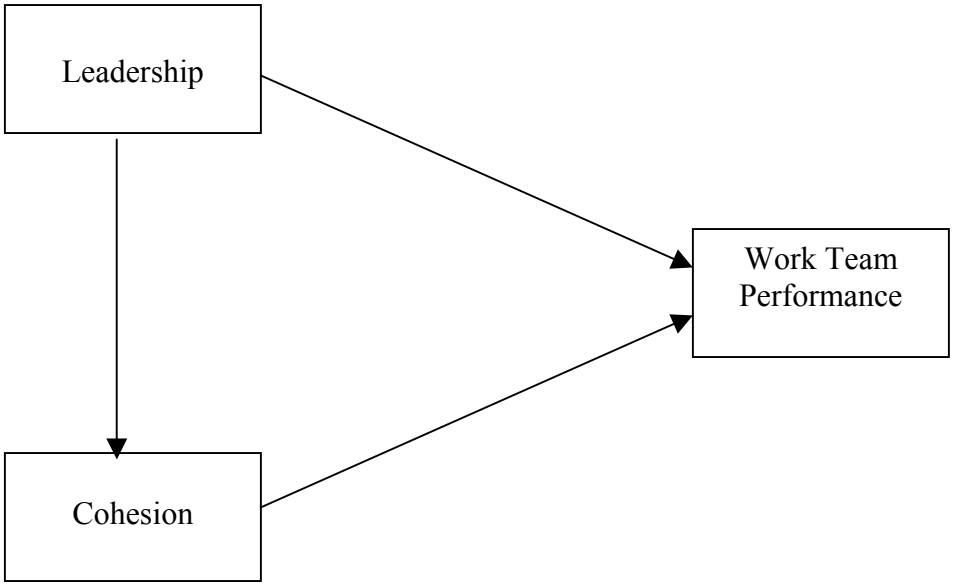
As indicated in Figure 1, the hypothesized model proposes a direct relationship between cohesion and work team performance. The unidirectional arrow proposes that cohesion leads to performance. As previously elaborated in this paper, the results of empirical studies examining the cohesion-performance relationship within military and other contexts clearly indicate that cohesion is a determinant of military unit performance, with both its social (or affective), as well as its task (or instrumental) aspects driving this relationship. It is for this reason that the hypothesized model specifies a direct and causal link between these two constructs.

Figure 1 also illustrates a proposed positive relationship between leadership and work team performance. In particular, two potential routes are specified. First, the unidirectional arrow from leadership to team performance indicates a path encompassing a direct and causal relationship between these two constructs. Second, the arrow from leadership to cohesion, along with the arrow from cohesion to team performance, specifies a second indirect path between leadership and team performance via cohesion.

There is considerable theoretical and empirical support for the first route between leadership and team performance. As Bass (1985a; 1985b) put forth, and as subsequent studies have confirmed, follower outcomes promoted by transformational leader behaviours result in levels of performance over and beyond what is possible by transactional behaviour. To this end, the research to date indicates that transformational leader behaviours not only result in subordinate outcomes that are conducive to team performance, but also result in subordinate outcomes (e.g., trust) that directly enhance team performance in the military. Thus, we proposed a direct and causal link between leadership and work team performance.

Furthermore, we proposed that cohesion might also mediate the leadership-performance relationship. We previously noted in this paper how transformational leader behaviours contribute to highly cohesive military units. In fact, studies that have operationalized cohesion in terms of the GEQ have found that leadership facilitates both social and task cohesion. In a similar vein, both social (or affective), as well as task (or instrumental) cohesion have been found to facilitate the cohesion-performance relationship. Based on these findings, it is not implausible to put forth that as transformational leader behaviours enhance cohesion, cohesion enhances work team performance. It is for this reason that we proposed the mediational path from leadership to performance via cohesion.

Figure 1. An Integrative Model of Leadership, Cohesion, and Work Team Performance



Implications and Future Directions

Just as leadership has long been long considered an essential component in military operations, military psychologists have similarly considered cohesion to be an important ingredient for combat effectiveness and performance. The review reported here further argues for the importance of leadership and cohesion in the military context. Given that the focus in the military is on the team rather than the individual, understanding the integrative influence of leadership and unit (or work team) cohesion on work team performance is of critical importance to the operational effectiveness of the Canadian Forces. To this end, the model proposed in this section not only sheds light on how leadership in teams can be understood in the Canadian Forces, it also provides a roadmap for future investigation of the relationships among leadership, team cohesion, and team performance.

