INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.

UMI

A Bell & Howell Information Company
300 North Zeeb Road, Ann Arbor MI 48106-1346 USA
313/761-4700 800/521-0600

SITUATIONAL AND CONTEXTUAL INFLUENCES ON GOAL ORIENTATIONS

by

Lavon Williams

A Dissertation Submitted to
the Faculty of The Graduate School at
The University of North Carolina at Greensboro
in Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy

Greensboro
1996

Approved by

Diane L. Gill

Dissertation Advisor

APPROVAL PAGE

This dissertation has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Dissertation Advisor Diane L. Gill

Committee Members Daniel Gould

Jacquelyn W. White

12/13/95
Date of Acceptance by Committee

12/13/95
Date of Oral Presentation

WILLIAMS, LAVON., Ph.D. Situational and Contextual Influences on Goal Orientations. (1996) Directed by Dr. Diane Gill. pp. 179.

This study used a social cognitive approach to achievement motivation to examine the situational and contextual factors associated with goal perspectives. Two primary questions were asked: (1) do involvement and state anxiety vary as a function of the reward structures associated with athletic games and practices? and (2) do goal orientations change over the course of a competitive season as a function of the perceived team motivational climate and coaching behavior? Middle school softball athletes (N=127) were assessed on early- and late-season goal orientations (TEOSQ), pre-game and pre-practice goal involvement (GISQ) and state anxiety (CSAI-2), and motivational climate (PMCSQ-2). The CBAS was used to assess coaching behaviors. A Team X Reward Structure (game-practice) MANOVA used to examine goal involvement and state anxiety, revealed a main effect for reward structure, Wilks' Λ=.44, $F(4,96)=30.78$, $p<.01$, ES=.56. Athletes scored lower on task involvement and higher on state anxiety before games than practices. Two hierarchical multiple regression analyses were used to examine the relationship between goal orientations and motivational climate. Results revealed that mastery (β=.47) and performance (β =.21) climates contributed significantly to the explanation of late-season task scores, R=.57, $F(3,101)=16.38$, $p<.05$. Neither mastery nor performance climate, however, contributed significantly to the explanation of late-season ego scores, R=.46, $F(3,101)=15.47$, $p<.05$. Lastly, correlations and graphs of behavioral frequencies were used to examine the relationship between coaching behaviors and motivational climate. Analyses revealed a positive correlation between mastery climate and the coaching composite score and a negative relationship between performance climate and the coaching composite. Coaches who were more reinforcing, encouraging and instructing, and less punishing and outcome-oriented

coached teams who reported higher mastery team climates, whereas coaches who provided less reinforcement, instruction and encouragement, and more punishment and outcome-oriented statements coached teams who reported greater performance team climates. Investigation of individual coach's behaviors revealed that the coach who was least reinforcing and most punishing coached the team with the lowest mastery and highest performance scores. Theoretical implications and future research directions are forwarded.

ACKNOWLEDGMENTS

First and foremost, I thank the coaches and athletes who, through their participation, made this study possible. Additionally, it is with gratitude and respect that I acknowledge the patience and guidance my advisor, Diane Gill, extended to me throughout my doctoral program, particularly during the dissertation process. She encouraged me to forge ahead when I was hesitant, and cautioned me when I acted in haste. For this I am appreciative. I also offer my most sincere thankfulness to my committee members, Dan Gould, Tom Martinek, Jackie White, and Kathy Williams. Each has provided me with challenging experiences from which I have grown and developed as a researcher, teacher, and person. The time and energy they extended to me throughout my program are most gratefully acknowledged. Gratitude is also given to John Hattie who provided valuable statistical advice.

With the deepest appreciation, I recognize my fellow graduate students. First, to the CBASters, Mark Adams, Pat Bach, Dana Bridges, and Diane Guinan who unselfishly devoted their knowledge, skills, and time (time that they did not have!) to help me collect coaching behavior data. I could not have done it without them. Next, to Nicole Damarjian, Diane Guinan, Jenny Parker, and Eileen Udry who provided me with the emotional support one needs to get through a doctoral program with some semblance of sanity and a balanced perspective on life (well, as balanced as we can be!). I cannot thank them enough for being there for me. Lastly, to the UNCG graduate students whose paths I was lucky enough to cross. They made UNCG a fun and exciting place to study.

In closing, it is with great love and sincerity that I acknowledge my appreciation for my parents. Their unwavering support, encouragement, and faith in me throughout my life have enabled me to achieve many things I thought impossible.

TABLE OF CONTENTS

Page

Page

LIST OF TABLES

TABLE Page

Page

LIST OF FIGURES

FIGURE Page

CHAPTER I

INTRODUCTION

Participation in sport is pervasive in the United States. Martens (1988) estimates that over 20 million children in this country participate in organized sport. It is not surprising then that many sport psychology researchers have devoted their efforts to understanding why children choose to participate in sport. Several reserachers have investigated sport participants' motives and shown that one reason children participate in sport is to demonstrate physical competence (Gill, Gross, & Huddleston, 1983; Gould, Feltz, & Weiss, 1985; Klint & Weiss, 1986; Petlichkoff, 1992; Weiss & Petlichkoff, 1989).

Perceived competence, the belief in one's ability, is central to several motivational theories (Ames, 1984a; Deci & Ryan, 1985; Dweck, 1986; Harter, 1981; Nicholls, 1989). Harter's (1981) theory of competence motivation, Deci and Ryan's (1985) cognitive evaluation theory, and the contemporary theories of achievement motivation forwarded by Ames (1984a), Dweck (1986), and Nicholls (1989) are distinct and independent. However, all focus on how much competence or ability individuals have and how competence relates to self-perceptions and motivated behavior, and all propose that higher perceptions of competence lead to enhanced self-perceptions and motivated behavior.

Research in the physical domain has shown that positive perceptions of competence lead to feelings of success and greater task persistence (Burton & Martens, 1986),

satisfaction (Kimiecik, Allison, & Duda, 1986), future success expectancies (Roberts, Klieber, & Duda, 1981), enjoyment (Scanlan & Lewthwaite, 1986) and intrinsic motivation (Williams, 1994b). A review of the sport participation motivation literature reveals that children with low perceptions of competence drop out of or do not engage in sport, whereas those who hold a more positive view of their physical abilities continue their participation (Weiss, 1993; Weiss & Chaumeton, 1992). This literature suggests that one way to keep children involved in sport and feeling good about their participation is to create environments in which they can feel competent or able. To do this, however, we must understand what competence or ability means to participants.

The issue of how individuals construe ability differentiates contemporary achievement motivation theorists from other motivational theorists. Individuals construe ability via two goal perspectives. One involves the establishment of goals relative to one's own past performances, whereas the other involves goals based on the performance of others (Ames, 1984a; Dweck, 1986; Nicholls, 1989). Nicholls' (1989) has labeled these two goal perspectives task and ego. A task goal perspective stems from a self-referenced conception of ability. Individuals who are task-oriented are disposed to the belief that ability is demonstrated when they exert effort and experience improvement. In contrast, an ego goal perspective involves a normative view of ability. Individuals who tend to believe that demonstrating ability means outperforming others with equal or less effort are considered ego-oriented individuals. Goal orientations indicate one's proneness to task or ego involvement in a given situation (Nicholls, 1989). Goal orientation is a

dispositional construct, whereas goal involvement is more state-like and refers to the conception of ability that is being used in any given situation. Goal perspective is a term that can be used when referring to goal orientation, goal involvement or both simultaneously.

A task goal perspective fosters adaptive motivational behaviors and more favorable self-perceptions, whereas an ego goal perspective promotes more maladaptive behaviors and less favorable self-perceptions (Ames, 1984a; Dweck, 1986; Nicholls, 1989). Many researchers interested in the motivation of physical activity have adopted this goal perspective approach, and have generated substantial empirical evidence supporting the existence of dispositional goal orientations and their relationship to behaviors and self-perceptions (Duda, 1988, 1989c; Duda, Chi, & Newton, 1990; Duda, Chi, Newton, Walling, & Catley, 1994; Duda, Fox, Biddle, & Armstrong, 1992; Duda & Nicholls, 1992; Duda, Olson, & Templin, 1991; Lochbaum & Roberts, 1993; Newton & Duda, 1993b; Seifriz, Duda, & Chi, 1992; Treasure & Roberts, 1994). With this evidence, it is not surprising that theorists and researchers often recommend creating environments that promote a task goal orientation (Ames, 1984a; 1992; Burton, 1989; Duda, 1992; Dweck, 1986; Nicholls, 1989; Roberts, 1992). Despite this recommendation, research on the factors related to the development of goal orientations in sport via contextual and social influences is limited.

