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Examining the Cohesion-Performance Relationship in Athletic and Organizational Teams

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EXAMINING THE COHESION-PERFORMANCE RELATIONSHIP IN ATHLETIC AND ORGANIZATIONAL TEAMS

BY

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To complete a project of this magnitude requires a network of support, and I am indebted to many people. I am most especially grateful to my parents, Iluminado and Miriam Vallejo for their support and to Dr. Jennifer Gapin, Dr. Gualberto Cremades, and Dr. Guillermo Wated for their guidance throughout this entire project.

Table of Contents

List of Tables

Table 1

Cohesion Variables Used in Statistical Analyses

Measure	**Description**	**Dependent Variables (Subscales**
GEQ	Used to assess team cohesion	1. Group Integration-Task (GI-T) 2. Group Integration-Social (GI-S) 3. Individual Attractions to Group-Task (ATG-T) 4. Individual Attractions to Group-Social (ATG-S)
OCB	Used to assess the effectiveness of teams; also shown to be a measure assessing team cohesion	1. Helping Behavior (HB) 2. Civic Virtue (CV) 3. Sportsmanship (SP)

Table 2

Descriptive Information for Athletic Sample

	Total Sample (N = 21)		
	M	*SD*	*Range*
Age	20.14	1.28	18-23
Sport	Frequency	%	
Softball	5	23.8%	
Rowing	3	14.3%	
Soccer	8	38.1%	
Basketball	5	23.8%	
Ethnicity	Frequency	%	
African American	5	23.8%	
Hispanic	2	9.5%	
Pacific Islander	1	4.8%	
Caucasian	13	61.9%	
Gender	Frequency	%	
Male	4	19%	
Female	17	81%	

Table 3

Descriptive Information for Organizational Sample

	Total Sample (N = 16)		
	M	*SD*	*Range*
Age	33	9.67	22-54
Organization	Frequency	%	
Insurance Sales Company #1	6	37.5%	
Insurance Sales Company #2	10	62.5%	
Ethnicity	Frequency	%	
Hispanic	1	6.2%	
Caucasian	15	93.8%	
Gender	Frequency	%	
Male	7	43.7%	
Female	9	56.3%	

Table 4

Correlations of Cohesion with Team Performance: Athletic Teams

Group	**Cohesion Measure**	**Cohesion-Performance Relationship**	r^2
All teams (n = 6)	Attractions to Group-Task	.36	.13
	Attractions to Group-Social	-.36	.13
	Group Integration-Task	.18	.03
	Group Integration-Social	-.43	.19
	Helping Behavior	.12	.02
	Civic Virtue	-.05	0
	Sportsmanship	.26	.07

Note. Team performance represents an athletic team's winning percentage out of 100%.

Table 5

GEQ and OCB Subscale Scores: Athletic Teams

	Total Sample (N = 21)		
Sport	*M*	*SD*	*Range*
ATGT			4-36
Softball	28.20	6.61	
Rowing	25.32	7.37	
Soccer	24.13	8.90	
Basketball	25.40	10.71	
ATGS			5-45
Softball	37.20	5.22	
Rowing	29.67	5.51	
Soccer	33.75	7.21	
Basketball	31.40	11.14	
GIT			5-45
Softball	32.00	7.97	
Rowing	21.67	11.93	
Soccer	29.75	11.39	
Basketball	29.40	10.26	
GIS			4-36
Softball	24.40	4.51	
Rowing	20.33	3.22	
Soccer	29.12	5.57	
Basketball	20.20	7.66	
HB			7-42
Softball	39.20	5.59	
Rowing	29.33	9.71	
Soccer	36.00	9.74	
Basketball	34.00	13.73	
CV			3-21
Softball	16.20	1.79	
Rowing	11.33	3.22	
Soccer	14.00	3.25	
Basketball	15.40	4.93	
SP			3-21
Softball	13.80	3.49	
Rowing	6.67	3.06	
Soccer	11.00	3.51	
Basketball	12.60	3.98	

Note. Cohesion was assessed through individual subscale scores from the GEQ (Group Environment Questionnaire): ATG-T (Attractions to Group-Task), ATG-S (Attractions to Group-Social), GI-T (Group Integration-Task), GI-S (Group Integration-Social) and OCB (Organizational Citizenship Behavior): HB (Helping Behavior), CV (Civic Virtue), SP (Sportsmanship). Each subscale had its own range with lower scores representing less cohesiveness.

Table 6

GEQ and OCB Subscale Scores: Organizational Teams

	Total Sample (N = 21)		
Sport	*M*	*SD*	*Range*
ATGT			4-36
Insurance Sales Company #1	28.50	4.85	
Insurance Sales Company #2	26.60	4.84	
ATGS			5-45
Insurance Sales Company #1	24.33	8.21	
Insurance Sales Company #2	26.30	5.79	
GIT			5-45
Insurance Sales Company #1	30.67	7.17	
Insurance Sales Company #2	28.50	5.17	
GIS			4-36
Insurance Sales Company #1	24.33	5.54	
Insurance Sales Company #2	21.80	7.18	
HB			7-42
Insurance Sales Company #1	36.83	6.21	
Insurance Sales Company #2	37.80	4.98	
CV			3-21
Insurance Sales Company #1	15.00	3.69	
Insurance Sales Company #2	16.80	2.35	
SP			3-21
Insurance Sales Company #1	13.17	4.75	
Insurance Sales Company #2	15.40	4.52	

Note. Cohesion was assessed through individual subscale scores from the GEQ (Group Environment Questionnaire): ATG-T (Attractions to Group-Task), ATG-S (Attractions to Group-Social), GI-T (Group Integration-Task), GI-S (Group Integration-Social) and OCB (Organizational Citizenship Behavior): HB (Helping Behavior), CV (Civic Virtue), SP (Sportsmanship). Each subscale had its own range with lower scores representing less cohesiveness.

Table 7

Aggregate Correlation Matrix for GEQ and OCB Subscale Scores: Athletic Teams

Measure	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. ATG-T	_ _						
2. ATG-S	.65	_ _					
3. GI-T	.78	.61	_ _				
4. GI-S	.55	.81*	.70	_ _			
5. HB	.92**	.76	.93**	.78	_ _		
6. CV	.26	.13	.68	.35	.48	_ _	
7. SP	-.02	-.52	.48	-.06	.16	.61	- -

Note. ATG-T= Attractions to Group-Task; ATG-S = Attractions to Group-Social; GI-T = Group Integration-Task; GI-S = Group Integration-Social; HB = Helping Behavior; CV = Civic Virtue; SP = Sportsmanship. * $p < .05$, **p < .01.

List of Figures

Figure 1

A Conceptual Model for Group Cohesiveness

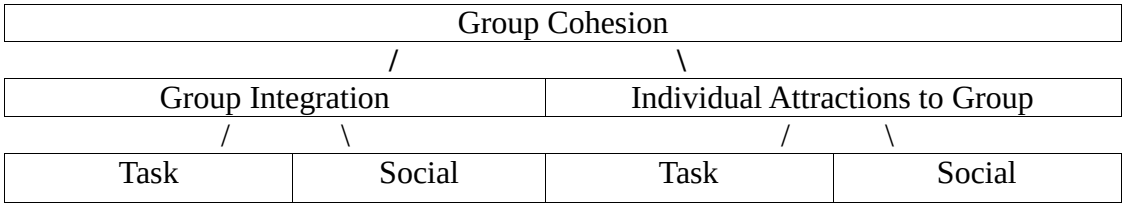


Figure 2

Four Factors Influencing the Development of Cohesion (Eys, et al., 2006)

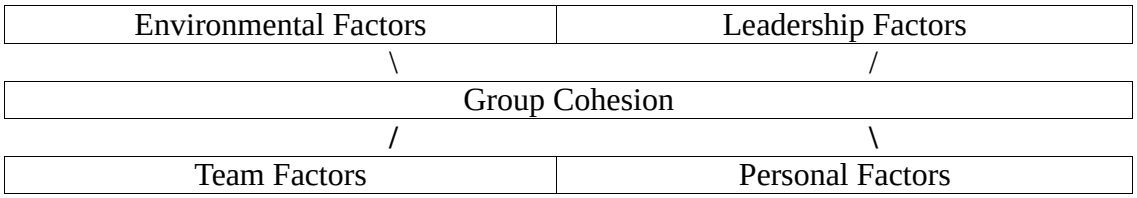


Figure 3

Athletic and Organizational Team Composition

Team Composition	
Athletic Team	Organizational team
-**Staff**: Executives, coaches, athletes	-**Staff**: Executives, department supervisors, employees
-**Goals**: Playing to win, performing effectively on athletic field, execution of specific tasks to contribute to team, working together as a team	-**Goals**: Maximize profits for company, performing effectively on day to day tasks, executing individual delegations, working together as a team
-**Personnel**: Athletes are analyzed by individual statistics measuring contributions to team	-**Personnel**: Team members are analyzed by organizational statistics measuring contributions to team

Abstract

The purpose of this study was to explore the potential relationship between cohesion and performance in athletic and organizational teams. Based upon research in the sport psychology and organizational literature, the conceptual frame work of cohesion (Carron, Hausenblaus, & Eys, 2005), the Group Environment Questionnaire (GEQ) (Carron, Brawley, & Widmeyer, 1998), and the Organizational Citizenship Behavior (OCB) (Podsakoff, Ahearne, & MacKenzie, 1997), were theoretically chosen to be associated with the measurement of performance and cohesion. A total of 37 participants from 8 different teams included student athletes from various universities and an organizational population from the Midwest United States. Results did not find evidence for a significant relationship between team performance and cohesion in either of the teams. Results also did not show the GEQ or OCB to be a significant predictor for team success; however these findings could be attributed to the low number of participants in the study.

Chapter I

Introduction

Cohesion is a core concept of group dynamics that can have positive effects on a group's performance (e.g. winning, achieving desired outcomes; Carron, Colman, Wheeler, & Stevens, 2002; Mullen & Copper, 1994). It has been defined as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). It is an important topic because group formation within today's society is a common occurrence and often a necessity. Teams are formed across various contexts with the goal often being high team cohesion. In both the Sport Psychology and Industrial/Organizational Psychology fields, cohesion can be developed and/or enhanced through the use of various techniques. More recently there has been a similar collective thought within the two disciplines as both fields strive to find ways to create a positive and united team/work environment through the study of cohesion and other team concepts (Fletcher & Wagstaff, 2009). The concept of cohesion is present in both fields as teams exist in athletics and organizations; however, there is a lack of research documenting the better cohesion measure. One way of addressing this gap in the literature is to examine the concept of team cohesion more closely within an athletic and organizational setting. The Group Environment Questionnaire (GEQ) (Carron, Widmeyer, & Brawley, 1985) is typically used to measure cohesion in the athletic setting and the Organizational Citizenship Behavior (OCB) (Posdakoff, Ahearne, & MacKenzie, 1997) has been used to measure cohesion in the organizational setting. By utilizing both in this study, questions about if either is a predictor of team success can be

addressed. The inherent similarity of teams in both settings also allows the possibility to look at cohesion and its potential relationship with performance across contexts. Examination can potentially provide new information about how cohesion may have relationship with organizational performance and promote future research involving more elaborate discussions about this topic.

While groups have many similarities, each group also has its own set of standards and norms. These distinct characteristics give individual meaning and purpose to its members. While there are many types of teams (i.e. organizational, social, or recreational) athletic teams are often favored as a prototype due to the popularity of sport in society and the relative ease for studying quantifiably (Eys, Burke, Carron, & Dennis, 2006). However, the overall nature of teams shows that regardless of the context, cohesion plays an integral part in success of the group and further suggests that there may be similarities in cohesion between the organizational and athletic setting.

Cohesion is an ever-changing team ideal present when members of a group work as a unit to achieve team objectives or goals and satisfy each other's expectations. To further define cohesion, Eys, et al., (2006) identified four factors that contribute to cohesion: multidimensionality, dynamics, purposefulness, and affect. The first, multidimensionality, refers to the concept that teams have their own personal reasons for staying and working together. The second, dynamics, shows cohesion can fluctuate over time. The third, purposefulness, refers to the concept that each group is distinctive from others and has a reason for existence. The fourth, affect, shows that individuals within groups may develop meaningful relationships over time.