The literature on the cohesion-performance relationship indicates that it is of utmost importance to build and sustain military cohesion. Particularly, this paper argues for the necessity of further determining the dynamics of the relationship among leadership, cohesion and unit performance, and developing training tools, measures, and insights for its development. In effect, investigating what leaders could do to develop their soldiers and build cohesive units is of primary concern for the Canadian Forces. One potential direction for future research is to investigate the relationships specified in the proposed model in order to determine the effects of various transformational leader behaviours on the development of cohesion over time in military units. An additional research interest is to examine this relationship in terms of how different leader behaviours might be mediated by cohesion and thus, differentially affect work team performance at different stages of group development. Undoubtedly, examining these (and other) potential relationships would help in determining what leaders could do to build highly cohesive and high performing military units.

CONLCUSION

In summary, the literature reviewed in this paper sheds light on how leadership in teams can be understood in the Canadian Forces. Several research findings that are particularly relevant to the military context were examined, and a useful model for interpreting the integrative influence of leadership and cohesion on work team performance was proposed. The academic literature indicated that transformational leader behaviours directly enhance both cohesion and work team performance. Likewise, cohesion leads to greater work team performance. Therefore, in our hypothesized model we proposed that cohesion might also mediate the leadership-performance relationship.

In conclusion, we put forth that future research investigating the mechanisms underlying the proposed model could determine the optimal methods for developing leaders that have the skills to build and command highly cohesive and high performing military units.

REFERENCES

CF Manuals

A-PD-131-002/PT-001 (CFP 131 (2)) 1973, Ottawa: DND Canada.

LEADERSHIP: *A Manual of Military Leadership for the Canadian Forces*, May 1978, DND Canada.

UNIT MORALE POFILE: Description of Measures, 2001.

Reports

Donoghue, E., Wild, B., Lapierre, L. *Leadership, selection and assessment standards in the Canadian Forces.* Paper prepared for the Director Military Employment Policy and the Director Military Human Resource Requirements, January 2001, Human Resource Systems Group Ltd., ON.

O'Keefe, D.F. *Investigating the use of occupational personality measures in the Canadian Forces*. Paper presented at the 41st Annual Conference of the International Military Testing Association (IMTA), November 1999, Monterey, CA.

Stouffer, J.M. (1994). *Elements of Effective Junior Combat Arms Officer Leadership.* CFPARU Technical Note 2/94.

Tzvetanka-Dobreva-Martinova. (1999). *Psychometric Analysis of the Unit Climate Profile Questionnaire Based on Surveys of Deployed Forces Personnel.* DHRREE Sponsor Research Report, 99-3, February, 1999.

Books and Periodicals

Ahronson, A., (2002). The nature and consequences of cohesion for a military sample. Work in Progress (MSc Thesis).

Ahronson, A., (2001). Conceptual and measurement considerations for cohesion in university workgroups. Unpublished Manuscript.

Argote, L., & McGrath, J. E. (1993). 'Group process in organizations'. In: Cooper, C. L., & Robertson, I. T. (Eds) International Review of Organizational Psychology (pp. 333-339). Chichester, England, Wiley.

Aviolo, B. J., Bass, B. M. (1995). Individual consideration viewed at multiple levels of analysis: A multi-level framework for examining diffusion of transformational leadership. Leadership Quarterly, 6, 199-218.

Aviolo, B. J., Bass, B. M. & Jung, D. I. (1996). Construct validation on the multifactor leadership questionnaire MLQ-Form 5x (CLS Report 96-1. Binghampton, NY: Center for Leadership Studies, Binghampton University, State University of New York.

Bartone, P. T., & Adler, A. B. (1999). Cohesion over time in a peacekeeping medical task force. Military Psychology, 11(1), 85-107.

Bartone, P. T., & Kirkland, F. R. (1991). 'Optimal leadership in small army units'. In R. Gal & A. D. Mangelsdorff (Eds.), Handbook of Military Psychology (pp. 393-409). Chichester, England. Wiley.