Research, however, has demonstrated that age-related and situational factors also influence how individuals construe ability (Ames, 1984a; Dweck, 1986; Nicholls, 1989).

Preschool and early elementary children are more task-oriented, but as children mature through elementary school they become more and more ego-oriented (Nicholls, 1989) . When children reach the age of 11 or 12 they can operate under a task or ego goal orientation. This change in goal orientations is said to be influenced by cognitive maturity and experiential factors. Supporting this contention, studies in the physical domain have found goal orientations are related to culture (Duda, 1981, 1985, 1986), gender (Duda, 1988, 1989a, 1989c; Duda, et al., 1992; Duda, et al., 1994; White & Duda, 1994b), age (Treasure & Roberts, 1994), years of sport experience (Duda, 1988), and level of sport participation (Duda, 1988; White & Duda, 1994a). The relationships among these factors in predicting changes in goal orientations remains unclear, but a review of the literature suggests that predictors of goal orientations and goal involvement will be better understood by focusing on the nature of the sport experience.

Reward structures and motivational climate provide an avenue for the examination of situational influences on goal perspectives (Ames, 1992; Ames & Archer, 1988; Seifriz, et al., 1992). Reward structures refer to the objective nature of a situation. Competitive reward structures describe situations in which value is placed on interpersonal competition and social evaluation is high, whereas the term individualistic reward structures refer to situations that promote personal improvement and effort and do not place great emphasis on social evaluation.

Ames posits, and research has supported her contentions, that competitive reward structures evoke a state of ego goal involvement, whereas individualistic reward

structures induce a state of task involvement (Ames, 1984a, 1985; Ames & Ames, 1981). This research has provided partial support for a relationship between goal involvement and reward structures. Ames (1985) found that students in situations reflecting an individualistic goal structure scored higher on task interest than students in situations representing a competitive goal structure.

Recently, Ames (1992) stressed the importance of student's appraisal of the objective goal structure operating in a given situation or context. She uses the term motivational climate to refer to individuals' perception of the operating goal structure underlying a given situation or context. These perceptions are based on group goals, the underlying reward system, interaction among group members, and individuals' interpretation of the specific social structure (Ames & Archer, 1988). The two motivational climates are mastery and performance. Individualistic reward structures typically underlie mastery-based climates. Mastery climates are characterized by effort-based goals and individuals are rewarded for the demonstration of effort, learning, and improvement. Social comparison-based goals, highlighted in competitive reward structures, are made salient in performance-based climates and individuals are rewarded for outperforming others. Over time, mastery climates foster a task goal orientation, whereas performance climates promote an ego goal orientation (Ames, 1992).

The study of reward structures and motivational climate has been conducted primarily in the academic setting. However, the physical domain is another context that can benefit from and is a compatible context for such research. For instance, the

relationship between the reward structures and goal involvement has not been investigated in the academic or sport setting. Athletic contests and team practice sessions provide an avenue for this study. Athletic contests epitomize a competitive goal structure. Specifically, athletic games emphasize interpersonal competition, and they are highly evaluative. Often the implicit standard of excellence is winning (Scanlan, 1988). In contrast, a team practice typically emphasizes the importance of effort and improvement and thus can be characterized as an individualistic goal structure. It is likely that athletes participating in athletic contests and practices are aware of the goal structure operating in each of these situations and thus employ the goal orientation most appropriate for the given situation. In game situations athletes will be more ego-involved as compared to practice situations. Conversely, athletes will be more task-involved in practice as compared to game situations. It has also been hypothesized that ego involvement induced by awareness of social evaluation is accompanied by feelings of anxiety, whereas task involvement is typically devoid of feelings of anxiety. Given the evaluative nature of game play as compared to practice, changes in state anxiety accompany the increases and decreases in ego involvement associated with games and practices. Despite the seemingly ideal context sport provides for the study of goal involvement, the relationship between goal structure and goal involvement has not received much attention in the field of sport psychology; however, situational influences on goal orientations have been studied via the construct of motivational climate.

The relationship between motivational climate and goal orientations has been examined by several researchers (Ames & Archer, 1988; Ebbeck & Becker, 1994; Seifriz, et al., 1992; Walling, Duda, & Chi, 1993). Overall, the results of these studies support a positive relationship between task goal orientation and mastery climates and between ego orientation and performance climates in the classroom and sport. However, it is unclear whether the motivational climate influences individuals' goal orientations, or if individuals' goal orientations influence their perceptions of the team's motivational climate. If the relationship between goal orientations and motivational climate is to be understood, investigation of changes in goal orientations over time is necessary, and actual measurement of the environment is needed to complement the measurement of individual perceptions.

The athletic environment for youth sport participants is created and governed by adults. Coaches are an integral part of the sport experience for adolescent and young children (Barnett, Smoll, & Smith, 1993; Horn, 1984, 1985; Smith, Smoll, & Curtis, 1979). A review of the research on coaching behaviors suggests that coaches who provide instruction and who encourage their athletes to "do their best" are more likely to create a more individualistic reward structure. Athletes, in turn, perceive their environment as more mastery-oriented which fosters a task goal orientation. Conversely, coaches who provide less instruction and promote more of a "win at all cost" attitude are more likely to create a more competitive goal structure. Athletes in this situation are

likely to perceive their situation in terms of a competitive-oriented climate. As a result athletes become more ego oriented.

In sum, goal perspective research in sport has focused on dispositional goal orientations. Research has demonstrated that individuals' goal orientations are influenced by situational and contextual factors. However, research on the state-like characteristics of goal perspective theory and goal involvement has been neglected. The nature of these influences and whether goal orientations vary across situations and contexts remains unclear. The purpose of this study is to examine the situational and contextual factors associated with goal perspectives. Specifically, this study will investigate the following questions:

(a) Do goal involvement and state anxiety vary as a function of the reward structures associated with athletic games and athletic practices? It is hypothesized that:

   i) Athletes facing a game situation will score higher in ego involvement, higher in state anxiety, and lower in task involvement than when facing a practice situation.

(b) Do goal orientations change over the course of a competitive season as a function of the perceived team motivational climate and coaching behaviors? It is hypothesized that:

   ii) Perceptions of a mastery-oriented climate will be positively related to increases in athletes' task goal orientation from early- to late-season, whereas

perceptions of a performance-oriented climate will not be related to increases in athletes' task goal orientation from early- to late-season.

iii) Perceptions of a performance-oriented climate will be positively related to increases in athletes' ego goal orientation from early- to late-season. In contrast, perceptions of a mastery-oriented climate will not be related to increases in athletes' ego goal orientation from early to late season.

iv) Greater mastery-oriented climates will be reported by athletes on teams in which the coach gives more instruction, encouragement, reinforcement and process-oriented statements, and less punishment and outcome-oriented statements.

v) Greater performance-oriented climates will be reported by athletes on teams in which the coach gives less instruction, encouragement, reinforcement and process-oriented statements, and more punishment and outcome-oriented statements.

CHAPTER II

REVIEW OF LITERATURE

Achievement goals

Contemporary achievement motivation theorists (Ames, 1984a, 1992; Dweck, 1986; Elliot & Dweck, 1988; Maehr & Nicholls, 1980; Nicholls, 1984a, 1984b; Nicholls & Miller, 1984) take a social cognitive approach and suggest that individuals in achievement situations want to maximize the demonstration of competence and minimize that of low competence. Individuals use goals to subjectively evaluate an experience as either successful or unsuccessful. Goal attainment or non-attainment influences achievement motivation because it implies the level of one's competence or ability.