In addition to these four characteristics of cohesion, a conceptual model of

cohesion was developed based on Brawley, Carron, and Widmeyer's (1987) research. From their research examining team cohesion in the athletic setting, they developed the GEQ. The measure has since been updated (Carron, Brawley, & Widmeyer, 2002). This landmark instrument breaks cohesion into two categories: group integration and individual attractions. Within these two categories are two sub-units, the task and social aspects of teams. Cohesion in the organizational setting has been shown to be based off organizational citizenship behaviors which are believed to promote the effective functioning of an organization (Organ, 1988). These behaviors include helping behavior, sportsmanship, and civic virtue and are not explicitly recognized by the formal organizational reward system. The OCB measure was developed by Posdakoff, Ahearne, and Mackenzie (1997) using Organ's organizational citizenship behaviors as the three subscales as a reflection of a team's cohesion and effectiveness.

Environmental, personal, leadership, and team factors are outlined as ingredients needed for developing cohesion. The more cohesive a unit, the more coordinated its efforts are to achieve a common goal and the better the ways the team is able to function. Building this cohesion is a challenging, yet rewarding task. From an organizational perspective, there has been a shift within the last decade to move to a more empowered team instead of the traditional supervisor-subordinate team style (Weinberg, 2009). However, the leader is still most important because of his or her leadership style. Instead of simply giving orders or delegating tasks, one does so with an open communication style (Avolio, 2007). This flexibility in leadership styles, empowering each member to contribute ideas, sensitivity to potential dissenting views, and accounting for responsibilities are all imperative traits the leader must have, whether it is a coach or a

supervisor.

Building cohesion can be a daunting task but should be approached openly by the leader as a vehicle to encourage development. Through a participatory style with open communication, goals and roles can be clearly set and defined, regardless of the context (Gerber, 1998; Jowett & Chaundy, 2004). Coach-athlete and leader-team member relationship factors have been shown to be an important correlate of cohesion in both sport and organizations, respectively (Jowett & Chaundy, 2004). Aiding in this construction are sport psychology consultants, (SPC) who can effectively assist in the development of team cohesion (Senecal, Loughead, & Bloom, 2008). One strategy used to develop cohesion has been a process called team building which involves the use of a conceptual model of the factors believed to enhance group cohesiveness (Carron & Spink, 1993). This model includes “inputs” of team structure (i.e. team norms and leadership) and team environment (i.e. proximity of members and distinctiveness of group from others) which are assumed to influence the “throughputs” or group processes (i.e. team goals). This in turn influences the “output” which is operationalized as group cohesion. SPC can also use team-building interventions that focus on other team-building factors believed to enhance team cohesion such as setting goals as a team and using an interpersonal approach to increase awareness on how personal and team values affect cohesion (Veach & May, 2005). Individual values and team norms are two more important leadership factors contributing to cohesion development. These values guide members' behavior (Crace & Hardy, 1997) and team norms reflect the behavior standards set by the team (Carron & Hausenblaus, 1998).

One of the main benefits of establishing cohesion for organizations is potentially

improved performance. In the organizational setting this cohesion-performance relationship has not been examined extensively and support of a similar relationship (organizational citizenship behaviors and team performance) comes from three studies (Karambayya, 1989; Posdakoff & MacKenzie, 1994; Posdakoff, et al., 1997). However, the cohesion-performance relationship has been studied extensively in athletics as recent sport psychology literature suggests that the overall cohesion-performance relationship is positive regardless of sport type and experience level (Carron, Bray, & Eys, 2002; Carron, et al.,, 2002; Mullen & Copper, 1994). More specifically, both task and social constructs as they relate to cohesion are important and implications can be made in support of SPC involvement (Jowett & Chaundy, 2004). Strengthening team cohesion can be achieved using various techniques (i.e. goal setting, use of open communication among members) but problems may arise along the path of development. However, there are some strategies that can be utilized to work past these barriers if they are effectively implemented. Containment or transformation of anxiety/negative feelings into positive motivation (Thomas & Hynes, 2007) and the management of group conflicts (Hinshelwood, 1991) are two common techniques used by team leaders to eliminate group problems that threaten cohesion. Due to the nature of individuals to pass off their problems to someone else or on the team itself, effective leaders must be able to handle these situations and act accordingly (Stokes, 1994). As Weinberg (2009) discussed, effective leadership within organizations has been shown to lead to successful conflict management and stronger cohesion. This management of conflict and cohesion development is closely related in the organizational setting and the athletic setting.

Emerging parallels between these two fields are a result of athletic teams' strives

to maximize performance output and a realization that organizational techniques are successful when applied to sport (de Bosscher, Bingham, Shibli, van Bottenburg, & De Knop, 2008). There has been a recent focus on the social influences of cohesion over task influences due to increasing trends by athletes to seek other competitive advantages over opponents (Fletcher & Wagstaff, 2009). There is a necessity for a systematic approach of studying organizational group techniques that contribute to team success in sport. This has resulted in research that shows the issues athletes have experienced have been addressed through the use of SPC-guided foci on the management of organizational-related issues (Gould, Greenleaf, Chung, & Guinan, 2002; Greenleaf, Gould, & Dieffenbach, 2001). In this research, in addition to cohesion, important variables influencing performance were the quality of the coach-athlete relationship and the organizational factors of the team itself such as the use of support services and the coach's ability to deal with crises. Research has also shown that there are growing positive perceptions in the sport community regarding organizational effectiveness which includes certain leadership characteristics, communication skills and group cohesion factors (Weinberg & McDermott, 2002). Prior research suggests that the organizational environment has the potential to significantly impact an individual's performance success and well-being if this environment promotes a supportive network between teammates, team unity and leadership roles (Fletcher & Wagstaff, 2009).

Statement of the Problem

Recent literature has shown a positive relationship between cohesion and performance in athletic teams (Fletcher & Wagstaff, 2009; Carron, Coleman, Wheeler, & Stevens, 2002; Carron, Bray, & Eys, 2002; Mullen & Copper, 1994). However, there is

gap in research attempting to examine the nature of the cohesion-performance relationship in organizational teams. Research relating organizational citizenship behaviors to team performance has been conducted, (Posdakoff & MacKenzie, 1994, Posdakoff, et al., 1997) however a direct cohesion-performance relationship has not been addressed. This could be attributed to a general hesitance to incorporate cohesion-building techniques in the organizational setting and/or a lack of knowledge about the similarities of cohesion characteristics in the athletic and organizational setting. There is also a lack of literature examining the GEQ and the OCB as predictors for athletic and organizational performance. The GEQ has been used extensively as a cohesion measure in the athletic setting; the OCB has been shown to be significantly related to cohesion (Aoyagi, Cox, & McGuire, 2008) and also as a valid measure of team effectiveness in sport. Cohesion is not a context-specific concept, and because of previous literature showing a cohesion-performance relationship, the utilization of both measures in both contexts can potentially demonstrate its use as a predictor of success through multiple linear regression analysis.

Purposes of Study

The purposes of this study were two-fold. The first purpose was to provide support for a cohesion-performance relationship in the organizational setting and the athletic setting. This relationship has been shown extensively in the athletic setting but not in the organizational setting; the similar nature of team composition in both settings and generalizability of team cohesion across contexts allows this avenue of exploration. Cohesion is a concept that can be developed and demonstrated by all teams (Eys, et al., 2006) and its application should not be restricted boundaries such as context (i.e. athletic

or organizational). The second purpose was to examine if either cohesional measure is a significant predictor of team performance. Literature has shown a positive cohesion-performance relationship in the athletic setting; thus, an examination of cohesional subscale scores from the GEQ and OCB potentially predicting team performance was explored through multiple regression analysis. Additionally, the present investigation showed the potential applicability of the OCB (a measure primarily used in Industrial/Organizational Psychology) as a construct in measuring athletic behaviors that may lead to a more cohesive athletic team. Perceptions about team cohesion may suggest the transferability of OCB cohesion characteristics across contexts thus providing evidence for promotion of these properties in both team settings.

For the athletic setting, team cohesion scores were correlated with win-loss percentage. For the organizational setting, team cohesion scores were correlated with sales growth, also known as the percentage of change over the previous year's sales. For purposes of this study, only a specific time period (i.e. 6 months of the year) will be used. These were used as benchmarks for performance to see if high team cohesion had a positive relationship with high performance. This potential relationship was measured through correlation of cohesion scores from GEQ and OCB with the objective performance measures from both settings.

Research Hypotheses

1. There will be a significant, positive relationship between cohesion scores and performance (determined by sales growth) in the organizational setting as shown through Pearson correlations.

2. There will be a significant positive relationship between cohesion and performance (measured by win-loss percentage) in the athletic setting as shown through Pearson correlations.
3. Multiple linear regression analyses will show cohesion scores to be significant predictors of team success in athletic and organizational teams.

Chapter II

Review of Literature

In this study, the concept of cohesion was examined in two different contexts; the organizational setting (organizational team cohesion) and in the sport setting (athletic team cohesion). Cohesion in both contexts was explored utilizing survey measures and a significant cohesion-performance relationship was expected in both settings. There has been vast research discussing cohesion as it pertains to sport teams, its operational definitions, and its link to sport performance. However, research showing this relationship in the organizational setting is limited. Further, there is a lack of literature discussing the potential use of team cohesion in the organizational context. Through this study, it was hypothesized that there will be a significant positive relationship between cohesion scores from the GEQ and OCB and performance displayed in teams from both settings. It was also hypothesized that multiple linear regression analyses will show cohesion scores (i.e. OCB, GEQ-Task subscale, and GEQ-Social subscale) to significantly predict team success.

Overview. Involvement with and membership in groups is a common occurrence in society as people join together to accomplish tasks more efficiently, discuss shared interests and/or gain social acceptance. The interactions individuals have within groups result in a reciprocal exchange of influence between the individual and the other people in the group (Eys,et al., 2006)). Each group has distinct characteristics separating it from other groups while also sharing common characteristics with other groups such as togetherness, group pride and sense of unity (Carron & Hausenblas, 1998). Ultimately these characteristics within each group give meaning to the participants and define the

group as a whole. One group commonly formed and studied are athletic teams in both coactive sports (i.e. golf, bowling) and interactive sports (i.e. basketball, football) for numerous reasons. These teams involve members that have a sense of motivation to participate while also remaining selective; members of athletic teams also spend significant time together while working collaboratively to accomplish a number of goals determined by themselves and their coaches. Coupled with these characteristics, the athletic team's performance can be quantified easily through performance measures (i.e. wins/losses, records, etc.) and thus research on athletic teams has been substantial.

While there are numerous components that are deemed necessary for a team to be successful, cohesion is one that is generally accepted as important (Carron, Bray, & Eys, 2002; Carron, et al. 2002; Patterson, Carron, & Loughead, 2005, Widmeyer, et al., 1985). Cohesion can be operationally defined as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs" (Carron, Brawley, & Widmeyer, 1998, p. 213). Cohesion is dynamic in that it is always in flux and can increase or decrease over time or through different sport situations. Cohesion can best be described as a tendency for the group members to band together in any situation for the benefit of the team and their individual needs, which are tied into the team itself. If a team has a sense of cohesiveness between members, it can be expected that the group will stay together and achieve team success (Carron, Bray, & Eys, 2002).

Components of Cohesion. To further elaborate on the characteristics integral to cohesive units, there are four key components that describe cohesion (Eys, et al., 2006). First, cohesion is multidimensional in that there are many reasons why teams stay

together such as striving to reach common goals or to improve relationships among team members. The team is united on a social or task-oriented front and these reasons can range from intrinsic or extrinsic motivational factors, pressure from significant others, peers, talent, or sense of belongingness. Second, teams are dynamic which results in improvements or declines in cohesion over a period of time. Third, all groups with cohesion have a purpose for existence. These can vary as well, from networking and building friendships to achievement of a goal or expectation. Fourth, cohesion has an affective dimension meaning that interpersonal relationships between group members may develop over time.

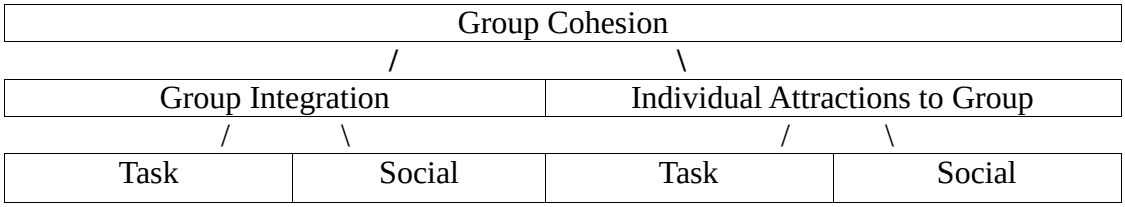
One model that is widely accepted in the literature is Brawley, Carron & Widmeyer's (1987), conceptual model for group cohesiveness (see Figure 1). In this model, group cohesion has two categories: group integration, which represents the member's individual perceptions of the group as a whole, and individual attractions to the group, which represents personal attractions/reasons to the group. These two categories regarding unity within the group are split further into the task and social aspects of the group and thus cohesion has four facets: individual attractions to the group-task (i.e. attractions to athletic team due to style of play or attraction to organizational team due to its need for critical thinkers), individual attractions to the group-social (i.e. desire to be a part of the team due to friends also on team), group integration-task (i.e. feeling that team is united in trying to win in athletics or reach goal in organizations) and group integration-social (i.e. feeling the team should spend time with each other outside of the athletic field or organizational setting).