Bass, B. M. (1985a). Leadership and performance beyond expectations. New York: Free Press.

Bass B. M. (1985b). Leadership: Good, better, best. Organizational Dynamics, 3(3), 26-40.

Bennis, W., & Nanus, B. (1985). Leaders: the strategies for taking charge. New York: Harper & Row.

Bliese, P. D., & Halverson, R. R. (1996). Individual and nomothetic models of job stress: An examination of work hours, cohesion, and well-being. Journal of Applied Social Psychology, 26, 1171-1189.

Bollen, K. A., & Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. Social Forces, 69 (2), 479-504.

Carron, A. V. (1988). Group Dynamics in Sport. (London, Ontario, Canada: Spodym)

Carron, A. V., & Brawley, L. R. (2000). Cohesion: Conceptual and measurement issues. Small Group Research, 31, 71-88.

Carron, A. V., & Brawley, L. R., Widmeyer, W. N (1998). Measurement of cohesion in sport and exercise. (in J. Duda (Ed.), Measurement in sport and exercise (pp.213-226). Morgantown, WV: Fitness Information Technology).

Carron, A. V., Widmeyer, W. N., & Brawley, L. R. (1985). The development of an instrument to assess cohesion in sport teams: The Group Environment Questionnaire. Journal of Sport Psychology, 7, 244-266.

Carless, S. A., & De Paola, C. (2000). The measurement of cohesion in work teams, Small Group Research, 31 (1), 71-88.

Chin, W. W., & Salisbury, W. D. (1999). Perceived cohesion in small groups, Small Group Research, 30 (6), 751-767.

Clover, W. H. (1990). 'Transformational leaders: Team performance, leadership ratings, and firsthand impressions' In Clark, K. E., & Clark, M. B. Measures of Leadership. Leadership Library of America: West Orange, New Jersey (pp. 171-184).

Cogliser, C. C., & Schriesheim, C. A. (2000). Exploring work unit context and leader-member exchange: a multi-level perspective. Journal of Organizational Behavior, 21, 487-511.

Cohen, S. G., & Baily, D. E. (1997). What makes teams work: Group effectiveness research from the shop floor to the executive suite. Journal of Management, 23 (3), 239-290.

Cota, A. A., Longman, R. S., Evans, C. R., Dion, K. L., & Killik, L. (1995). Using and misusing factor analysis to explore group cohesion. Journal of Clinical Psychology, 51, 308-316.

Dienesch, R. M., Liden, R. C. (1986). Leader-member exchange model of leadership: a critique and further development. Academy of Management Review, 11, 618-634.

Dion, K. L. (2000). Group cohesion: From "field of forces" to multidimensional construct. Group Dynamics, 4 (1), 7-26.

Dion, K. L., & Evans, C. R. (1992). On cohesiveness: Reply to Keyton and other critics of the construct. Small Group Research, 23, 242-250.

Dirks, K. T. (2000). Trust in leadership and team performance: Evidence from NCAA Basketball. Journal of Applied Psychology, 85(6), 1004-1012.

Dixon, N. (1976). On the psychology of military incompetence. London: Jonathan Cape Ltd.

Dobbins, G. H., Zaccaro, S. J. (1986). The effects of group cohesion and leader behavior on subordinate satisfaction. Group and Organization Studies, 11(3), 203-219.

Dyce, J. A., & Cornell, J. (1996). Factorial validity of the Group Environment Questionnaire among musicians. Journal of Social Psychology, 136, 263-264.

Evans, C. R., Dion, K. L. (1991). Group cohesion and performance: A meta-analysis. Small Group Research, 22, 175-186.

Festinger, L., Schachter, S., & Back, K. (1950). Social pressures in informal groups: A study of human factors in housing. (Stanford, CA: Stanford University Press).

Gerstner, C. R, & Day, D. V. (1997). Meta-analytic review of Leader-Member Exchange theory: Correlates and construct issues. Journal of Applied Psychology, 82(6), 827-844.

Graen, G., & Scandura, T. A. (1987). 'Toward a psychology of dyadic organizing' In Cummings, L. L., Staw, B. M. Research in Organizational Behavior (Eds). JAI Press: Greenwich CT (pp. 175-208).