Social cognitive theories concerning the role and function of goals forwarded by Ames (1984a), Dweck (1986), and Nicholls (1984a, 1984b; Maehr & Nicholls, 1980) share common viewpoints concerning the importance of ability, goal orientations, the multidimensional nature of motivation, and the relationship between goal orientations and behavior. First, this framework assumes people are intentional, rational, and goal directed. Second, the demonstration of ability or competence in achievement situations is critical to each theory. Third, two major goal orientations are identified and these orientations relate to how individuals construe ability and how they define success and failure. Fourth, goal orientations are a function of dispositional, situational, and

developmental factors. Finally, each of these theories contends that a relationship exists among goal perspectives, achievement motivation, and behavior.

Despite the commonalities among these motivation theories, subtle differences do exist. Maehr & Nicholls (1980) first proposed three categories of goals or goal orientations: ability, task, and social approval. Ability orientation is characterized by the desire to maximize high ability. Task orientation reflects the desire to produce a quality product or solve a problem for its own sake. An orientation toward social approval is characterized by the desire to demonstrate good intentions or personal commitment. Subsequent work by Nicholls (1989; Nicholls & Miller, 1984), Dweck (1986; Elliot & Dweck, 1988), and Ames (Ames, 1984b; Ames & Archer, 1988) provided consistent support for the existence of two goal orientations. Although these theorists use different nomenclature and the conceptualizations of goal orientations are slightly different, they parallel that of ability and task proposed by Maehr and Nicholls (1980). Dweck (1986; Elliot & Dweck, 1988) and Ames (1984a, 1984b, 1992) refer to performance and mastery goal orientations and contend that these constructs are bipolar. Nicholls (1989) proposes that ego and task goal orientations are independent constructs.

Nicholls' (1984a, 1989) theory of achievement motivation has served as the framework for several studies in exercise and sport psychology (Burton, 1989; Burton & Martens, 1986; Duda, 1989a, 1989b; Lochbaum & Roberts, 1993; Newton & Duda, 1993a; Seifriz, et al., 1992), and this research has demonstrated that goal orientations are orthogonal (Duda, 1989c; Duda & Nicholls, 1992; Duda, et al., 1991) Thus, his

terminology, task and ego goal orientation, will be used in this study. In addition, the theoretical underpinning concerning the situational influences on goal orientations offered by Ames (1984a, 1992) will also be used in this study.

An Achievement Goal Perspective

The goal in achievement settings is to develop or demonstrate high ability and to avoid demonstrating low ability (Ames, 1984b; Elliot & Dweck, 1988; Maehr & Nicholls, 1980; Nicholls, 1984a, 1990). When individuals believe they have achieved their goals, they experience feelings of success, conversely when they perceive that they have not attained their goals, individuals experience feelings of failure. Feelings of success and failure are not always based on objective criteria such as winning or losing. Rather, success and failure are psychological states (Maehr & Nicholls, 1980; Nicholls, 1989).

Subjective experiences of success and failure stem from how individuals define ability. Nicholls (1984a, 1989) posits that individuals can construe ability or competence in at least two different ways: in a less differentiated or in a more differentiated manner. These two conceptions of ability are critical to the understanding of Nicholls' (1989) goal perspective theory. Individuals' goal perspectives are based on their conception of ability.

In the less differentiated conception, degree of ability and task difficulty are judged in relation to one's own personal mastery. That is, task difficulty and ability are self-referenced. For individuals operating under a less differentiated conception of ability,

learning and improving are sufficient for perceptions of competence and feelings of success. Thus, perceived competence can be inferred from mastering a task that required great effort.

In the more differentiated conception, ability and task difficulty are judged in reference to the ability of others. In this case, task difficulty and ability are norm-referenced. For individuals operating under a more differentiated conception of ability, competence is perceived and feelings of success are experienced by giving above average performances. The boundaries of individual ability or capacity are inferred via social comparison. For those operating under a more differentiated conception of ability, the more effort required to learn or achieve an objective goal, compared to others, results in the demonstration of low ability. Whether individuals seek to demonstrate ability in the less or more differentiated sense is influenced by developmental, dispositional, and situational factors.

Developmentally, an individual's conception of ability is related to the understanding of the relationship between task difficulty, effort, and ability. From his work in academia, Nicholls (1978, 1984b; Nicholls & Miller, 1983, 1984) contends that individuals' ability to differentiate between these three constructs change with cognitive maturity and social learning.

Very young children construe ability in a self-referenced manner where effort is seen as ability. For these children, the difficulty of a task is based on one's expectations of

success and outcome, or the amount of effort one exerts is seen as ability. That is, children who try harder are more able, or the child who won is said to have tried harder.

Around the age of 8 or 9 years, task difficulty is defined in relation to how many people can do it. In other words, children begin to use a normative reference to determine task difficulty. At this time, children begin to partially differentiate effort and ability. Children understand that if an individual does not exert much effort to succeed at a task, she must be more skilled. Despite their ability to partially differentiate effort from ability, children do not consistently use this type of reasoning.

It is not until a child is around 11 or 12 years old that ability and effort are completely differentiated. At this juncture, ability is seen as capacity relative to that of others. Children at this age understand that when two players perform equally well on a task, the player who exerts the least effort is the most able. The demonstration of ability or inability depends on one's ability that cannot be readily changed.

Once ability is understood as capacity, individuals are capable of using either the less differentiated or the more differentiated conception of ability. The conception under which individuals operate is, in part, a function of dispositional factors. People who tend to use the less differentiated conception prefer to demonstrate ability via learning or mastery and are inclined toward a task goal orientation. They tend to set self-referenced goals that focus on learning and improving and they believe that such goals will lead to greater mastery and higher ability. In contrast, people who are prone to a more differentiated conception believe ability limits the effect of effort. These individuals

prefer to demonstrate ability by performing well relative to others and are disposed to an ego orientation. They tend to be ego-oriented in that they set norm-referenced goals that focus on performing similarly or better than others.

The differentiated conception of ability held by ego-oriented individuals mandates that only one person can be the best and half of the people in a group can be above average. Thus, those who do not believe they are in the 50th percentile are apt to give up or stop trying in the face of failure and will chose either simple or very difficult tasks (Nicholls & Miller, 1984). Conversely, the undifferentiated conception of ability held by task-oriented individuals allows an unlimited number of people in a group to demonstrate ability (Duda, 1992; Nicholls, 1989; Nicholls & Miller, 1984). Thus, task-oriented individuals' feelings of competence are not constrained by the performances of others, and they are more likely than ego-oriented individuals to persist in difficult situations (Nicholls, 1989; Nicholls & Miller, 1984). These relationships among goal orientation, perceived ability, and motivated behavior underscore the importance of fostering a task goal orientation in children involved in achievement settings (Duda, 1992; Dweck, 1986; Nicholls, 1989).

Most of the goal orientation research has come from academic classroom settings. However, research in the physical domain has extended these findings to the achievement context of sport. Sport-based research has demonstrated that goal orientations also exist in sport contexts and the findings are congruent with classroom-based research.

Goal Orientations in Sport

In the 1980's several studies examined the construct of success among preadolescents, adolescents, and young adult sport participants (Burton, 1989; Duda, 1981, 1985, 1986, Kimiecik, et al., 1986; Roberts & Duda, 1984; Spink & Roberts, 1980). This research indicates that (a) educational, recreational, intramural, and competitive athletes set task and ego goals, and (b) perceptions of success and failure are related to perceptions of demonstrated ability. For example, in an attempt to understand the relationship between perceptions of success/failure (satisfaction) and game outcome, Spink and Roberts (1980) assessed performance of undergraduate racquetball students following competitive play that determined an objective winner. They identified four categories of players: satisfied winners, satisfied losers, unsatisfied winners, and unsatisfied losers, thus illustrating that perceptions of success and failure were not synonymous with winning and losing. Extending this work, Roberts and Duda (1984) and Kimiecik et al. (1986) examined the role of perceived competence, and feelings of success and failure in college-aged and preadolescent-aged athletes and found that feelings of success (satisfaction) increased with perceptions of ability. That is, perceived ability is a better predictor of perceived success than is objective outcome. These studies laid the foundation for the study of goal orientations in sport.