Another widely accepted concept related to cohesion is organizational citizenship

behavior, which was developed in by Organ (1988) and has been shown to have a consistent, positive relationship with cohesion (Posdakoff, Mackenzie, Paine, & Bachrach, 2000). Defined originally as a class of behaviors that influenced sales managers' performance evaluations, the concept has been evolved into an inventory consisting of three subscales: helping behavior (i.e. providing assistance to coworkers to solve or avoid work-related problems), sportsmanship, (i.e. willingness to tolerate difficult organizational situations without complaint), and civic virtue (i.e. member's involvement and interest of the company (Posdakoff, et al., 1994). These subscales have been statistically shown to be related to cohesion (Aoyagi, et al., 2008) and one of this study's aims was to determine if the GEQ or the OCB significantly predicted high team performance.

Figure 1

A Conceptual Model for Group Cohesiveness



Developing Cohesion.

Factors Contributing to Cohesion. As a result of research showing that team cohesion is both present and important for groups to be successful, there has been extensive research regarding methods used to build and/or develop cohesion (Weinberg, 2009; Eys, et al., 2006; Veach & May, 2005). Carron et al. (2005) have developed a framework for addressing the main correlates of cohesion in sports teams (see Figure 2). This framework identifies a number of factors that affect the presence and strength of

cohesiveness on teams. First, *environmental* factors are important; individuals who are close physically have a higher tendency to bond together not only because of proximity but because this close contact promotes interaction-sharing opportunities and improves communication amongst members. Generally there is a common place for groups to meet that is conveniently located for all team members. Another environmental factor is distinctiveness which refers to how separate group members are from non-group members. As the group becomes more distinct and set apart from outside members through initiation rites or uniforms, a sense of unity grows.

Second, *personal factors* have been shown to be associated with satisfaction and cohesion. Satisfaction from competition and similarity among group members (Widmeyer & Williams, 1991), interactions with teammates (Carron & Hausenblaus, 1998), and approval from coaches (Veach & May, 2005) are all elements that affect cohesion. The similarity of group members incorporates members' attitudes, goals and abilities all being akin to one another. If the group is able to work towards the same common goal using each member's distinct abilities, cohesion will be fostered as a result from this similarity.

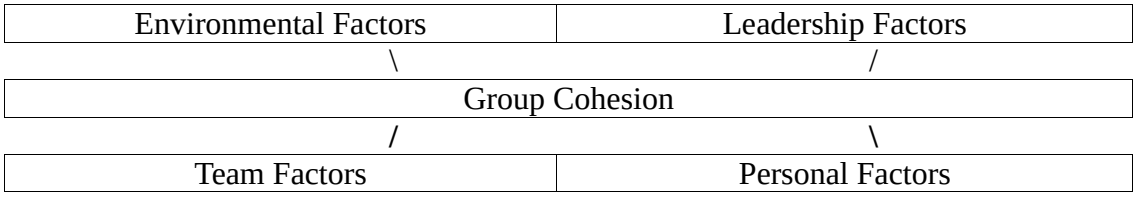
The third factor, *leadership*, includes relationships with the coach and teammates and shapes the dynamics of team behaviors and attitudes (Eys, et al., 2006; Veach & May, 2005). A team is more than just a group; it is a coordinated collection of individuals that cooperate to achieve a common goal without regard to individual achievement. While individual efforts are necessary for teamwork, they are not enough for building cohesion. Whether the member is a part of an individual or team sport, part of an organization or a social club, building cohesion is of critical importance for smooth functioning and

optimal performance of that group.

The fourth factor, *team factors,* influences team characteristics as the group develops. The emergence of these factors, such as norms and roles, are essential to cohesion development (Eys, et al., 2006). Roles are expected behaviors from individuals within the group and can be formal or informal; formal roles are explicitly set by the group or leader and informal roles form through the interactions between group members (i.e. team prankster, enforcer). Acceptance of these roles along with role conflict may have an effect on team cohesion. Norms are important team factors because they are the standard of behavior expected of group members. Awareness of these behavioral standards as well as what is and is not acceptable is also important to cohesion development. More specifically, the norm of productivity has been heavily researched and has been found to influence group performance.

Figure 2

Four Factors Influencing the Development of Cohesion (Eys, et al., 2006)



Team Leaders' Impact on Cohesion. One way of developing team cohesion is focusing on the role of team leaders and their effect on maximizing performance (Weinberg, 2009). From an organizational perspective, Weinberg explains that the key to team success is in the team leaders themselves who need to be flexible in their management styles and rely on knowledge from their team members to be successful. Due to the evolution of the workplace and technology, more organizations

and companies are incorporating “empowered teams” to replace the traditional “boss-subordinate” structure (Avolio, 2007). For example, instead of a supervisor telling his workers to complete a task, the team figures out the best way to complete that task with an authoritative figure (the supervisor) taking on the responsibility that the task is completed. Under these evolving work settings, team leaders must be aware of and sensitive to their group members for the team to become effective. In addition to the leader's responsibilities, the team members also need to abandon the traditional rationale that they will just follow orders; instead they must reshape their mindset to one that is actively involved in the team's work which will result in better production and increase their motivation (Weinberg, 2009).

Further elaborating on Weinberg's statements, team leaders need to be proactive by implementing and introducing concepts the team will find stimulating (Eys, et al., 2006). Organizational research has shown that there are common characteristics of successful teams (Katzenback & Smith, 1992; Levi & Slem, 1995) and these common themes include clearly defined goals, focused leadership, and accountability for performance outcomes (Eys, et al., 2006), all of which can be used as building blocks for cohesion development. Team goals provide direction and motivation for team members as well as standards for evaluation. The leadership style needs to include group members in the decision-making process which often can be achieved through the use of correct communication methods. It is the team leader's decision to choose the best way to promote open communication channels as each team member is unique. Cohesion is built through this participatory style when leadership is open to suggestions, voices can be heard, both goals and roles are clearly defined, and group distinctiveness is created.

When the desired outcomes occur, the foundation for cohesion is established when teammates learn to respect and collaborate with one another. While these concepts are discussed from an organizational view, this suggests that there are similarities in cohesion concepts between the Industrial/Organizational (I/O) Psychology field and the Sport Psychology field as teams exist in both fields.

Importance of Leadership Factors on Cohesion. Effective leadership is important in the development of cohesion. More specifically, Gerber (1998) demonstrates the impact leadership factors have on cohesion through his social research with groups and discusses the challenges involved in applying group work concepts with athletic teams. He states that there is limited literature about athletic teams utilizing social work concepts and techniques for building effective teams. Consistent with the purpose of this study, he postulates that group work methodology from the social work field can be employed and effectively used in the athletic-team domain; He also states that winning is not the only factor for team cohesion development.

Leadership factors stem from coaches and have a direct impact on their athletes/work members. For example, through implementation of multiple self-report measures such as the GEQ, the Leadership Scale for Sports (LSS; Cheladurai & Saleh, 1978), and the Coach-Athlete Relationship Questionnaire (CART-Q; Jowett, 2002), the perceptions of team cohesion, coach leadership and the nature of these relationships were measured (Jowett & Chaundy, 2004). The athletes involved represented rugby, field hockey, soccer, basketball, netball, lacrosse, water polo and American football. The findings suggest time is better spent when coaches focus more on building task cohesion relative to social cohesion. A task-oriented focus on instruction, democratic behavior, and

feedback can potentially enhance levels of task cohesion. Coach-athlete relationship factors have been shown to be an important correlate of cohesion in the context of sports teams. A sport team that has positive coach-athlete relationships enjoys positive relational properties and high levels of cohesion in contrast to the opposite. Problems arise when this relationship turns into a power-struggle or when athletes believe their coaches' feelings of commitment to them personally is skewed. Direct perceptions ("I trust my coach/athlete") and meta-perceptions ("My coach/athlete trusts me") as Jowett and Chaundy explain, are better supported when coaches spend more time on building task cohesion over social cohesion.

Senecal, Loughead, and Bloom (2008) also showed the effect of positive leadership factors on cohesion. Through the use of the GEQ and a team goal-setting intervention, cohesion throughout the course of the season for eight different female high school basketball teams was examined. To measure cohesion, pretest-posttest experimental study design was used. The experimental group received a team goal-setting intervention from a sport psychology consultant (SPC) and the control group did not receive any intervention. The GEQ was administered to the both groups at the beginning and end of the season. It was shown that team-building interventions can be designed to enhance cohesion through the use of the coach as a facilitator between the team and the SPC. Athletes in the team goal-setting group held significantly higher perceptions of team cohesion over the control group. The intervention of the SPC was significant in this study and shows their potential effectiveness as they can assist the group in many ways. Implementation of goal-setting interventions, identifying stressors, and evaluations of cohesion-building techniques are examples of the helpful services they

offer.

Individual Values and Cohesion. Individual values also influence team cohesion. Values are defined as core beliefs guiding behavior and motivation that serve as standards for evaluating behavior (Crace & Hardy, 1997). Their discussion states that the basis for a cohesive unit hinges upon the quality of team members; one can have the best performing members or have members always being productive individually but may not have a level of cohesion that will result in the group being productive. An intervention model which sensitizes teammates to each individual's personal characteristics and a values-based approach focusing mutual understanding and respect is suggested as a way of producing optimal cohesion.

Team norms reflect the behavior standards expected of group members (Carron & Hausenblaus, 1998). This suggests that higher group cohesiveness leads to a greater amount of pressure brought upon the member to conform to group norms. For example, if the group norm is to work hard to achieve group goals, members will be pressured to behave appropriately. These team norms also play an important role in the cohesion-performance relationship.

Conflicts with team cohesion. It has been shown that cohesion among teams is an achievable and desired goal, can be developed through various concepts and has a significant link to improved performance (Eys, et al., 2006; Veach & May, 2005; Carron et al., 2002). However, problems naturally arise along this development path and the team leaders and members must be aware of these potential pitfalls as they can prove to be damaging to cohesion.

Containment. Containment is a concept a team leader or member can

implement when the group has problems or anxiety amongst itself (Thomas & Hynes, 2007). If a leader can effectively "absorb" the anxiety of its members by providing firm guidelines of action and reflect a presence of trust and authority, these potentially negative feelings can be transformed into a drive to not only work past group problems but also use that energy to become more productive. Petty arguments along the development process may typically occur when role titles are not clearly defined and members place blame on one another when discrepancies take place. The main function of containment is to take the onus of the problem away from the members because of their tendency to "give away" their problems to someone (i.e. another teammate) or something (i.e. the organization itself) (Stokes, 1994). It is the leader's responsibility in certain situations to take charge and demonstrate the skills that landed them that authoritative role. Bion (1996) suggests the leader of any group is the liaison between members for the transfer of feelings or ideas and is viewed as being a knowledgeable person.

Anti-groups (i.e. smaller groups within which challenge thoughts or actions of the overall group) and aggression can also potentially undermine cohesion in the team building process. Anti-groups may seem innocuous at first but the formation of smaller groups or cliques within the team can be potentially damaging to cohesion if the objectives of the team are not clearly defined. These groups mainly involve, but are not limited to, destructive comments about other teammates or the team itself that are discussed among a smaller group (Wright, 1989). Aggression occurs in groups when members have a problem or resistance to change by the group as a whole. The individual preferences of members can become disruptive to the current group because certain views

may be incompatible with each other. If managers can assist these aggressive individuals within the group and deflect their focus to managing conflict by shifting opposing ideas into constructive criticism of ideas, communication will improve and those members will still feel cohesive with the team even though there are disagreements (Miller, 1993).

Reparation. Reparation is another method with containment that can be used to handle conflicts within teams. Simply focusing the management of group impulses rather than defending against them is the foundation of this technique. It works by focusing on the external object of conflict (the team member's actions) and repairing the internal object (the team member's emotions/beliefs) (Hinshelwood, 1991). Effective leadership within organizations has been shown to be defined through active leadership where the nature of the environment is kept at a receptive level and communication lanes are always kept open and facilitative. The combination of these leadership qualities along with techniques of reparation and containment lead to successful conflict management and cohesion problems are kept at a minimum. The leaders' understanding of these group problems are shown to improve cohesion in organizational settings but seem to be transferable to other team contexts, particularly athletics. Containment and reparation mirror the channeling of energy for productive use on the athletic competitive field and the management of emotions coaches deal with everyday. This research demonstrates another potential way the organizational and athletic contexts are similar with regard to cohesion.