Graen, G., Uhl-Bein, M. (1995). Relationship-based approach to leadership: development of leader-member exchange (LMX) theory f leadership over 25 years: applying a multi-level multi-domain perspective. Leadership Quarterly, 6, 219-247.

Griffith, J. (1988). Measurement of group cohesion in U.S. Army units. Basic and Applied Social Psychology, 9, 149-171.

Gully, S. M., Devine, D. J., Whitney, D. J. (1995). A meta-analysis of cohesion and performance: Effects of level of analysis and task interdependence. Small Group Research, 26, 497-520.

Goodman, P. S., Ravlin, E., & Schminke, M. (1987). Understanding groups in organizations. Research in Organizational Behavior, 9, 121-173.

Hare, A. P. (1992). Groups, Teams and Social Interaction: Theories and Applications. Praeger: New York.

Hogg, H. A., (1992). The social psychology of group cohesiveness: From attraction to social identity. New York: John Wiley.

Ingraham, L. H., & Manning, F. J. (1981). Cohesion: Who needs it, what is it and how do we get it to them? Military Review, 61(6), 3-12.

Kane, T. D., & Tremble, T. R. Jr. (2000). Transformational leadership effects at different levels of the army. Military Psychology, 12(2), 137-160.

Keller, R. T. (1986). Predictors of the performance of project groups in R&D organizations. Academy of Management Journal, 29, 715-726.

Kirkland, F. R., Bartone, P. T., & Marlowe, D. H. (1993). Commanders' priorities and psychological readiness. Armed Forces and Society, 19, 579-598.

Kozub, S. A., & McDonnell, J. F. (2000). Exploring the relationship between cohesion and collective efficacy in rugby teams, Journal of Sport Behavior, 23(2), 120-128.

Kuhnert, K. W. (1994). 'Transforming leadership: Developing people through delegation'. In B. M. Bass & B. J. Aviolo (Eds.) Improving organizational effectiveness through transformational leadership (pp. 10-25). Thousand Oaks, Ca: Sage.

Langfred, C. W. (2000). The paradox of self-management. Journal of Organizational Behavior, 21, 563-585.

Langfred, C. W. (1998). Is group cohesiveness a double-edged sword? Small Group Research, 29(1), 124-143.

Li, F. & Harmer, P. (1996). Confirmatory factor analysis of the Group Environment Questionnaire with an intercollegiate sample. Journal of Sport & Exercise Psychology, 18, 49-63.

Lowe, K. B., Kroeck, K. G., & Sivasubramaniam, N. (1996). Effectiveness correlates of transformational and transactional leadership: A meta-analytic review of the MLQ literature. Leadership Quarterly, 7, 385-425.

Manning, F. J. (1991). Morale, cohesion, and esprit de corps. In R. Gal & A. D. Mangelsdorff (Eds.), Handbook of Military Psychology (pp. 453-470). New York: Wiley

Mowday, R. T., & Sutton, R. I. (1993). Organizational behavior: linking individual and groups to organizational contexts. Annual Review of Psychology, 44, 195-229.

Mudrack, P. E. (1989). Group cohesiveness and productivity: A closer look. Human Relations, 42, 771-785.

Mullen, B., Cooper, C. (1994). The relationship between group cohesiveness and performance: An integration. Psychological Bulletin, 115, 2210-227.

Oliver, L. W., Harman, J., Hoover, E., Hayes, S. M., Pandhi, N. A. (1999). A quantitative integration of the military cohesion literature. Military Psychology, 11(1), 57-83.

Podsakoff, P., MacKenzie, S. Moorman, R., Fetter, R. (1990). Transformational leader behaviors and their effects on followers' trust in leader, satisfaction, and organizational citizenship behaviors. Leadership Quarterly, 1, 107-142.

Prapavessis, H & Carron, A. V., (1997a). Cohesion and work output. Small Group Research, 28, 294-301.

Schutz, R., Eom, H. J., Smoll, F. L., & Smith, R. E. (1994). Examination of the factorial validity of the Group Environment Questionnaire. Research Quarterly for Exercise & Sport, 65, 226-236.

Shangley, M., & Langfred, C. W. (1998). The importance of organizational context: an empirical test of work group cohesiveness and effectiveness in two government bureaucracies, Public Administration Quarterly, 21 (4), 465-485.