In her earlier work, Duda (1981, 1985, 1986) examined how individuals construe ability or, more specifically, how people defined success. Her work supports the existence of task and ego goal orientations in sport. Taking a phenomenological

approach, high school students were asked to describe a successful sport experience (Duda, 1986). She replicated work by Maehr and Nicholls (1980) and found support for the existence of task, ego, and social goal orientations. Social goal orientations reflected the belief that success was related to gaining social approval or enhancing social relationships. However, Duda (1986), concluded that "opinions of others or their friendship may be a salient part of the sport experience but not directly linked to perceptions of goal accomplishment" (pp. 219-220). Using both Likert-type questionnaires and open-ended questions to ascertain how high school athletes define success and failure. Duda (1985) again found support for both task and ego goal orientations.

Researchers (Duda, 1989a, 1989c; Duda, et al., 1992; Duda & Hom, 1993; Duda, et al., 1991; Lochbaum & Roberts, 1993; Newton & Duda, 1993b; Seifriz, et al., 1992; Treasure & Roberts, 1994; White, Duda, & Keller, 1993) currently rely upon specific inventories to assess individuals' goal orientations, including the Task and Ego Orientation in Sport Questionnaire (Duda, 1992) and Perception of Sport Questionnaire (Treasure & Roberts, 1994). Using these measures, research has shown that individuals do adopt particular goal perspectives and vary in the degree to which they identify with task and ego goal orientation. Moreover, this research supports Nicholls' contentions that individuals high in ego goal orientation believe they are good athletes when they outperform or perform as well as others while exerting less effort, whereas individuals

high in task goal orientation believe they are good athletes when they work hard, learn, and improve.

The aforementioned research also examined the relationships among goal perspectives, self-perceptions, and behavior. Collectively, these studies found that positive perceptions and behaviors are associated with task orientation, whereas more negative associations are affiliated with ego goal orientation. Specifically, task goal orientation is positively related to effort (Duda, 1988; Duda, et al., 1990) persistence (Duda, 1988, 1989c), satisfaction (Duda, et al., 1992), intrinsic motivation (Duda, et al., 1990; Duda, et al., 1994 ; Seifriz, et al., 1992), perceived competence (Duda & Nicholls, 1992; Seifriz, et al., 1992), and the belief that success in sport is a function of trying hard and cooperating (Duda, 1989a, 1989c; Treasure & Roberts, 1994). Conversely, ego goal orientation is associated with the belief that external factors (e.g., proper dress, gain favor with coach) and innate talent are major causes of success (Duda, et al., 1992), work avoidance and the use of deceptive tactics (Duda, et al., 1992), legitimacy of injurious acts (Duda, et al., 1991), and trait anxiety (Newton & Duda, 1992, 1993b). Lochbaum and Roberts (1993) recently concluded that task-oriented athletes endorse effort and persistence as a means to success, whereas ego-oriented athletes cite chance and social approval as contributors to success. In sum, the results of these studies support the contention that task goal orientation is associated with adaptive self-perceptions and motivated behaviors, whereas ego goal orientation is affiliated with more maladaptive perceptions and behaviors.

Given the psychological and behavioral patterns associated with goal orientations, it is not surprising that researchers recommend the promotion of task goal orientation (Ames, 1984a, 1992; Burton, 1989; Duda, 1992; Dweck, 1986; Nicholls, 1989; Roberts, 1992). Despite this continued recommendation, information on how to foster task goal orientation is not forthcoming. One possible reason for this omission is the lack of knowledge concerning the determinants of goal orientations.

Determinants of Goal Orientations

People come to understand the world through personal experiences. They enter situations with a set of goals (goal orientations) characterized by their views of the world which are derived from past experiences (Kenyon & McPherson, 1974; Maehr, 1984; Maehr & Nicholls, 1980). Individual experiences are, in part, represented by such individual variables as age, cognitive maturity, culture, and gender (Coakley, 1987; Duda & Allison, 1990; Eccles & Harrold, 1991; Nicholls, 1989). Research in the sport context has shown that individuals' goal orientations are related to these variables and to the number of years of sport involvement and competitive level (Duda, 1981, 1985, 1986, 1988, 1989a, 1989c; Duda, et al., 1992; Duda, et al., 1994; White & Duda, 1994a). This research is reviewed below.

To date, a small number of goal perspective studies have considered possible age differences among youth and adolescents involved in sport and have failed to support age differences directly (Treasure & Roberts, 1994; Williams, 1994a, 1994b). When examining goal orientations and beliefs about success of 330 British students across three

different school years, Treasure and Roberts (1994) found a general pattern of goal orientations across age groups. Older children (M ages 13.4 and 15.3) found normative success (ego goal orientation) to be a more important source of sport satisfaction than younger children (M age = 11.3). Although age differences were not tested directly, the authors suggest that their findings are consistent with research that supports that the changes in goal orientations are more a function of the ego-involving nature of sport during adolescence rather than cognitive maturity.

The studies by Treasure and Roberts (1994) and Williams (1994a, 1994b) were not specifically designed to test Nicholls' contentions concerning the relationship between cognitive maturity and goal orientations. There are two reasons the results of these studies cannot be used to draw conclusions about the developmental nature of goal orientations (Maehr & Braskamp, 1986; Nicholls, 1989; Nicholls & Miller, 1984; Veroff. 1969). First, age was the sole measure of development. The development of individual ability and self-perception is a function of both cognitive maturation and life experiences (socialization). Second, given the age of the children in these studies, it is reasonable to assume that most would conceive ability as capacity. At this stage, socialization factors may be more salient than cognitive development (Maehr & Nicholls, 1980; Nicholls, 1984b, 1989).

Using an interactionist framework, Maehr and Nicholls (Maehr, 1984; Maehr & Nicholls, 1980, 1989) note the importance of situational determinants (socialization) of goal orientation. Maehr (1984) contends that perceptions of success and failure vary

between social groups. His work in the academic setting has focused on group or social influences in the form of culture and gender. Research in the sport setting has also supported cultural (Duda, 1981, 1985, 1986) and gender differences in goal orientations (Duda, 1988, 1989a, 1989c; Duda, et al., 1992; Duda, et al., 1994; White & Duda, 1994a).

Duda (1981, 1985, 1986) investigated the universality of goal orientations by sampling African-, Anglo- and Mexican-Americans living in the United States. She (Duda, 1985) examined cultural differences between Anglo and Mexican-American athletes using open-ended questions to assess high school athletes' definitions of success and failure, a forced-choice format to determine their preferences for ability or effort antecedents of success or failure, and a Likert-type scale to ascertain individuals' preferences for task or ego goal orientations. The results indicated that Anglo males preferred to be an athlete who was successful in sport because of his ability and who fails because of a lack of effort. Females and Mexican-American males were more likely to emphasize effort-based success over that of ability. Interestingly, no cultural differences were found in goal orientations.

In a follow-up study, Duda (1986) asked White, Black, and Hispanic athletes to think of a time when they felt successful in sport and to describe that success. Results indicated that White males were the most ego-oriented followed by Black females. In contrast, White females, Black males and Hispanic males and females tended to be more

task-oriented. Collectively, these studies support the contention that goal orientations vary with cultural social groups and provide evidence of gender differences.

Research investigating gender differences has produced equivocal results. A number of studies have found that males are generally more ego-oriented than females, whereas females are typically more task-oriented than males (Duda, 1985, 1988, 1989a, 1989c; Duda, et al., 1994; Duda, et al., 1992; White & Duda, 1994a). It is important to note that other goal perspective research has failed to support differences between the sexes (Duda, et al., 1994; Duda & Hom, 1993; White, et al., 1993; Williams, 1994a, 1994b).

There are no apparent systematic differences between the studies that might contribute the discrepant gender findings discussed above. Most studies, excluding two of Duda's (1988, 1989a) earlier works, used the TEOSQ to measure the dispositional goal orientations. Thus, the discrepant findings concerning gender do not appear to be a function of the measures used to assess goal orientation. Additionally, subject age does appear to be a contributing factor to these discrepant gender results which have been found between studies using middle school-age children (Duda, et al., 1992; White & Duda, 1994a; Williams, 1994b), and between studies using undergraduate students (Duda, et al., 1994, two independent samples). Studies with collegiate athletes have found that collegiate male athletes were higher in ego goal orientation than females, whereas females were higher in task orientation (Duda, 1989a, 1989c), whereas White and Duda (1994) found no differences.