The Relationship between Cohesion and Team Performance.

Measuring Cohesion and Performance. Cohesion has been examined extensively in team dynamic studies and one of the most commonly used inventories

assessing cohesion has been the GEQ. It consists of four different subscales which measure team cohesion (i.e. how well members of a team relate and work together as a unit): Individual Attractions to the Group-Task (ATG-T), Individual Attractions to the Group-Social (ATG-S), Group Integration-Task (GI-T) and Group Integration-Social (GI-S). These four subscales have been shown to be both valid and reliable with Cronbach's alpha coefficient values for each subscale being 0.70 (GI-T), 0.76 (GI-S), 0.64 (ATG-S), and 0.75 (ATG-T) (Carron, Brawley, Widmeyer, 1998). Another inventory shown to assess to cohesion is the OCB. The revised OCB (Posdakoff, et al., 1997) measures the presence or absence of cohesion within an organizational setting and includes three subscales: helping behavior, sportsmanship and civic virtue. These three subscales have been shown to be reliable (Cronbach's alpha coefficients ranging from 0.75 to 0.93 for each of the three subscales).

Performance was measured differently across settings but remained objective. For athletic teams, win-loss percentage was used as an objective performance measure. In organizational teams, sales growth, which is the percentage of change from the previous year's sales, was used as the performance measure. For purposes of this study, in season win-loss percentage until the end of the season, and sales growth until the end of the quarter were measured. Research has implied the positive impact of organizational citizenship behaviors on performance in a variety of sales contexts such as insurance, petrochemical and pharmaceutical sales (Posdakoff & MacKenzie, 1994), thus providing evidence for utilizing the sales industry in this study. Each sales context may have a variance of sales goals based upon reaching a quantifiable mark such as hitting a "target number" of a job-specific task. However, the use of sales growth as a team performance

measure provides an objective means of examination in the organizational setting.

Examining the Cohesion and Performance Research. Early research examining the relationship between cohesiveness and team performance was inconclusive with some studies showing that high team cohesion and performance are not related (Martens & Peterson, 1971) or have been inconclusive (Gill, 1986; Carron, 1980). However, recent research within the past few decades has shed new and revealing light on the positive relationship between cohesion and performance in both contexts.

In athletics, a meta-analysis on the cohesion-performance question was conducted by Mullen and Copper (1994) using 49 different studies (n = 3766) from different disciplines of psychology (i.e. sport, social, military, industrial). This analysis showed that there is a small (Z_{Fisher} = 0.25, ES = .25), positive (Z = 8.49, p =1.51E-16) overall cohesion-performance relationship. The research also showed other important and pertinent concepts behind this relationship: sport type (i.e. interactive vs. coactive sports) was not a significant moderator; a significant difference of effects (Z = 4.47, p = 3.94E-6) between real group sport teams (i.e. recognized and organized teams) and artificial group sport teams (i.e. teams not officially recognized as a team) show real group teams have the strongest cohesion-performance effects; the relationship is strong only when cohesion is operationally defined as commitment to a task (ES = .25, p = 1.74E-6) but not when operationally defined as interpersonal attraction (ES = -. 13, p <.01) or group pride (ES = -.08, p <.06).

Following up on Mullen and Copper's meta-analytic review, Carron, Bray, & Eys , (2002) examined the relationship between cohesion and team success in elite basketball and soccer teams (n = 294). Perceptions of cohesion were operationally defined in

terms of the four subscales involved in the (GEQ) (Carron, et al., 1998) and consistency among team members' perceptions of cohesion was taken into account. The study yielded evidence for a relationship between high team cohesion and performance by showing a significant relationship between cohesion and sport team success for cohesiveness shown through the Group Integration-Task (ES = 1.29, $p < .001$) and Individual Attractions to Group-Task (ES = 1.71, $p < .001$). However, it should be noted that focus was put only on task-cohesion and not social-cohesion as it relates to improved performance. This is important because Jowett and Chaundy (2004) suggest more time should be spent on building task cohesion over social cohesion in order to improve performance. The study also explained that the aggregation of individual team scores to produce a single score for measuring overall team cohesion does not skew the data.

Following up on this study, Carron, Colman, Wheeler and Stevens (2002) conducted another meta-analysis to further examine the cohesion-performance relationship and incorporate updated literature on the subject. A secondary purpose of their study was to assess the number of potential moderator variables which could act as cofactors influencing the cohesion-performance relationship. The operational definition used in this study included both task and social orientations to group. Overall, a significant relationship (ES = .69, $p < .02$) was found between cohesion and performance in sport. Contrary to Jowett and Chaundy (2004), social cohesion showed a significantly stronger relationship with performance (ES = .70, $p = .06$) than task cohesion (ES = .61, $p = .05$) and numerous factors were not found to be significant moderator variables (i.e. sport type (coactive (ES = .77, $p = .05$) vs. interactive (ES = .66, $p = .04$), skill/experience of the competitors (ES = .19, $p = .05$ to ES = .81, $p = .06$) and measure

of the performance (self reported (ES = .58, p = .04) vs. behavior (ES = .69, p = .03). This further suggests there a cohesion-performance relationship and supports earlier research showing that both task and social constructs of cohesion exhibit a relationship to performance in sport. The implications of these findings are important in that they bolster notion to build cohesion among a variety of sport types and team contexts (i.e. organizational, athletic).

In the organizational setting, few studies have examined cohesion and organizational team performance, although organizational citizenship behaviors (which have recently been linked to cohesion, (Aoyagi et al., 2008)) have examined for a relationship with team performance. Karambayya's (1989) research included 18 work groups comprised from 12 different organizations and examined the relationships between work performance and citizenship behaviors exhibited. It was found that team members who were rated as having high performance levels were generally found to display higher levels of citizenship behaviors than members who were rated as having low performance levels. However, a severe limitation of the study was that team performance measures were subjective and not objective.

Posdakoff and MacKenzie's (1994) study included employees (n = 839) from a large insurance sales company and examined the relationships between organizational citizenship behaviors and organizational performance through two studies. It was hypothesized that these behaviors would have a positive impact on organizational performance based off suggestions (Organ, 1988) that such behaviors facilitate organizational efficiency and success. Thus, it was expected for work teams displaying higher levels of organizational citizenship behaviors to have higher levels of

performance. Team performance was measured through a unit performance index obtained from company records that included a weighted average of four measures: amount of new business brought in by employees, dollar amount the employee exceeded from the previous year's median agent production level, average number of policies sold per employee weeks worked, and the total number of policies sold by the employee.

Citizenship behaviors were measured individually within each team by the unit's manager then aggregated to create a team score. Results showed the citizenship behaviors accounted for almost a fifth of variance in team performance ($R^2 = .17$) and that civic virtue, (standardized $\gamma_{1,2} = .48$, $p < .05$) and sportsmanship (standardized $\gamma_{1,3} = .30$, $p < .05$) had significant positive effects on team performance through Confirmatory Factor Analysis (CFA). While helping behavior was shown to have a statistically negative impact on team performance (standardized $\gamma_{1,1} = -.49$, $p < .05$), organizational performance was shown to have a significant, positive relationship with two organizational citizenship behaviors, civic virtue and sportsmanship.

Following up on these findings was a study by Posdakoff, Ahearne, and MacKenzie (1997) which attempted to improve understanding the effects of organizational citizenship behaviors on organizational team performance due to limitations from the previous studies. The main interest of the study was to examine relationships between citizenship behaviors and organizational team performance. Participants ($n = 218$) from 40 different work crews within the same paper mill producing plant were recruited and unlike most OCB research, the citizenship behaviors were acquired from the members themselves rather than from their supervisors. Work performance was assessed by quantity (i.e. amount of total paper produced as a

percentage of total machine capacity for a year) and quality (i.e. percentage of paper produced that was either rejected by company's control personnel or by the customer). Results showed sportsmanship (standardized $\beta = .39$ $p < .05$) and helping behavior (standardized $\beta = .40$ $p < .05$) had significant positive relationships with the quantity of output and accounted for about a quarter of the variance ($R^2 = .26$). Civic virtue (standardized $\beta = -.32$ $p < .05$) was not found to be related to the quantity of output and none of the three subscales were significantly related to quality of output.

While results differ between Posdakoff's studies due to differences in compensation systems, amount of team work involved, and potential biases in rating citizenship behaviors, the data provides general support that citizenship behaviors are related to organizational team performance (Posdakoff, et al., 1997). Both studies, however, provide empirical evidence that organizational citizenship behaviors are related to organizational performance. With recent evidence (Aoyagi, et al., 2008; Posdakoff, et al., 2000) showing cohesion is statistically and consistently related to organizational citizenship behaviors, the cohesion-performance relationship in the organizational setting can be explored further using the OCB as a measure for team cohesion as well as the GEQ.

Influence of Team Norms on the Cohesion-Performance Relationship. Team norms were previously discussed as influencing the cohesion-performance relationship. Research on team norms in the organizational setting states that a high norm for productivity combined with high cohesiveness leads to performance improvements (Berkowitz, 1954). Gammage, Carron, and Estabrooks (2001) proposed that when cohesion and norms about productivity were high, optimal performance was reached and

high cohesion and low productivity norms led to the worst performance. While this study provided some insight on the influences of team norms on the cohesion-performance relationship, it was hypothetical. The undergraduate participants were not truly a part of an athletic team and were asked to respond to hypothetical scenarios athletes are associated with in the off-season (i.e. training or practice).

Similarly, Patterson, Carron, and Loughead (2005) sought to examine team norms and its influence on the cohesion-performance relationship for an athletic team specifically. Male and female athletes (n = 298) from interactive and coactive sport teams completed questionnaires which measured team norms (Team Norm Questionnaire; (Carron, Prapavessis, & Estabrooks, 1999)), team cohesion (GEQ; (Carron, Brawley, Widmeyer, 2002)) and self-reported performance (Percieved Exertion Scale; (Borg, 1971)). Task relevant norms for different behaviors and cohesion were operationally defined through the four subscales in the GEQ: Individual Attractions to the Group-Task (ATG-T), Individual Attractions to the Group-Social (ATG-S), Group Integration-Task (GI-T), and Group Integration-Social (GI-S) and the four subscale norms: Norms for competitors, practices, social situations, and off-season. It was found that athletes on teams with stronger social norms and higher social cohesion reported the best performance suggesting that the social aspect of cohesion supports better performance.

Examining Cohesion across the Sport and Business World. In sport, elite athletes and coaches have always been in search of research that shows the characteristics of successful athlete development. Cohesion has been found to be one of these characteristics and research about the development of team cohesion is in demand (de

Bosscher et al., 2008). There has been literature supporting Patterson et al.'s (2005) findings that athletes on teams perceived to have higher team social cohesion and stronger norms for social interactions reported the best performance (Beauchamp & Eys, 2007; Carron, Hausenblaus & Eys, 2005; Jowett & Lavallee, 2007). Based on these findings, SPC's are focusing on social influences of groups/teams due to an increasing number of athletes who want to discuss the management of organizational related issues within their sport (Fletcher & Wagstaff, 2009).

Emergence of Organizational Psychology in Sport. There are many reasons for the emergence of organizational psychology in the sport, with the main being the "necessity for a systematic approach to sport development" (p. 428). Research by Greenleaf, Gould, and Dieffenbach (2001) and Gould, Greenleaf, Chung & Guinan (2002) has shown that the management of organizational issues is a significant distinguishing factor for success at the Olympic level. Teams that failed to execute training programs due to poor planning and cohesion faced problems (Gould et al., 2002) and major variables shown to have a positive influence on performance were support services and quality coach-athlete relationships (Greenleaf et al., 2002) which are both organizational factors necessary for building team cohesion.