Shileds, D. L. L., Gardner, D. E., Bredemeier, B. J., Bostro, A. (1997). The relationship between leadership behaviors and group cohesion in team sports. The Journal of Psychology, 13(2), 196-210.

Siebold, G. L. (1987a, April). Bonding in Army Combat Units. Paper presented at the annual meeting of Southern Sociological Society, Atlanta, GA.

Siebold, G. L. (1987b, August). Conceptualizations and definitions of military unit cohesiveness. Paper presented at the 95th Annual American Psychological Association, New York.

Siebold, G. L. (1999). The evolution of measurement of cohesion. Military Psychology, 11, 5-26.

Siebold, G. L., & Kelly, D. R. (1987b, October). The impact of unit cohesion and unit performance, morale, and ability to withstand stress: A field exercise example (Working Paper No. LM 87-13). Alexandria, VA: U.S. Army Research Institute for the Behavioral and Social Sciences.

Siebold, G. L., & Kelly, D. R. (1988). Development of the Platoon Cohesion Index (Tech Rep. No. 816). Alexandria, VA: U. S. Army Research Institute for Behavioral and Social Sciences.

Siebold, G. L., Lindsay, T. J. (1999) The relation between demographic descriptors and soldier-perceived cohesion and motivation. Military Psychology, 11(1), 109-128.

Solomon, Z., Mikulincer, M., & Hobfoll, S. E. (1986). Effects of social support and battle intensity on loneliness and breakdown during combat. Journal of Personality and Social Psychology, 51, 1269-1276.

Tziner, A. (1982a). Differential effects of group cohesiveness types: A clarifying overview. Social Behavior and Personality, 10, 227-239.

Tziner, A. (1982b). Group cohesiveness: A dynamic perspective. Social Behavior and Personality, 10, 205-211.

Tziner, A., & Vardi, Y. (1983). Ability as a moderator between cohesiveness and tank crews performance. Journal of Occupational Behaviour, 4, 137-143.

Vecchio, R. (1982). Effects of group-level and individual-level variation in leader behaviours on subordinate attitudes and performance. Journal of Occupational & Organizational Psychology, 65(2), 115-131.

Waddell III, D. E. (1994). A situational leadership model for military leaders. Airpower Journal, 8(3), 10-24.

Waldman, D. A., Bass, B. M., & Yammarino, F. J. (1990). Adding to contingent reward behavior: The augmenting effect of charismatic leadership. Group and Organization Studies, 15, 381-394.

Wech, B. A., Mossholder, K. W., Steel, R. P., & Bennett, N. (1998). Does work group cohesiveness affect individuals' performance and organizational commitment? A cross-level examination. Small Group Research, 29 (4), 472-495.

Wheeless, L. R., Wheeless, V. E., & Dickson-Markham, F. (1982). The Relations among social and task perceptions in small groups. Small Group Behavior, 13, 373-384.

Westre, K., Weiss, M. (1991) The relationship between perceived coaching behaviors and group cohesion in high school football teams. The Sport Psychologist, 5, 41-54.

Williams, M. L., Podsakoff, P. M. (1992). Effects of group-level and individual-level variation in leader behaviors on subordinate attitudes and performance. Journal of Occupational and Organizational Psychology, 65(2), 115-129.

Xie, J. L., & Johns, G. (2000). Interactive effects of absence culture salience and group cohesiveness: A multi-level and cross-level analysis of work absenteeism in the Chinese context. Journal of Occupational and Organizational Psychology, 73, 31-52.

Yagil, D. (1995). A study of cohesion and other factors of major influence on soldiers' and unit effectiveness (ART Research Note No. 95-11). Alexandria, VA: U.S. Army Research Institute.

Yukl, G. (1998). Leadership in organizations (4th ed.) Upper Saddle River, NJ: Prentice Hall.

Zacarro, S. J. (1991). Nonequivalent association between forms of cohesiveness and group-related outcomes: Evidence for multidimensionality. Journal of Social Psychology, 13, 387-399.

Zaccaro, S. J., & Lowe, C. A. (1988). Cohesiveness and performance on an additive task: Evidence for multidimensionality. Journal of Social Psychology, 128, 547-558.