Overall, studies provide some support for cultural and gender influences on goal orientations, and indicate that individual preferences for particular goal orientations are associated with additional group membership factors. Teams serve as one socializing agent for individuals involved in competitive athletics (Coakley, 1993; McPherson & Brown, 1988). Sport settings are characterized by an emphasis on competitive outcomes and social comparison (Chaumeton & Duda, 1988; Scanlan, 1988; Treasure & Roberts, 1994). Nicholls' (1984a, 1984b) suggests that experience in public and evaluative situations characterized by interpersonal competition fosters an ego goal orientation. Empirical evidence in the sport psychology research has demonstrated that goal orientations are related to years of sport experience (Duda, 1988), level of sport involvement (Duda, 1989a; White & Duda, 1994a), and the emphasis teams place on winning (motivational climate).

Duda (1988) investigated the relationship between goal orientations and previous competitive involvement in a sample of 67 male and 67 female intramural basketball and volleyball players using a nonstandard questionnaire. Results of a discriminant function analysis revealed that students with differing goal orientations were distinguishable by the number of years they had participated in their sport recreationally or competitively. Specifically, students who emphasized mastery goals (task orientation) were more likely to have played their sport longer. Whether or not students had previous competitive experience in athletics was not a factor in distinguishing between individuals' goal orientations.

Two additional studies have considered the potential influence of competitive experience on goal orientations (Duda, 1989a; White & Duda, 1994a). Using a nonstandard questionnaire to assess goal orientations, Duda (1989a) categorized 871 male and female high school students into competitive level groups. Results revealed that individuals who participate in sports emphasized both mastery (task-oriented) and social comparison (ego-oriented) goals. Former sport participants and nonparticipants were more apt to prefer competitive outcome (ego orientation) over mastery (task orientation).

More recently, White and Duda (1994a) used the TEOSQ to measure goal orientations of 235 youth sport, high school, intercollegiate, and recreational sport participants. Multivariate analysis of variance (MANOVA) results revealed a main effect for sport involvement on ego goal orientation, and an interaction effect of gender and sport involvement on task goal orientation. Intercollegiate athletes were more ego-oriented than youth sport, high school and recreational athletes. She also found that male high school and recreational participants where lower in task goal orientation than female high school and recreational athletes, and male youth and intercollegiate athletes. White and Duda (1994a) cite the internal consistency of the ego goal orientation subscale among the youth sport participants (M age = 10.8) and the differences in ego goal orientations among athletes performing at different levels of competition as evidence for Nicholls' development- and situation-related predictions concerning goal orientations. However, as indicated by the research reviewed previously, factors such as years of sport participation and culture may confound these findings.

Collectively, the research reviewed suggests that experiences associated with sport affect individual goal orientations. The results of these studies beg the question, "How are goal orientations influenced via sport participation?" One avenue available to researchers interested in the socializing influences of sport on goal orientations is found in the work by Ames (1984a, 1992) on goal reward structures, motivational climate, goal orientations, and goal involvement.

Situational Influences on Goal Orientations

The predominant emphasis in achievement goal research has been on individual differences associated with dispositional goal orientations (Dweck, 1986; Nicholls, 1989, 1990). However, attention has also been given to the situational factors that influence individuals' adoption of a particular conception of ability (Ames, 1984a, 1985, 1992; Ames & Ames, 1981; Ames & Archer, 1988; Ames & Felker, 1979). Goal perspective theorists agree that individuals use different definitions of ability in different situations and that situations involving interpersonal competition are more ego-inducing, whereas less competitive situations are more task-inducing (Ames, 1984a; Dweck, 1986; Nicholls, 1989). Carol Ames (1984a) has dedicated most of her work on achievement motivation to examining the influence of specific contexts on people's definition of success. Her efforts have led to a conceptual and empirical basis for the examination of the relationship between situational influences and perspectives (goal orientations and goal involvement) in sport. The remainder of this chapter focuses on these relationships.

Goal orientation and goal involvement are distinct yet related constructs (Ames, 1984a; Nicholls, 1989). Goal orientation is a dispositional construct and refers to individuals' proneness toward a particular conception of ability. Goal involvement is more state-like and refers to the conception of ability that individuals experience in specific situations. Though individuals have a dispositional goal orientation, the conception of ability or goal involvement varies situationally. Unfortunately, it is not uncommon for researchers to measure goal orientations and then talk in terms of goal involvement. For purposes of this study, however, the distinction between goal orientation and goal involvement is critical.

Ames' (1984a) interest in achievement behavior centers around the question: What is the psychological meaning of success and failure (goal orientations) to individuals within different situations? She uses the term reward structure refer to the objective nature of a situation. She identifies three reward structures: competitive, individualistic, and cooperative. A competitive reward structure describes situations where the opportunity for one person to attain a goal is reduced when others are successful. Competitive structures tend to increase self-awareness, entice individuals to socially compare (evaluate), and induce a state of ego-involvement. Over time, a competitive reward structure fosters an ego goal orientation (Ames, 1984a; Nicholls, 1989).

Individualistic reward structures are characterized by situations where the opportunity for rewards are independent. Goal attainment is based on improvement. In contrast to competitive structures, individualistic structures focus on personal

improvement and encourage individuals to compare their current performance level with their past performances as opposed to social comparison. This type of reward structure evokes a state of task-involvement and over time promotes a task goal orientation (Ames, 1984a; Nicholls, 1989).

Cooperative reward structures involve situations of personal interdependence. Goals and the goal attainment rewards or nonattainment punishment associated with their performances are shared among group members. Ames posits that this type of reward structure promotes a moral orientation (Ames, 1984a). Given the present study's emphasis on factors influencing task and ego goal orientations, further discussion of cooperative structure is unnecessary. Thus, only competitive and individualistic reward structures will be addressed in the remainder of this study.

The effects of a particular reward structure on individuals' goal orientations are filtered through their perceptions (Ames, 1992; Maehr, 1984). Borrowing from Maehr's (1984) theory of personal investment, Ames (1992) advocates the study of the motivational climate or the subjective meaning associated with a situation rather than examining the objective reward structure operating in a given situation. Motivational climate, which refers to individuals' perceptions of the goal structure operating in their classroom or on their teams, is a function of group goals, underlying reward system, interaction between group members, and individual interpretation of the specific social structure (Ames & Archer, 1988). The two motivational climates are mastery and performance. A mastery-based climate reflects an individualistic reward structure and is

characterized by effort-based goals. Individuals in these situations are rewarded for the demonstration of effort, learning, and improvement. In contrast, social comparison-based goals are made salient in performance-based climates and individuals are rewarded for outperforming others. The degree of social evaluation in particular contexts is a key component to differentiating between situations that invoke a task or ego involvement and reinforce a task or ego orientation (Ames, 1984a; Nicholls, 1989).

Reward Structures and Motivational Climate in Academic Contexts

Reward structures

In her earlier work, Ames examined the relationship between reward structures and goal involvement (1985; Ames & Ames, 1981; Ames & Felker, 1979; Dweck & Elliott, 1983). Academic-based studies have demonstrated that goal involvement is influenced by the degree to which situations are designed to promote interpersonal competition and personal learning. For example, Ames and Ames (1981) examined the potential effects of individualistic and competitive structures on student self-evaluations. Children were put into one of two groups: (a) a competitive situation in which two children competing against each other were incited to win and were given social comparison information, or (b) into an individualistic situation where they worked alone, were told to do their best ,and did not receive any social comparison information. Prior to the experiment, each child established a personal performance history with preliminary trials. This was followed by performance on a similar task in the designated reward structure whereby they experienced either success or failure. Analysis of attribution statements revealed

that individuals in competitive reward structures attributed success and failure more to luck, whereas those in individualistic setting made more effort attributions. Results also indicated that past performance was not an important source of information for self-evaluation in the competitive condition. In fact, social comparison alone was the main source of self-evaluation information in competitive environments. In addition, satisfaction was dependent on past performance in individualistic settings, but not in the competitive situations. These results demonstrate that situations involving competitive and individualistic reward structures differentially affected goal involvement as measured by attribution statements, the salience of information provided by past performances, and affective responses.