Weinberg and McDermott's (2002) research involving sport and business leaders showed positive perceptions about organizational effectiveness and group cohesion. They interviewed twenty sport and business leaders about their perceptions involving group dynamics (i.e. leadership qualities, group cohesion, and communication) and results revealed an agreement among leaders on factors relating to organizational success. Flexibility of leadership styles across different groups, listening, empathy and trust were

among these factors. The main group cohesion factors involved role acceptance, mutual respect amongst each other, and a shared vision. The findings demonstrate the similarities between successful sport and business organizations but also show the importance of leadership in both contexts which is an important factor for desired performance outcomes. Aoyagi's et al., (2008) study about organizational citizenship behavior (OCB) is another example of sport psychology "importing" knowledge from the organizational psychology field and applying it to athletes. The aim of the study was to introduce the OCB in sport psychology due to its associations with leadership and cohesion, both of which are important factors in sport. Measuring these behaviors in sport using the OCB could potentially provide information that may lead to more effective teams. Structural equation modeling (SEM) with confirmatory factor analysis (CFA) was used to link the factors of leadership, cohesion, and satisfaction, creating a structural model which addressed the hypothesis that the three would be statistically related. OCB is defined as behavior that promotes the effective performance of the organization without formal recognition and has five categories of citizenship behaviors: helping, conscientiousness, sportsmanship, courtesy and civic virtue (Organ, 1988). A number of male and female student-athletes (n = 193) from a Division I and Division III university represented interactive and coactive sports. The use of four measures, the OCB (Posdakoff, et al., 1997), Athlete Satisfaction Questionnaire (ASQ; Rimer & Chelladuraik 1998), the GEQ and the LSS were used to measure team cohesion through the use of each instrument's subscales and their relationship to each other through structural equation modeling. The study yielded a structural model showing strong links between leadership and satisfaction with cohesion. The promotion of citizenship

behaviors (i.e. civic virtue, sportsmanship, and helping) among athletes can develop into an organizational functioning that is more effective because of the relationship of cohesion to the OCB categories. This study provided preliminary evidence for the validity of OCB as a measure of sport team effectiveness.

While it has been shown that there is a relationship between organizational-related issues and the sport team, there has been limited literature addressing the application of these organizational performance-enhancement strategies to athletes (Fletcher & Wagstaff, 2009). This may be due to the lack of respect for the work SPC's do, a lack of knowledge of athletic upper management, and a reluctance of teams to incorporate non-team consultants to discuss organizational-development interventions (Fletcher & Wagstaff, 2009). From the sport psychology side, there is a bias within the sport psychology accreditation programs to focus mainly on psychological skills training and performance enhancement techniques without regard to the logistics for carrying out these techniques in the organization itself.

The skills training programs are of limited use in the organizational setting if the SPC does not focus on organizational factors such as cohesion, on-going feedback analysis of the team. Embracing the team-building techniques from organizational psychology and combining these with the mental skills-training techniques from sport psychology will potentially result in a powerful, effective and highly-cohesive unit with an output of elite performance. Jones (2002) predicted that sport will need to learn a lot from business excellence and this emergence has begun with sport focusing on new organizational topics such as stress, role responsibilities, and performance management. Leadership styles directly impact the effectiveness of a team and team cohesion is a basis

for the team leader to establish his or her expectations and for the team members to put forth their ideas for building a close-knit and productive group.

The Current Study. The development of cohesion is important to the functioning of a team and there are various methods for building it through goal-setting interventions, promoting open communication between the leader and team members, and working together to accomplish team tasks. Reasoning for building cohesion has been supported through a relationship between high team cohesion and performance output. In addition, a potential similarity between the organizational and athletic setting can be explored through examination of team cohesion and performance. There is a gap in the literature on how cohesion relates to organizational performance and this study may help provide a foundation for future studies exploring organizational performance. This study specifically examined this potential cohesion-performance relationship in the organizational and athletic setting through the use of two different questionnaires: the GEQ and the OCB questionnaire and measuring performance through win-loss percentage in athletics and sales growth in organizations. Sales growth was used as the objective measure for organizational performance due to previous research (Siders, George, & Dharwadkar, 2001; Dess & Robinson, Jr., 1984) using the same performance measure and stating its effectiveness in measuring business success.

The logic behind the comparison of an athletic team and organizational team is based off the similarities of each team's composition. Based off the conceptual model of cohesion (Carron & Brawley, 2000), cohesion is influenced by environmental, personal, leadership and team factors. More specifically, a focus on team factors shows high cohesion involves the concepts of collective efficacy, (i.e. every team member is

dedicated to achieving the task and motivation is high) productivity, (i.e. team output or outcome is efficient) and group unity (i.e. each team member feels a sense of belongingness to the group). These three concepts are evident when closely examining the composition of an athletic and an organizational team as seen in Figure 3. Each team member has a specialization. In athletics, quarterbacks, hitters, and pitchers each have individual niches that contribute to the success of the team much like organizational team members have individual responsibilities that must be completed for team success.

Figure 3

Athletic and Organizational Team Composition

Team Composition	
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Athletic Team -**Staff**: Executives, coaches, athletes -**Goals**: Playing to win, performing effectively on athletic field, execution of specific tasks to contribute to team, working together as a team -**Personnel**: Athletes are analyzed by individual statistics measuring contributions to team	Organizational team -**Staff**: Executives, department supervisors, employees -**Goals**: Maximize profits for company, performing effectively on day to day tasks, executing individual delegations, working together as a team -**Personnel**: Team members are analyzed by organizational statistics measuring contributions to team

Cohesion is an important team concept that has been shown to have positive effects on a team's performance. This cohesion-performance relationship was examined in this study. The purposes of this study were twofold: first, to examine athletic and organizational teams through cohesion and to determine if a relationship existed between cohesion and performance in both settings. The second purpose of the study was to determine if the OCB, GEQ-Task subscale, and GEQ-Social subscale, were significant

predictors for athletic or organizational success. It was hypothesized that teams in both settings would show a significant positive relationship between team performance and cohesion as determined through Pearson correlations between cohesion scores and the objective team performance measure. It was also hypothesized that multiple linear regression analysis would show cohesion scores (i.e. OCB, GEQ- Task subscale, and GEQ-Social subscale) to be significant predictors of team success.

Chapter III

Method

Participants

Participants were recruited from multiple athletic and organizational teams. There were two target populations, both of which voluntarily participated in the study: A sport population, consisting of current student-athletes from a few Division II universities and a NAIA university located in the Southeast and an organizational population consisting of currently employed members in the sales industry from an urban city located in the Midwest region of the United States.

The sport population incorporated all years of experience (freshman to senior-level), included both male and female athletes, and all collegiate-level sports that used wins and losses as team performance measures on both campuses. Basketball, baseball, volleyball, rowing, tennis, softball, and soccer were among the sports included; however participants from basketball, rowing, softball and soccer were the only sports which responses were received. The organizational population incorporated all years of experience within each organization and was not limited by race, gender or department within the sales industry. A single industry was selected for use instead of varying industries to enable application of an objective organizational team performance measure. The sales industry was chosen due to the OCB's foundation from sales. However, only participants from two insurance sales teams were included in the study due to low respondent turnout. Any participants under the age of 18 were excluded from the study. APA and university Institutional Review Board guidelines were followed in regards to ethical and fair treatment of participants.

Measures

A demographic questionnaire included items which assessed each participant's background information such as gender and ethnicity. Items regarding experience level assessed the two contexts differently. In the athletic setting, information about academic standing, age, sport and division was requested. In the organizational setting, information about age, years with company, and specific sales industry (i.e. insurance, pharmaceutical) was requested.

Team Success. Team success was measured using the win-loss percentage for athletic teams and sales growth for organizational teams (See Appendix A). In the athletic setting, win-loss percentage from the start date of data collection until the end of the season was measured. This enabled an accurate measure of performance during a specific time period of the season for all sports included; all athletic teams' seasons will end at relatively at the beginning of May. In the organizational setting, sales growth, was computed as the percentage change over a previous time period's sales (i.e. [2009 1st quarter sales] – [2008 1st quarter sales] / 2008 1st quarter sales) (Siders, George, & Dharwadkar, 2001). For this study, each industry's first quarter sales (defined as the time from October 1st thru December 31st) was be used and measured until completion; this current sales quarter will then be compared to the same sales quarter of the previous year to allow accurate organizational performance measure. For this study, 2010 first quarter gross annual sales (October 1st, 2009 thru December 31st 2009) were compared to 2009 first quarter gross annual sales (October 1st, 2008 thru December 31st, 2008). However, there can be negative values using this performance measure; to normalize sales growth to a similar measuring stick used in sports, percentage change from one quarter to another

was converted so .50 became the baseline. For example, a .500 win-loss percentage in a sport is considered neutral with higher percentages equating with higher team performance. In sales, 0% considered neutral and equated with no change; any positive increase in sales indicates higher team performance.

Team Cohesion.

The Group Environment Questionnaire (GEQ) (**Carron, Brawley, & Widmeyer, 1998).** The GEQ was used to measure team cohesion. The GEQ is an 18-item inventory scored on a 9-point Likert scale with scores ranging from 1 = *Strongly disagree* to 9 = *Strongly agree* (See Appendix B). Higher scores reflect higher perceptions of cohesion. The GEQ contains four subscales that assess the four dimensions of cohesion: Group Integration- Task (GI-T; five items), Group Integration-Social (GI-S; four items), and Individual Attractions to Group-Task (ATG-S; four items, and Individual Attractions to Group-Social (ATG-T; five items) Research using the GEQ (Carron, Brawley, & Widmeyer, 1998) has shown the subscales of the GEQ to be both valid and reliable with Cronbach's alpha coefficient values for each subscale found to be 0.70 (GI-T), 0.76 (GI-S), 0.64 (ATG-S), and 0.75 (ATG-T) and "similar and larger values have been reported for the GEQ in other studies (e.g. Carron, Bray, & Eys, 2002; Carron, et al., 2002)." These four subscales are internally consistent and demonstrate content, concurrent and predictive validity (Carron et al., 1998). For this study, the internal consistency was computed for the data obtained. From the GEQ, the task ($\alpha = .87$) and social ($\alpha = .81$) cohesion scales possessed acceptable reliability; from the OCB, the three collective subscales ($\alpha = .72$) also possessed acceptable reliability.

Individual team members' scores from the cohesion measures were aggregated to

produce an overall measure of cohesion for each team. This method has been used in previous research by Carron, Bray, and Eys (2002). For purposes of this study, the primary investigator modified the language of the scale so the item stems were consistent with both an athletic and organizational environment. A common example was changing "win" in the original scale to "perform well" in the modified scale or "parties" in the original context to "social outings" in the modified scale. Previous researchers using similar measures such as the OCB (Aoyagi, et al., 2008) have made comparable modifications to allow for congruence between items and the environment of interest.

Organizational Citizenship Behavior (OCB) **(Posdakoff, Ahearne, &MacKenzie, 1997).** The OCB was also used to assess team cohesion based of literature demonstrating the OCB's statistical relationship with cohesion (Aoyagi, et al., Posdakoff, et al., 2000) (See Appendix C). Originally tailored to identify behaviors that support performance in the organizational setting, it has been suggested for use in sport due to similarity of performance constructs in the sport and organizational setting (Aoyagi, et al., 2008). It is utilized to identify behaviors which are consistent with cohesion and promote the effective functioning in a team. Higher scores on this measure indicate that team members demonstrate high team cohesion and are invested in the success of the team. The measure is a 13-item inventory scored on a 7-point Likert scale with scores ranging from 1 = *Strongly disagree* to 7 = *Strongly agree*. The measure consists of three subscales: helping behavior, sportsmanship and civic virtue. Research has shown the OCB measure to be reliable (Cronbach's alpha coefficients ranging from 0.75 to 0.93 for each of the three subscales) and demonstrate internal consistency, convergent and discriminant validity (Posdakoff & MacKenzie, 1994). For the purposes

of this study, the OCB measure will be used to measure cohesion in a both contexts and the language of the scale was modified so items were consistent with an athletic and organizational environment (i.e. changing the word “crew” to “team”). Previous researchers using this measure (Aoyagi, et al., 2008) have made comparable modifications to allow for congruence between items and the environment of interest.

Procedure

Permission to contact participants from the sport population was gained through their respective university coaches through email. After permission was granted, the researcher established a team meeting with all team members present to explain the parameters of the study and obtain questionnaire responses. During the informal presentation for the study, it was stressed that participation was voluntary and no consequences would occur from their choice to participate or not participate. Volunteers were given a consent form explaining the nature of the study, potential benefits and risks involved, and contact information of the principle investigator. Upon completion of the consent form, student athletes received a survey packet containing the questionnaires. In order to protect against coercion, coaches were not present and the principle investigator and another research assistant were the only distributors and collectors of the surveys. The survey packet took approximately 15 minutes to complete, after which participants were given an opportunity to pose any additional questions about the study.