In another study, Ames (1985) investigated the impact of competitive and individualistic reward structures on goal involvement and general affect. Attribution statements of fifth and sixth grade students in a competitive or in an individualistic reward structure were assessed. Results revealed that children in the competitive reward structure displayed ego involvement by making more ability attributes, whereas those who performed within the individualistic reward structure were more task-involved as they made more effort attributions. Interestingly, general affective responses were not related to reward structures. Ames suggests that the affective responses may have been masked by the global nature of the questionnaire items used in the study. She concludes that there is a link between reward structures and goal involvement as measured by causal attribution statements. The concept is supported by Nicholls (1984) who contends that

competitive situations (reward structures) increase the saliency of winning which contributes to the norm-referenced ability focus.

Collectively, classroom-based studies support the contentions that public evaluation and reward structures do influence individuals' goal involvement (Ames, 1985; Ames & Ames, 1981; Ames & Felker, 1979). Ames (1985) provides support for the hypotheses that task goal involvement is positively related to task interest and satisfaction, whereas ego involvement is negatively related to these constructs. Thus, one would expect that individuals would be more ego-involved in highly evaluative situations reflecting a more competitive structure as compared to situations that are less evaluative reflecting a more individualistic reward structure. A heightened state of ego involvement will be accompanied by lower levels of task interest, whereas a state of heightened task involvement leads to higher levels of task interest.

Extending the work of the effect of evaluation on goal involvement, Butler (1987) examined the impact of normative-based performance information on subsequent motivation. In this study, 200 Jewish Israeli students with a mean age of 11.1 years were asked to work on a puzzle task. A performance reward structure was created by telling children that the researchers were interested in "seeing how different children performed them [the puzzle task]," and normative criteria for success were given. Under these conditions, Butler (1987) hypothesized that (a) comments emphasizing performance reinforcement and goal setting, without evaluation of one's performance outcome (e.g., "You thought of quite a few ideas; maybe it is possible to think of more different ideas.").

would promote task involvement, performance grades based on normative data and general praise (e.g., "very good") would promote ego-involvement, and no feedback would promote neither a task nor an ego involved state, and (b) task interest would be higher following comments than after grades, praise, or no feedback.

Task and ego involvement were assessed using attribution statements for effort and success. Factor analysis revealed that two orthogonal constructs emerged representing task and ego involvement. Task involvement was characterized by statements that reflected individuals' desire to try hard because they were interested and wanted to improve, and by statements that attributed success to interest and effort. Ego involvement was characterized by statements that reflected individuals' desire to try hard because they wanted to do better and avoid doing worse than others. Additionally, ego involvement was denoted by statements attributing success to their ability and to the performance outcomes of others. Results also revealed that more task-involved attributions for effort were made by those who received nonevaluative reinforcement comments than those who received norm-based grades and praise. Those who received praise did make more task-involved attributions for effort than those who received grades, but the difference was not statistically significant. Analyses for attributions for success revealed that students who received comments made more task-involved and less ego-involved attributions than those who received grades or praise. Using initial interest in the task as a covariate, results revealed that interest following comments was higher than interest following praise which was higher than interest following grades. Similar

results concerning the effects of performance-contingent praise (rewards) and norm-referenced evaluation on interest (intrinsic motivation) have been supported elsewhere (Harackiewicz, Abrahams, & Wageman, 1987).

The results of Butler's (1987) study indicated that individuals in situations involving direct evaluation via praise and grades are more ego-involved and less interested in the activity than those in a reinforcement condition. Butler concludes that differences in goal involvement are a function of the social evaluation. Specifically, the greater the social evaluation, the greater the ego-involvement. Overall, these results together with the empirical findings by Ames (Ames, 1985; Ames & Ames, 1981; Ames & Felker, 1979) suggest that reward structure and the basis on which performance is evaluated are related to changes in goal involvement.

Motivational Climate

Recently, Ames (1992) has begun to place greater emphasis on motivational climate (i.e., the personal meaning individuals attach to situations characterized by a reward structure) and less emphasis on objective reward structures when considering situational influence on goal perspectives. However, only one study to date has examined motivational climate in the academic setting (Ames & Archer, 1988). In addition to the focus on motivational climate, this study is notably different from goal reward studies conducted by Ames and her colleagues (Ames, 1985; Ames & Ames, 1981) in two ways. First, this study was a nonexperimental field study. Rather than experimentally manipulating and then assessing students' perception of the underlying reward structure

(motivational climate) of a specific event or task, children responded to questions regarding their overall perceptions about a class in which they were enrolled (e.g., science, math, English, or social studies class). The authors assessed the motivational climate associated with the students' overall impression of the class (classroom motivational climate) not the motivational climate of a specific event. Assessing classroom motivational climate requires students to collapse or average across a variety of situations representing competitive and individualistic rewards structure. whereas the motivational climate associated with a specific event reflects how individuals perceive specific events that contribute to the overall classroom motivational climate. To avoid later confusion, motivational climate of a specific situation will be referred to as perceived reward structure and the classroom or team motivational climate will be referred to as motivational climate.

Second, causal attribution statements for their overall success level in their class were used to infer their conception of ability. Students evaluate their success by averaging across many situations in which they may have encountered different levels of success and failure. Attributional statements for this type of overall evaluation of success is a better indictor of dispositional goal orientation than situation-specific goal involvement. Ames and Archer (1988) investigated the effect of classroom motivational climate on students' goal orientations (their attributions for overall success in the class) by surveying 176 males and females in grades 8-11. Results revealed that students who perceived a mastery-based classroom climate cited effort as the primary reason for

success, whereas those who perceived a performance-based climate tended to make more ability attributions. Specifically, individuals who perceived an environment that emphasized mastery were more likely to define success in terms of their past performances and effort. Conversely, students who perceived a greater emphasis on performance or outcome were more apt to define success in a normative manner.

The results of this study demonstrate a positive relationship between mastery-oriented climates and task goal orientation and between performance-oriented climates and ego goal orientation. Based on the findings by Ames and Archer (1988), it is tempting to suggest that exposure to and experiences associated with particular classroom climates result in a shift in goal orientations toward the respective climate. However, the information concerning the relationships among these constructs does not provide evidence to suggest a cause-effect relationship. It is unclear whether the motivational climate influences students' goal orientations, or if students' goal orientations influence their perceptions of the classroom motivational climate.

In sum, the academic based research on reward structures, motivational climate, goal involvement, and goal orientations suggest the following:

1) Reward structures operating in a given situation are related to students' goal involvement. Specifically, situations reflecting competitive reward structures induce an ego involvement, whereas individualistic reward structures incite a state of task involvement. There is also evidence to suggest that social evaluation may further increase ego goal involvement (Butler, 1987)

2) Ego involvement is associated with negative affect whereas task involvement is related to positive affect.

3) Motivational climates are related to students goal involvement. Specifically, competitive reward structures promote ego orientation, whereas mastery-based climates foster task orientation.

The results of classroom-based research have shown that the situational context, particularly in the form of goal reward structures and motivational climate, influence goal orientations (Ames, 1985, 1987, 1988; Ames & Ames, 1981; Ames & Felker, 1979). However, situational influences as defined by competitive and individualistic reward structures are not limited to the classroom. Athletics is also a viable achievement context in which to study situational influences on individual goal orientations. The classroom and the sport setting share several features that highlight the viability of the study of reward structures and motivational climate in the physical domain (Ames, 1992). In both contexts the outcome of achievement-related activities is valued and deemed important, performance is inherently public, and achievement can be defined in terms of improvement or relative to normative standards (Ames, 1992; Roberts & Treasure, in press).

Although team practices and competitive athletic contests share some similar features, they characterize two distinct environments within the sport context. Competitive contests that place individuals' performances under public scrutiny and emphasize interpersonal competition induce an ego involvement and impede task

involvement, whereas situations that are less publicly evaluative and interpersonally competitive invoke a task-involved state and undermine ego involvement (Ames, 1984a; Ames & Ames, 1984; Nicholls, 1989).