Permission to contact participants from the organizational population was gained through email contact of each organization's department supervisor. This ensured that the “team” contacted was the group of employees working together most often or the group within a department of a larger organization. An informal description of the study was

outlined in the email and a copy of the survey packet that participants would complete was attached or each supervisor to read. The same topics stressed to the sport population such as voluntary participation and consequences of participation were mentioned to the organizational population. Once permission was granted, each organizational team was contacted via email and instructed to an online survey web-site, exhibiting informed consent, the nature of the study and the three measures. Participants were told that the completion of the surveys indicated voluntary agreement to participate in the study. Contact information for the primary investigator was also provided so participants had an opportunity to pose additional questions regarding the study.

Study Design and Data Analysis

Prior to analysis, the data were screened for accuracy of normality, missing values and data entry; survey packets containing missing items were thrown out to prevent skewed subscale score results The independent variable was the team context (i.e. athletic or organization) and the dependent variables were the measurements of cohesion from each instrument. The dependent variables were measured by seven subscales: four from the GEQ (Group Integration-Task, Group Integration-Social, Individual Attractions to Group-Social, and Individual Attractions to Group-Task) and three from the OCB measure (helping behavior, sportsmanship and civic virtue. This is shown in Table 1.

Table 1

Cohesion Variables Used in Statistical Analyses

Measure	**Description**	**Dependent Variables (Subscales**
GEQ	Used to assess team cohesion	1. Group Integration-Task (GI-T) 2. Group Integration-Social (GI-S) 3. Individual Attractions to Group-Task (ATG-T) 4. Individual Attractions to Group-Social (ATG-S)
OCB	Used to assess the effectiveness of teams; also shown to be a measure assessing team cohesion	1. Helping Behavior (HB) 2. Civic Virtue (CV) 3. Sportsmanship (SP)

Statistical Analysis

All statistical analyses were conducted using SPSS 16.0 (SPSS Incorporated, Chicago, IL). Preliminary statistical analyses were performed on all the measures to provide descriptive statistics for the sample. A one-way MANOVA was used to investigate differences in sport team type (basketball, rowing, soccer, softball) and the subscales from the GEQ (ATG-T, ATG-S, GI-T, GI-S) and the OCB (Helping Behavior, Civic Virtue, Sportsmanship) In the organizational setting, an independent samples *t*-Test was used because there were only two industries that participated in the study; the test was conducted to investigate the differences in insurance sales organization (ORG #1, ORG #2) and the subscales from the GEQ and the OCB. Pearson correlations were used

to assess the relationship between cohesion and the performance measures from both the athletic and organizational settings. In the athletic setting, performance was defined as win-loss percentage; in the organizational setting, it was defined as sales growth of gross annual sales from first quarter of 2009 and first quarter 2010. An increase in the percentage of sales over the previous quarter sales for the signified positive performance, similar to more wins equating with positive performance in athletics.

Due to previous literature showing a positive cohesion-performance relationship (Carron, Bray, & Eys, 2002; Carron, et al., 2002; Mullen & Copper, 1994), it was hypothesized that cohesion scores would significantly predict team success in the athletic and organizational settings. Thus, multiple linear regression analysis was used to determine if OCB, GEQ-Task, and GEQ-Social cohesion scores were significant predictors of team success.

Chapter IV

Results

Aggregation of Data. Team members' GEQ and OCB scores for the Pearson correlations were combined to provide team scores for each subscale and the aggregation of this data has been supported through previous literature (Carron, Bray, & Eys, 2002). Conversion of individual subscale scores to an overall mean score for each team does not negatively impact the validity of the study because research has shown the concept of 'cohesion-as-shared-beliefs' (Carron et al., 1998) meaning that perceptions of team cohesion are relatively consistent among members of the same team.

Descriptive Statistics. Tables 2 and 3 provide a summary of the descriptive statistics for the athletic and organizational samples.

Table 2

Descriptive Information for Athletic Sample

	Total Sample (N = 21)		
	M	*SD*	*Range*
Age	20.14	1.28	18-23
Sport	Frequency	%	
Softball	5	23.8%	
Rowing	3	14.3%	
Soccer	8	38.1%	
Basketball	5	23.8%	
Ethnicity	Frequency	%	
African American	5	23.8%	
Hispanic	2	9.5%	
Pacific Islander	1	4.8%	
Caucasian	13	61.9%	
Gender	Frequency	%	
Male	4	19%	
Female	17	81%	

Table 3

Descriptive Information for Organizational Sample

	Total Sample (N = 16)		
	M	*SD*	*Range*
Age	33	9.67	22-54
Organization	Frequency	%	
Insurance Sales Company #1	6	37.5%	
Insurance Sales Company #2	10	62.5%	
Ethnicity	Frequency	%	
Hispanic	1	6.2%	
Caucasian	15	93.8%	
Gender	Frequency	%	
Male	7	43.7%	
Female	9	56.3%	

Cohesion and Team Performance. The first two hypotheses stated that a significant, positive correlation would be present between cohesion scores and team performance in the athletic and organizational settings, respectively. Table 4 illustrates the summary of the correlation analysis of the relationship between cohesion and team performance and effect sizes for the athletic sample. A Pearson correlation coefficient was calculated for the relationship between teams' aggregate cohesion scores from the GEQ and OCB and respective win-loss percentage. As a total sample, no significant relationship was found between any of the seven subscales and the athletic teams' win-loss percentage; there was no significant relationship between cohesion and team performance in among the athletic teams sampled. The r^2 values for each subscale were generally low. Pearson correlations were not carried out on an individual group basis because there were not enough different teams (i.e. basketball team #1, #2, #3) per sport that participated in the study; with less than three teams per sport participating, the data

would be skewed. There were no correlations calculated for the organizational teams because there were only two teams participating in the study from that context.

Table 4

Correlations of Cohesion with Team Performance: Athletic Teams

Group	**Cohesion Measure**	**Cohesion-Performance Relationship**	r^2
All teams (n = 6)	Attractions to Group-Task	.36	.13
	Attractions to Group-Social	-.36	.13
	Group Integration-Task	.18	.03
	Group Integration-Social	-.43	.19
	Helping Behavior	.12	.02
	Civic Virtue	-.05	0
	Sportsmanship	.26	.07

Note. Team performance represents an athletic team's winning percentage out of 100%.

Multiple Linear Regression. The third hypothesis stated that the cohesion scores would be significant predictors of team success in the athletic and organizational settings. A multiple linear regression analysis was calculated to determine the potential contribution of cohesion to team success. Team success was predicted from athletic teams' combined OCB, GEQ-Task, and GEQ-Social cohesion scores; thus, the independent variables entered were OCB (HB, SP, CV combined), GEQ-Task (ATG-T and GI-T combined), and GEQ-Social (ATG-S and GI-S combined) scores.

The overall regression model was not significant ($F(3,20) = 1.97$, $p = .157$); thus team cohesion scores did not significantly predict team success. An a priori power test showed the required number of participants for this analysis (power = .80) to be 77. As was the case with the correlations, analyses with the organizational teams was planned

but not computed due to participation of only two teams. Regression analyses for these teams were not carried out because data would be skewed.

Subscale Scores. Post-hoc analyses were conducted after statistics were calculated for the hypotheses. Tables 5 and 6 show the means and standard deviations of the subscale scores for the athletic and organizational teams. The range of scores for the ATG-T and GI-S subscales was 4-36; the range of scores for the ATG-S and GI-T subscales was 5-45. The range for the Helping Behavior (HB) subscale was 7-49 and the range for the Civic Virtue (CV) and Sportsmanship (SP) subscales was 3-21. Lower scores indicated lower perceptions of cohesion for each respective subscale. Before looking for an overall relationship between cohesion and performance, a few preliminary analyses were conducted to determine if differences were present in the samples. A one-way MANOVA was computed with the sport team type (softball, rowing, soccer, basketball) as the independent variables and the seven subscales from the GEQ (ATG-T, ATG-S, GI-T, GI-S) and the OCB (HB, CV, SP) as the dependent variables. No significant effect was found (*Hotelling's Trace*(7,21) = .21, $p > .05$). A MANOVA investigating the differences in GEQ cohesion and sport team type and a MANOVA investigating the differences in OCB cohesion and sport team type were also computed; no significant effect was found for GEQ cohesion and sport team type (*Hotelling's Trace*(4,12) = .11, $p > .05$) or OCB cohesion and sport team type (*Hotelling's Trace*(3,9) = .43, $p > .05$). However, post-hoc ANOVA tests showed sport type had a significant effect on Group Integration-Social factors ($F(3,17) = 3.23$, $p < .05$). For the organizational teams, an independent samples *t*-Test was computed because there were only two organizations which participated in the study and no significant difference was

found between the organizations and subscale scores ($P > .05$). Post-hoc power analysis yielded a power of .11 for the MANOVA and .27 for the independent samples *t* –Test (Faul, Erdfelder, Lang, and Buchner, 2007).

Post hoc correlation analyses were also calculated. Table 7 illustrates the correlation matrix for the GEQ and OCB subscale scores in athletic teams. A Pearson correlation coefficient was calculated for the relationship between subjects' GEQ and OCB subscale scores. Multiple significant, positive correlations were found between HB and ATG-T ($r(6) = .92$, $p < .01$) and HB and GI-T ($r(6) = .93$, $p < .01$). This indicates a significant linear relationship between the HB construct of the OCB with the task constructs of the GEQ.

Table 5

GEQ and OCB Subscale Scores: Athletic Teams

	Total Sample (N = 21)		
Sport	*M*	*SD*	*Range*
ATGT			4-36
Softball	28.20	6.61	
Rowing	25.32	7.37	
Soccer	24.13	8.90	
Basketball	25.40	10.71	
ATGS			5-45
Softball	37.20	5.22	
Rowing	29.67	5.51	
Soccer	33.75	7.21	
Basketball	31.40	11.14	
GIT			5-45
Softball	32.00	7.97	
Rowing	21.67	11.93	
Soccer	29.75	11.39	
Basketball	29.40	10.26	
GIS			4-36
Softball	24.40	4.51	
Rowing	20.33	3.22	
Soccer	29.12	5.57	
Basketball	20.20	7.66	
HB			7-42
Softball	39.20	5.59	
Rowing	29.33	9.71	
Soccer	36.00	9.74	
Basketball	34.00	13.73	
CV			3-21
Softball	16.20	1.79	
Rowing	11.33	3.22	
Soccer	14.00	3.25	
Basketball	15.40	4.93	
SP			3-21
Softball	13.80	3.49	
Rowing	6.67	3.06	
Soccer	11.00	3.51	
Basketball	12.60	3.98	

Note. Cohesion was assessed through individual subscale scores from the GEQ (Group Environment Questionnaire): ATG-T (Attractions to Group-Task), ATG-S (Attractions to Group-Social), GI-T (Group Integration-Task), GI-S (Group Integration-Social) and OCB (Organizational Citizenship Behavior): HB (Helping Behavior), CV (Civic Virtue), SP (Sportsmanship). Each subscale had its own range with lower scores representing less cohesiveness.

Table 6

GEQ and OCB Subscale Scores: Organizational Teams

	Total Sample (N = 21)		
Sport	*M*	*SD*	*Range*
ATGT			4-36
Insurance Sales Company #1	28.50	4.85	
Insurance Sales Company #2	26.60	4.84	
ATGS			5-45
Insurance Sales Company #1	24.33	8.21	
Insurance Sales Company #2	26.30	5.79	
GIT			5-45
Insurance Sales Company #1	30.67	7.17	
Insurance Sales Company #2	28.50	5.17	
GIS			4-36
Insurance Sales Company #1	24.33	5.54	
Insurance Sales Company #2	21.80	7.18	
HB			7-42
Insurance Sales Company #1	36.83	6.21	
Insurance Sales Company #2	37.80	4.98	
CV			3-21
Insurance Sales Company #1	15.00	3.69	
Insurance Sales Company #2	16.80	2.35	
SP			3-21
Insurance Sales Company #1	13.17	4.75	
Insurance Sales Company #2	15.40	4.52	

Note. Cohesion was assessed through individual subscale scores from the GEQ (Group Environment Questionnaire): ATG-T (Attractions to Group-Task), ATG-S (Attractions to Group-Social), GI-T (Group Integration-Task), GI-S (Group Integration-Social) and OCB (Organizational Citizenship Behavior): HB (Helping Behavior), CV (Civic Virtue), SP (Sportsmanship). Each subscale had its own range with lower scores representing less cohesiveness.

Table 7

Aggregate Correlation Matrix for GEQ and OCB Subscale Scores: Athletic Teams

Measure	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1. ATG-T	_ _						
2. ATG-S	.65	_ _					
3. GI-T	.78	.61	_ _				
4. GI-S	.55	.81*	.70	_ _			
5. HB	.92**	.76	.93**	.78	_ _		
6. CV	.26	.13	.68	.35	.48	_ _	
7. SP	-.02	-.52	.48	-.06	.16	.61	- -

Note. ATG-T= Attractions to Group-Task; ATG-S = Attractions to Group-Social; GI-T = Group Integration-Task; GI-S = Group Integration-Social; HB = Helping Behavior; CV = Civic Virtue; SP = Sportsmanship. * $p < .05$, **p < .01.

Chapter V

Discussion

The main aim of the study was to examine team cohesion and team performance in athletic and organizational teams using aggregate measures of cohesion, with team performance represented by season winning percentage and sales growth. A secondary aim was to examine if team cohesion was a significant predictor for team success. Any implications made from this study must be made with caution due to a low representation of athletic and organizational teams and in effect, a low power. Because of this limitation, any findings against the proposed hypotheses should be noted but not viewed as a barrier for future research involving cohesion-performance relationship examinations in the organizational setting or the use of the OCB in athletic settings. A higher number of participants resulting from better recruitment techniques could bolster a study of similar nature and discover non-skewed statistical data which answers the proposed research questions. The low sample size also had an impact on the parametric statistics conducted. Statistical parametric analyses require a minimum of 30 participants for calculation; for this study, the analyses conducted on the athletic teams fell short of this requirement (n = 21) and this may have affected the results.

The first hypothesis stated that a significant, positive correlation between cohesion and team performance would be present in organizational teams; however, this hypothesis could not be addressed as there were only two organizational teams that participated in the study. Similar future studies could benefit from the presence of more organizational teams and potentially address the proposed hypothesis. Participant recruitment could potentially be improved by targeting specific sales industries (i.e. all

insurance or retail sales teams) from different regions of the country or by targeting different sales teams from a single industry (i.e. different advertising sales teams from one specific company).

The second hypothesis stated that a significant, positive correlation between cohesion and team performance would be present in athletic teams. The correlations calculated were not significant; however, there were a few important findings. First, task cohesion may have a more positive relationship with team performance than social cohesion, a belief echoed by previous literature (Jowett & Chaundy, 2004; Widmeyer, et al., 1993). This was shown through the GEQ-task subscales (ATG-T, GI-T) being positive in nature in comparison to the GEQ-social subscales being negative in nature. Literature has shown a cohesion-performance relationship numerous times in athletic teams (Senecal, Loughead, & Bloom, 2008; Carron, et al., 2002; Carron, Bray, & Eys, 2002; Mullen & Copper, 1994) and it was expected that due to a low *n*, the Pearson correlations would not be significant but at least be positive in nature. This provides further evidence of the different impact task and social aspects have on team cohesion and further examinations of a cohesion-performance relationship should be made with this awareness.

Second, this study also explored each athletic team's perception of cohesion through the use of the OCB. The significant correlations between HB and the task constructs of the GEQ (ATG-T, GI-T) served as one of the more promising results of the study. These correlations could be interpreted as further potential evidence that the OCB is applicable to the athletic context and should continue to be utilized in athletic cohesion studies. Specifically, this could substantiate Aoyagi et al.'s (2008) suggestion that the

OCB could be used as a cohesion-measuring construct in athletic teams when given enough participants. The similarity of the two measures through particular subscales provides support for both as cohesional measures, regardless of team context, and is an encouraging sign for future studies. Also in support of Aoyagi et al.'s findings were the HB and SP subscales being positive in nature, even though they were not significantly correlated with performance. Finally, this study showed the applicability of the OCB being obtained from the team member; this is important because previous OCB research has been primarily conducted where subscale scores were obtained from the supervisor's perspective.

The third hypothesis stated that cohesion scores (OCB, GEQ-Task subscale, and GEQ-Social subscale) would significantly predict team success through multiple linear regression. Results exhibited that the GEQ subscales and OCB scores did not significantly predict team success; closer inspection of analyses run showed that only approximately 13% of the variability of team success was accounted for by the three predictors (OCB, GEQ-Task, GEQ-Social). The main cause for the lack of significant findings for the predictors can be assumed to be a result of the lack of participants as the recommended number of participants to achieve acceptable power for this analysis was 77. No analyses were conducted for the organizational teams because recruitment procedures were not able to obtain more than two teams. An unfortunate result is the OCB's lack of contribution to team performance. Aoyagi's (2008) research reflected that some subscales of the OCB (HB, CV, SP) were highly correlated with cohesion as it provided preliminary evidence for the use of the OCB in sport. With cohesion being a universal construct that can be attributed to different types of groups, it was hypothesized

that the OCB would not only measure cohesion in athletic teams, but also that it would also predict team success due to previous literature showing a positive cohesion-performance relationship. This data does not point towards potential significant regression equations found for the OCB when predicting team success from cohesion.

Practical Implications

The results from the present study provide the potential utility of cohesional development. The positive nature of the GEQ-task components with team performance is evidence that could be utilized by SPC's and I/O psychologists to focus on task-cohesion development. This is further supported through previous literature (Jowett & Chaundy, 2004; Widmeyer, et al., 1993) and a focus on the task aspects of cohesion could potentially yield improved performance. Example interventions could put more importance on GI-T cohesion such as unifying team goals prior to a season or fiscal year, and ATG-T cohesion through the open discussion of ideas that could potentially lead to new styles of play or ways of thought. Researchers can also utilize results from this study to aid in the development of cohesion through leadership, team, and personal factors. With more participants, the multiple regression analysis could potentially yield more promising results and this could be utilized by practitioners as reasoning for developing leadership, team, and personal factors. Improving team leader-team member cohesion through communication and respect could potentially improve GI-T cohesion. Improving cohesion through team building techniques away from normal team settings and providing opportunities for team members to learn about each other could potentially improve ATG-S and GI-S cohesion. Finally, improving cohesion through roundtable discussions could potentially create new ideas or strategies for performance while also

potentially improving ATG-T cohesion.

Implications for Future Research

The main implication for future studies can be made from the significant correlations between the HB subscale and GEQ-task subscales. Future studies could continue to examine the OCB as a cohesional measure in the athletic context and also further examine the influence of the GEQ on performance in any team context. However, there are other implications for future research. MANOVA results showed potential evidence for future studies looking at differences in social cohesion factors among different sports teams. Significant overall differences in cohesion scores as perceived by different interactive (instead of coactive) athletic teams were expected due to the inherent uniqueness of each sport type and previous research showing a significant difference for sport type when measuring comparing cohesion means (Carron, Bray, & Eys, 2002). This could potentially be attributed to the participant limitation of the study; evidence of this limitation is seen as a post hoc ANOVA showed that sport type had a significant effect on GI-S factors. While skewed, this indicates that among sport teams, athletes may have a different sense of social group integration (i.e. wanting to spend time with teammates outside the normal team setting) than other cohesion factors. Exploration of how social cohesion impacts team effectiveness based on sport or sport type (interactive vs. coactive sport) could substantiate evidence from this study.

This study also exhibited the importance of task-cohesion (ATG-T, GI-T) and its potential positive relationship to performance through the correlations conducted. Findings were consistent with previous research (Carron, Bray, & Eys, 2002; Widmeyer, et al., 1993) that task cohesion had a positive relationship with team performance. A

future avenue of exploration could be conducted to see if the task constructs of the GEQ are also related to positive team performance in an organizational sample. Also a focus on multiple organizational teams within a particular trade (i.e. a group of insurance sales, pharmaceutical sales, and retail sales teams) and utilizing self-reported scores from the OCB and GEQ to compare to team performance (i.e. sales growth) could yield potentially interesting results that this study aimed to produce.

Results from the independent samples *t*-Test computed on the organizational teams showed no significant differences between the cohesional subscale scores and the individual organizations, but opens up another area of exploration for future studies. It was expected that while the participating organizational teams were both involved with insurance sales, there would be differences in cohesion perceptions based of the inherent differences of the two companies and their employees. For example, one organizational team had significantly higher sales numbers than the other because it covered a larger region in the Midwest and employed more personnel. While organizational teams are constructed for the same collective purpose, the social interactions, the influence of supervisors, as well as the age, gender, and ethnic differences contribute to the expectation of dissimilar teams. Future studies could examine whether or not organizational teams should differ based on industry, much like athletic teams have been found to differ based on their sport.

Limitations

There are multiple limitations worth noting. Most importantly, one of the main aims of study- finding evidence for a cohesion-performance relationship in organizational teams- could not be carried out due to a lack of participants. This had a major impact on

the hypotheses and statistical results. Recruitment from numerous athletic and organizational teams yielded only 47 candidates of which 37 were included as participants after data was screened. While recruitment fell well short of the intended 150 participant goal, data collection and statistical analyses were computed as planned with the knowledge that potential significant findings could be skewed due to a lack of statistical power. Because only two organizational teams were represented in the study, certain statistical analyses that were computed for athletic teams were not conducted on organizational teams. Also of importance was that cohesion was measured as a construct relating to team outcomes. While cohesion can be measured on an individual basis, research (Hoyle & Crawford, 1994) has shown the GEQ to indicate the strongest relationships between estimates of group cohesion and group related constructs (i.e. team performance). While a single subscale score represents an individual's perceptions about cohesion and that perception may be lost in the group subscale (Hoyle & Crawford, 1994), research has shown the aggregation of subscale scores is supported (Carron et al., 1998). The belief is that perceptions of cohesiveness are relatively consistent among members of the same team. It is also worth mentioning that the HB subscale of the OCB had 7 items in comparison to the CV and SP subscales, which both had 3 items. This imbalance of items could have impacted the results involving the OCB.

Other limitations include the difference in demographic regions of the samples used as the participating athletic teams were pulled from the Southeast United States while the organizational teams originated from the Midwest. These regional differences could have had an effect on cohesion perceptions due to differing societal norms in the regions. Finally, the performance measures used could be viewed as not be fully

representative of the success of teams. Win-loss percentage in athletics is the most common way to measure team success for collegiate teams; however, there is not a similar success measure that is as easily quantifiable as win-loss percentage that has been researched. On the organizational side, the same issue exists as sales growth represents team success but outside factors relating to the national economy, turnover rates and team goals impact sales numbers. An exploration of state and trait cohesional levels could be of interest to gain more specific insight on cohesion during specific games in comparison to the course of a season or during specific quarters of an organizational year.

Summary of Findings

Results from this study provided many avenues of future implications for practice. Evidence for a focus on GEQ task constructs relating to high athletic performance was provided. Also, support for an examination of social constructs on athletic team cohesion was provided. More importantly, this study provided further evidence for the applicability of the OCB to an athletic context and allowed ideas for expansion of this study to potentially occur completely in the organizational context. While the research hypotheses were not supported due to a low number of participants, hopefully this study can be replicated in future studies with enough subjects to gain a better understanding of the cohesion-performance relationship in the athletic and organizational setting.

References

Aoyagi, M.W., Cox, R.H., & McGuire, R.T. (2008). Organizational citizenship behavior in sport: Relationships with leadership, team cohesion, and athlete satisfaction. *Journal of Applied Sport Psychology, 20,* 25-41.

Avolio, B. (2007). Promoting more integrative strategies for leadership theory-building. *American Psychologist, 62,* 25-33.

Beauchamp, M., & Eys, M.A. (2007). *Group dynamics advances in sport and exercise psychology: Contemporary Themes.* Oxford: Routledge.

de Bosscher, V., Bingham, J., Shibli, S., van Bottenburg, M., & De Knop, P. (2008). *The global sporting arms race: An international comparative study on sports policy factors leading to international sporting success.* Oxford: Meyer & Meyer.

Berkowitz, L. (1954). Group standards, cohesiveness, and productivity. *Human Relations, 7,* 509-514.

Bion, W.R. (1996). *Experiences in Groups and Other Papers*,6th edn. Routledge, London and New York.

Brawley, L.R., Carron, A.V., & Widmeyer, W.N. (1987). Assessing the cohesion of teams: Validity of the Group Environment Questionnaire. *Journal of Sport Psychology, 25(1),* 77-92.

Carron, A.V. (1980). *Social psychology of sport.* Ithaca, NY: Mouvement.

Carron, A. V., & Brawley, L. R. (2000). Cohesion: Conceptual and measurement issues. Small Group Research, 31, 89-106.

Carron, A.V., Brawley, L.R., & Widmeyer, W.N. (2002). *The Group Environment Questionnaire test manual.* Morgantown, WV: Fitness Information Technology.

Carron, A.V., Brawley, L.R., & Widmeyer, W.N. (1998). The measurement of cohesiveness in sport groups. In J.L. Duda (Ed.), *Advancements in sport and exercise psychology measurement* (pp. 213-226). Morgantown, WV: Fitness Information Technology.