In line with the reward structure view (Church, 1968) of competition adopted by Ames (1985, 1981), athletic events are the epitome of a competitive reward structure. Athletic contexts involve interpersonal competition in which the ultimate goal is winning by one team and excluding others from success (Church, 1968). Although sport is inherently competitive, the athletic experience is filled with specific situations that differ in the degree to which interpersonal competition and learning is emphasized. For example, practice situations are generally characterized as a time for athletes to focus on learning and improving, whereas in game play, the emphasis is on performing better than the opponent.

On an intuitive level, Church's (1968) reward-centered view of competition is appealing in that typically individuals compete to win. However, goals other than winning may be present in a competitive situation. Martens (1975, 1976; Martens, Vealey, & Burton, 1990) argues that the criteria used by Church (1968) to define competition are based on the assumption that the goal for those involved in athletic contests is to perform better than the others and that goal attainment is exclusionary and it does not allow for the personal interpretation of the situation. Martens (1975, 1976) advocates a process oriented approach to competition. The conceptualization of sport as a competitive process provides researchers with a conceptual framework for the

investigation of the influences of reward structures and motivational climate on goal perspectives in the sport setting.

Reward Structures and Motivational Climate in Sport Contexts

The Competitive Process

Researchers interested in competitive sport have argued that consensus on the achievement goals to be attained in sport contests is difficult to achieve (Martens, 1975, 1976). It is conceivable that the goals sought in a contest may be different for each competitor (Scanlan, 1988). Thus, rather than making assumptions about the competitors' perceptions, Martens (1975, 1976, Martens et al., 1990) advocates a process-oriented approach to competition that considers four interrelated stages: (a) objective competitive situation, (b) subjective competitive situation, (a) response, and (d) consequences.

The Objective Competitive Situation

The objective competitive situation involves the social constraints and the environmental demands that define the situation as competitive. Unlike the earlier work that emphasized goal attainment, the objective competitive situation (OCS) is based on social evaluation and defined as a situation in which one's performance, in the presence of at least one person, can be evaluated in reference to a standard. Three social evaluation processes have been identified: comparative appraisal, reflected appraisal, and consultation.

First, the comparative appraisal is the process whereby individuals compare their performances with a social standard for the purpose of assessing their relative ability (Jones & Gerard, 1967). The social standard is often the performance of others. This type of appraisal does not include comparison of one's current level of performance with that of their past performances (Scanlan, 1988). Second, reflective appraisal is the process by which individuals infer their ability via the behaviors of others directed toward them. The public and evaluative nature of sport provides many opportunities for reflected appraisal. Information from others is transmitted by verbal and nonverbal, overt and covert cues (Scanlan, 1988). For example, a coach's pride or embarrassment in a child's performance, the spectators' cheers or jeers, and teammates' acceptance or rebuke all serve as forms of reflective appraisal. Lastly, consultation involves a person requesting or receiving performance evaluation from another person (Jones & Gerard, 1967). In this process, evaluation is direct and not inferred (Scanlan, 1988). A parent's verbal critique of performance, or a coach's instruction denoting strengths and weaknesses are examples of the consultation process.

The Subjective Competitive Situation

The subjective competitive situation (SCS) involves the individuals' perception of the OCS. In this stage social evaluation must be real and salient to the competitive process (Scanlan, 1988). The SCS can only be inferred. Typically, however, evaluative situations are perceived as potentially threatening (Martens et al.,, 1990; Nicholls, 1989; Scanlan, 1988). Perceptions of threat increase when social evaluation is high, success

and failure are clearly defined, and negative outcome and evaluation are possible (Scanlan, 1988).

The Response

How individuals respond to the OCS largely depends upon the SCS. For example, one athlete may perceive the OCS as nonthreating and look forward to the opportunity to compete while another perceives the same OCS as threatening and may dread the competitive opportunity. Responses to the OCS can be behavioral, physiological and psychological. One psychological response to the OCS that is well documented in the sport psychology literature is heightened state anxiety (see Martens, 1990). State anxiety refers to an existing (*right now*) negative emotional reaction characterized by feelings of apprehension or tension. Anxiety comprises both a mental and physiological component. Cognitive anxiety is characterized by mental worry and is caused by negative self-expectations or evaluation. Somatic anxiety is characterized by physiological reactions such as increase in heart rate, "butterflies," sweaty palms, and muscle tension and is caused by activation of the autonomic nervous system. Although hypothesized to be independent constructs, cognitive and somatic anxieties typically covary with increases in one being associated with increases in the other.

The Consequences

The consequences of competition are typically viewed in terms of objective outcome or success or failure and are generally thought to influence future choices concerning sport participation. This paper focuses on the OCS, SCS, and the psychological

responses, but does not investigate future choice. Thus, there will be no further discussion of competitive consequences.

To summarize, social evaluation is the primary component in the competitive process. Social evaluation must be present in the OSC and it must be a salient feature in the SCS. Under these conditions individuals can experience a variety of responses including state anxiety.

Goal Involvement in Practice and Games Situations

The conceptualization of sport as a competitive process provides researchers with a conceptual framework for the investigation of the influences of reward structures on goal perspectives. The OSC and the SCS are restatements of reward structures and motivational climates. The OSC and reward structures refer to the objective nature of the situation, whereas the SCS and motivational climate refer to individuals' interpretation of the objective situation. Situations indicative of both competitive and individualistic reward structures exist within the sport context.

Competitive contests also involve extensive social evaluation of athletic ability and competence (Scanlan, 1984). Social evaluation is appraisal information about one's ability that an individual receives from other people. Implicit and explicit evaluation during athletic events come from spectators, coaches, teammates, and opposing players. Games are in highly public and evaluative situations that can be characterized by a competitive reward structure.

Although not devoid of interpersonal competition and social evaluation, the degree to which these features are present at team practice is much less than at games. Athletes spend much of their season practicing to enhance or maintain their competitive level against other teams. Athletes may practice in the hopes of being prepared to win the next game, but practice situations generally emphasize improvement and effort. The degree of social evaluation is less in practice sessions as compared to game situations. In practice, score is not highlighted, spectators are a rarity, and coaches and teammates focus more on learning and improving as compared to game situations. In this regard practice sessions are generally more aligned with an individualistic reward structure. Athletic game and practice situations meet the objective criteria differentiating competitive and individualistic reward structures, respectively.

Ames (1984a) and Nicholls (1989) emphasize the role of interpersonal competition and social evaluation in goal involvement. They have hypothesized and empirical research confirms that situations involving interpersonal competition and public evaluation incite a state of ego-involvement accompanied by a heighten state of anxiety, whereas individualistic reward structures and less evaluative situations induce a state of task involvement and are devoid of feelings of anxiety (Ames, 1985; Ames & Ames, 1981; Butler, 1987; Nicholls, 1989). Thus, individuals facing game conditions should be higher in ego involvement and state anxiety as compared to practice conditions. Conversely, individuals should be more task-involved and less state anxious in practice as opposed to game situations.

The changes and the relationship between goal involvement and state anxiety in various sport contexts have not been investigated in the sport literature. However, several researchers have found positive relationships between both competitive trait and state anxiety and ego goal orientation (Yin, Boyd, & Callaghan, 1991; Duda, Newton, & Chi, 1990; Newton & Duda, 1992, 1993b; White & Duda, 1994b). For example, Duda and Newton (1992) assessed both cognitive and somatic trait anxiety and found that cognitive anxiety alone was related to ego goal orientation.

Several studies have examined the relationship between competitive state anxiety and goal orientations (Duda, et al., 1990; Duda & Newton, 1993; Duda & White, 1994b). Duda and her colleagues (1990) assessed cognitive and somatic state anxiety using the Competitive State Anxiety Inventory (Martens, et al., 1990; CSAI-2), dispositional goal orientations with the TEOSQ, tennis competence, and success expectancy of undergraduate students involved in a competitive tennis match. Regression analyses revealed that both cognitive and somatic anxiety was significantly predicted by ego orientation. Neither cognitive nor somatic anxiety were significantly related to task goal orientation.