Carron, A.V., Bray, S.R., & Eys, M.A. (2002). Team cohesion and team success in sport. *Journal of Sport Sciences, 20,* 119-126.

Carron, A.V., Colman, M.M., Wheeler, J., & Stevens, D. (2002). Cohesion and performance in sport: A meta-analysis. *Journal of Sport & Exercise Psychology, 24*, 168-188.

Carron, A.V., & Hausenblas, H.A. (1998). *Group dynamics in sport* (2nd ed.). Morgantown, WV: Fitness Information Technology.

Carron, A.V., & Hausenblas, H.A., & Eys, M.A. (2005). *Group Dynamics in sport* (3rd ed.). Morgantown, WV: Fitness Information Technology.

Cohen, J. (1992). A power primer. *Psychological Bulletin,* 112, 155-159.

Crace, R.K., & Hardy, C.J. (1997). Individual values and the team building process. *Journal of Applied Sport Psychology, 9,* 41-60.

Dess, G.G., & Robinson, Jr., R.B. (1984). Measuring organizational performance in the absence of objective measures: The case of privately-held firm and conglomerate business unit. *Strategic Management Journal, 5*(3), 265-273.

Eys, M.A., Burke, S.M., Carron, A.V., & Dennis, P.W. (2006). The sport team as an effective group. In J. Williams (Ed.), *Applied Sport Psychology.* Mountain View: CA: Mayfield Publishing Company.

Faul, F., Erdfelder, E., Lang, A.G., & Buchner, A. (2007). G*Power 3: A flexible

statistical power analysis program for the social, behavioral, and biomedical sciences. *Behavior Research Methods,* 39, 175-191.

Fletcher, D., & Wagstaff, C.R.D. (2009). Organizational psychology in elite sport: Its emergence, application and future. *Psychology of Sport and Exercise, 10,* 427-434.

Hoyle, R.H., & Crawford, A.M. (1994). Use of individual-level data to investigate group phenomena: Issues and strategies. *Small Group Research, 25,* 464-485.

Hinshelwood, R.D. (1991). *A Dictionary of Kleinian Though.* Free Asssociation Books, London.

Gammage, K., Carron, A.V., & Estabrooks, P. (2001). Team cohesion and individual productivity: The influence of the norm for productivity and the identifiability of individual effort. *Small Group Research, 32(1),* 3-18.

Gerber, M. (1998). Winning isn't everything: A group work approach to sports teams. *Social Work with Groups, 21(3),* 35-48.

Gill, D.L., (1986). *Psychological dynamics of sport.* Champaign, IL: Human Kinetics.

Gould, D., Greenleaf, C., Chung, Y.C., & Guinan, D. (2002). A survey of US Atlanta and Nagano Olympians: Variables percieved to influence performance. *Research Quarterly for Exercise and Sport, 73,* 175-186.

Greenleaf, C., Gould, D., & Dieffenbach, K. (2001). Factors influencing Olympic performance: Interviews with Atlanta and Nagano US Olympians. *Journal of Applied Sport Psychology, 13,* 154-184.

Jordan, M. (2004) *I can't accept not trying.* New York: HarperCollins.

Jowett, S., & Chaundy, V. (2004). An investigation into the impact of coach leadership

and coach-athlete relationship on group cohesion. *Group Dynamics: Theory, Research, and Practice, 8,* 302-311.

Jowett, S., & Lavallee, D. (2007). *Social psychology in sport.* Champaign, IL: Human Kinetics.

Karambayya, R. (1989). *Contexts for organizational citizenship behavior: Do high performing and satisfying units have better 'citizens.'* York University Working Paper, North York, Ontario, Canada.

Katzenbach, J., & Smith, D. (1992). *The wisdom of teams: created the high-performance organization.* Cambridge, MA: Harvard Business School Press.

Levi, D., & Slem, C. (1995). Teamwork in research and development organization: The characteristics of successful teams. *International Journal of Industrial Ergonomics, 16,* 29-42.

Martens, R., & Peterson, J. (1971). Group cohesiveness as a determinant of success and member satisfaction in team performance. *International Review of Sport Sociology, 6,* 49-71.

Miller, E. (1993). *From Dependency to Autonomy: Studies in Organization and Change.* Free Association Books, London.

Mullen, B., Copper, C. (1994). The relation between group cohesiveness and performance: An integration. *Psychological Bulletin, 115,* 210-227.

Organ, D.W., (1988). *Organizational citizenship behavior: The good soldier syndrome.* Lexington, MA: Lexington Books.

Patterson, M.M., Carron, A.V., & Loughead, T.M. (2005). The influence of team norms on the cohesion self-reported performance relationship: A multi-level analysis.

Psychology of Sport and Exercise, 6, 479-493.

Posdakoff, P.M., MacKenzie, S.B., Paine, J.B., & Bachrach, D.G. (2000). Organizational citizenship behaviors: A critical review of the theoretical and empirical literature and suggestions for future research. *Journalof Managemen, 26,* 513-563.

Posdakoff, P.M., Ahearne, M., & MacKenzie, S.B. (1997). Organizational citizenship behavior and the quantity and quality of work group performance. *Journal of Applied Psychology, 82,* 262-270.

Posdakoff, P.M. &MacKenzie, S.B. (1994). Organizational citizenship behavior and sales unit effectiveness. *Journal of Marketing Reasearch, 31,* 351-363.

Senecal, J., Loughead, T.M., & Bloom, G.A. (2008). A season-long team building intervention: Examining the effect of team goal setting on cohesion. *Journal of Sport & Exercise Psychology, 30,* 186-199.

Siders, M.A., George, G., & Dharwadkar, R., (2001). The relationship of internal and external commitment foci to objective job performance measures. *Academy of Management Journal, 44*(3), 570-579.

Stokes, A. (1994). *The Invitation to Art.* Tavistock, London.

Thomas, M., & Hynes, C. (2007). The darker side of groups. *Journal of Nursing Management, 15,* 372-385.

Veach, T.L., & May, J.R. (2005). Teamwork: For the good of the whole. In S. Murphy (Ed.), *The Sport Psych Handbook.* Champaign, IL: Human Kinetics.

Widmeyer, W.N., Carron, A.V., & Brawley, L.R., (1993). Group cohesion in sport and exercise. In *Handbook of Research in Sport Psychology* (Eds. R.N. Singer, M. Murphey and K.L. Tennant), pp. 672-692. New York: Macmillan.

Widmeyer, W.N., Brawley, L.R., & Carron, A.V. (1985). *The measurement of cohesion in sport teams: The group environment questionnaire*. London, Ontario: Sports Dynamics.

Weinberg, R. (2009). Team leadership. *Performance Psychology in Action: A Casebook for Working with Athletes, Performing Artists, Business Leaders, and Professionals in High-Risk Occupations.* 269-288.

Weinberg, R., & McDermott, M. (2002). A comparative analysis of sport and business organizations: Factors perceived critical for organizational success. *Journal of Applied Sport Psychology, 14,* 282-298.

Wright, H. (1989). *Groupwork: Perspectives and Practice.* Scutari Press, Middlesex.

Appendix A

Demographic Questionnaire

Thank you for participating in this study. All information provided will be kept completely confidential and data collected will only be reported for study purposes. Please mark your answers in the box.

1. **Gender**: [ ]Male [ ]Female

2. **Ethnicity:** [ ]African-American [ ]Asian [ ]Caucasian [ ]Hispanic
   [ ]Native American [ ]Other_____

3. **Experience Level:**

   -For Athletes: [ ]Freshman [ ]Sophomore [ ]Junior [ ]Senior

   Age: [ ]18 [ ]19 [ ]20 [ ]21 [ ]22 [ ]23 [ ]24

   Sport: [ ]Basketball [ ]Tennis [ ]Baseball [ ]Softball
   [ ]Rowing [ ]Soccer [ ]Volleyball

   NCAA: [ ]Division II [ ]NAIA

   -For Employees:

   Years with Company:_____

   Age Range:_____

   Sales Context: [ ]Insurance [ ]Pharmaceutical
   []Retail [ ]Other_____

Appendix B

Group Environment Questionnaire

The following questions are designed to assess your feelings about your PERSONAL INVOLVEMENT with this team. Please CIRCLE a number from 1 to 9 to indicate your level of agreement with each of the statements.

1. I do not enjoy being a part of the social activities of this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

2. I'm not happy with the amount of opportunities to contribute I get.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

3. I am not going to miss the members of this team when away from team setting.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

4. I'm unhappy with my team's level of desire to perform well.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

5. Some of my best friends are on this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

6. This team does not give me enough opportunities to improve my personal performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

7. I enjoy other social outings more than team social outings.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

8. I do not like the style of task execution on this team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

9. For me this team is one of the most important social groups to which I belong.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

10. Our team is united in trying to reach its goals for performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

11. Members of our team would rather go out on their own than all together

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

12. We all take responsibility for any loss or poor performance by our team.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

13. Our team members rarely party together.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

14. Our team members have conflicting aspirations for the team's performance.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

15. Our team would like to spend time together away from the team setting.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

16. If members of our team have problems, everyone wants to help them so we can get back to working together again.

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

17. Members of our team do not stick together outside of the team setting

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

18. Our team members do not communicate freely about each member's responsibilities during competition or work

1	2	3	4	5	6	7	8	9
Strongly Disagree								Strongly Agree

Thanks for your time and help.

The ***Group Environment Questionnaire*** (Carron, Brawley, and Widmeyer, 1985) evaluates four elements regarding how attractive a group is to its individual members. It measures the individual's attraction to the group as well as the group integration within the task and social dimensions in four different subscales:

1. The ***individual attraction-task*** score represents the individual's attraction to the group's task. (Sum of scores for items 2, 4, 6, and 8; range = 4-36)

2. The ***individual attraction-social*** score represents the individual's attraction to want to be part of the group. (Sum of scores for items 1, 3, 5, 7, and 9; range = 5-45)

3. The ***group integration-task*** score represents the direction of the group towards achieving their goal. (Sum of scores for items 10, 12, 14, 16, and 18; range = 5-45)

4. The ***group integration-social*** score represents the closeness and bondness of the group as a whole. (Sum of scores for items 11, 13, 15, and 17; range = 4-36)

To determine the final scores, add the numbers circled for the questions in the brackets above. However, **items 1, 2, 3, 4, 6, 7, 8, 11, 13, 14, 17, and 18 are reversed scored** which means that a 1 is equal 9 and 9 equal 1. The higher the score on each subscale, the greater it reflects that dimension (e.g., a score of 31 on the *individual attraction-social* subscale means the individual is more socially attracted to the group than a score of 15 would indicate). Note that the individual attraction subscales range from a low of 4 to a high of 36, whereas the group integration subscales range from a low of 5 to a high of 45.

Appendix C

Organizational Citizenship Behavior Questionnaire

Each of the following statements describes an action or characteristic that your teammates may display. Please indicate the extent to which you agree or disagree with each statement relative to your current teammates.

	Members of my team:	Strongly Disagree			Neutral			Strongly Agree
1.	Help each other out if someone falls behind	1	2	3	4	5	6	7
2.	Willingly share their expertise with other members of the team	1	2	3	4	5	6	7
3.	Try to act like peacemakers when other team members have disagreements	1	2	3	4	5	6	7
4.	Take steps to try to prevent problems with other team members	1	2	3	4	5	6	7
5.	Willingly give of their time to help team members who have sport or work-related problems	1	2	3	4	5	6	7
6.	"Touch base" with other team members before initiating actions that might affect them	1	2	3	4	5	6	7
7.	Encourage each other when someone is down	1	2	3	4	5	6	7
8.	Provide constructive suggestions about how the team can improve its effectiveness	1	2	3	4	5	6	7
9.	Are willing to risk disapproval to express their beliefs about what's best for the team	1	2	3	4	5	6	7
10.	Attend and actively participate in team meetings	1	2	3	4	5	6	7
11.	Always focus on what is wrong with our situation, rather than the positive side	1	2	3	4	5	6	7
12.	Consume a lot of time complaining about trivial matters	1	2	3	4	5	6	7
13.	Always find fault with what other team members are doing	1	2	3	4	5	6	7

Scoring Key:

Helping Behavior: helping others with or preventing the occurrence of work related problems
Items 1-7

Civic Virtue: characterized by responsible participation, involvement, and concern about the life of the organization
Items 8-10

Sportsmanship: extent to which the employee tolerates problems and daily hassles without complaining
Items 11-13 (each item is reverse scored)

****Adapted from:
Posdakoff, P. M., Ahearne, M., & MacKenzie, S. B. (1997). Organizational citizenship behavior
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82, 262-270.