In a related study, Newton and Duda (1993b) examined the relationship between goal orientations and performance-related cognitions and affect. They measured dispositional goal orientations one-week prior to assessing undergraduate students' level of performance worry associated with 3 separate 10-frame bowling games. The playing of the games was couched within an individualistic reward structure. Students were told to

work hard, try to improve and have fun. Performance worry was assessed retrospectively immediately following each game. Subjects were asked to recall the mid-point of the game and respond to the survey questions. Results revealed a significant negative relationship between task goal orientation and performance worry in the second game only. Contrary to their hypotheses, performance worry was not significantly related to ego orientation.

Duda and Newton (1993b) argued that although the negative correlations between task orientation and worry across the three games were not statistically significant, the trend lends support to the notion that individuals who are predominantly task-oriented would be less likely to exhibit cognitive anxiety during physical activity because outcome is not as important as trying hard. They also speculated that failure to find a relationship between cognitive worry and ego orientation may have been due to the emphasis placed on learning and having fun rather than competition, and concluded that individuals were not worried about their performance.

The results found by Duda and Newton (1993b) and Duda et al. (1990) provide evidence for a relationship between goal orientations and cognitive anxiety. Extrapolating from these results, it is feasible to suggest that the nature of the relationship between goal orientations and state anxiety is influenced by the context in which the constructs are measured. Specifically, Duda and Newton (1993b) assessed state anxiety within a more individualistic reward structure, whereas Duda et al. (1990) measured

anxiety in a competitive reward structure. Each study revealed a different type of relationship between goal orientations and cognitive worry.

Although the studies cited above did not examine goal involvement, they do provide some evidence that cognitive worry changes across different situations and that anxiety is related to goal orientation. With this evidence and with the research on reward structures and the hypothesized relationship between goal involvement and state anxiety, it is reasonable to suggest that goal involvement and state anxiety will vary across situations characterized by competitive and individualistic reward structures.

In sum, competitive sport appears to provide sport psychology researchers with an ideal context in which to study the situational influences on goal involvement. Nevertheless, researchers in sport psychology have virtually ignored the interrelationships among reward structures, perceived reward structures, and goal involvement. Recently, however, attention has been given to the study of the overall motivation climate and its relationship to goal orientations (Roberts & Treasure, in press; Seifriz, et al., 1992; Walling, et al., 1993).

Motivational Climate and Goal Orientations in Sport

Just as reward structures and the perceptions of these reward structures as competitive and individualistic are hypothesized to predict goal involvement, situations that can be characterized as predominantly mastery or performance oriented are hypothesized to predict goal orientations (Ames, 1992; Nicholls, 1989). Several studies

have examined the relationship between motivational climate and goal orientations (Ebbeck & Becker, 1994; Seifriz, et al., 1992; Walling, et al., 1993).

Seifriz, et al. (1992) attempted to replicate and extend the work of Ames and Archer (1988) in the sport setting. For this study they developed and used the Perceived Motivational Climate in Sport Questionnaire (PMCSQ) to assess individuals' perceptions of motivational climate in sport setting (team climate). One hundred and five male varsity high school basketball players were given measures that assessed team climate, intrinsic motivation, beliefs about the causes of success (attributions), and goal orientations. The results of this study support those found by Ames and Archer (1988). Specifically, individuals who perceived their team as more mastery-based felt all players have an important role on the team and that their coaches emphasized improvement and learning, rewarded effort, encouraged their players, and allowed most athletes play in games. In contrast, those who perceived a more performance-based climate felt that outplaying teammates was important, players were punished for mistakes, and that the coach favored the "star" players. Results also revealed that athletes who perceived a mastery-based climate made more effort-based attributions and enjoyed playing more than those who perceived a performance-based climate. Conversely, athletes who perceived a performance orientation tended to make more ability attributions and did not enjoy themselves as much as those who perceived a more mastery climate. Lastly, the results of this study support a positive relationship, albeit modest, between task goal orientation and mastery climates and between ego orientation and performance climates.

A follow-up study by Walling, et al. (1993) was conducted for purposes of validating the PMCSQ. One hundred and sixty-nine young (M age = 14.2) and internationally competitive athletes completed the PMCSQ and a measure assessing performance worry and team satisfaction. The PMCSQ demonstrated both construct and predictive validity. Athletes who perceived a mastery climate reported greater team satisfaction and less performance worry than those who perceived a performance climate. In contrast, perceptions of a performance climate were negatively related to team satisfaction and positively correlated with performance worry.

Situational and social influences on goal orientations were examined by Ebbeck and Becker (1994). Perceived motivational climate, goal orientations, perceptions of their parents' goal orientations, and self-perceptions of 166 male and female soccer players ranging in age from 10 to 14 years were assessed. The authors expected that self-esteem, perceived soccer competence, perceived mastery climate, and perceived parent task orientation would positively relate to athlete task orientation. Conversely, athlete ego goal orientation was anticipated to be negatively associated with self-perceptions and positively related to perceived performance climate and parent ego goal orientation. Canonical correlation analysis revealed that perceived soccer competence and parent task and ego goal orientations were positively associated with levels of athlete ego goal orientations. Athlete task goal orientation was positively associated with perceived soccer competence, mastery climate and parent task goal orientation, and negatively associated with performance climates. The authors conclude that perceived motivational

climate was influential in predicting athlete task orientation, but not in predicting ego goal orientations.

Collectively, the results provided by Seifriz et al. (1992) and Walling et al. (1993) suggest that perceptions of a mastery climate are associated with a task goal orientation, positive affect, and the belief that success stems from hard work, whereas perceptions of a performance climate are related to ego orientation, more negative affective responses, and the belief that ability leads to success. Results of Ebbeck and Becker's (1994) study provide support for the relationship between mastery climates and task goal orientation. It is tempting to suggest that these results provide evidence that participation on teams that emphasize a mastery climate fosters a task goal orientation, while exposure to a performance-oriented climate promotes an ego goal orientation. However, the results of these studies are correlational in nature and do not provide evidence to suggest a cause-effect relationship. Thus, it remains unclear whether the motivational climate serves to influence athletes' goal orientations, or if athletes' goal orientations influence their perceptions of the team's motivational climate. To better understand the impact of contextual factors such as perceived motivational climate on goal orientations, measures of these constructs need to be taken over time. For example, goal orientations, as a function of a team's motivational climate, could conceivably change over the course of a competitive season. One would expect that perceptions of a mastery-oriented climate would result in increases in task goal orientation scores from pre- to post-season, whereas perceptions of a performance-orientated climate would result in increases in ego

orientation scores from pre to post season. To date, however, no studies have examined changes in goal orientations as they relate to motivational climate.

Adult Influences and Goal Orientation

Children are exposed to reward structures that are created and governed by adults: adults provide children with feedback cues, rewards, and expectations. Over time, exposure to these adult behaviors influence individuals' goal orientations (Nicholls, 1989). Two studies to date have examined the socializing effect of adults (parents) on goal orientations adopted by young athletes (Duda & Hom, 1993; Ebbeck & Becker, 1994). Duda and Hom (1993) examined the interrelationships between athletes' and their parent's personal and perceived goal orientations. Boys and girls ranging in age from 8 to 15 years and one of their parents responded to two versions of the TEOSQ. Athletes responded to questions that assessed their personal goal orientation and their perception of their parent's goal orientation. The respective parent of the athlete also responded to questions assessing their personal goal orientations and their perceptions of their child-athlete goal orientations. Pearson-product correlations indicated that overall neither the children nor their parents were very good estimators of the other's goal orientations. However, children who were high in ego goal orientation perceived their parents to be high in ego orientation as well. In addition, athlete's task orientation scores were also significantly related to their perceptions of their parent goal task orientations. The authors of the study concluded that "parents appear to play a role as a socializing agent in terms of children's goal perspectives" (Duda & Hom, 1993, p. 238). This conclusion is

based on the assumption that a parent's goal orientation has some causal influence on the child's goal orientation. However, if this were the case, significant correlations between athletes' and their parent's personal goal orientations and among subject's personal and their perception of their parent's task and ego goal orientations would have been found. Thus, rather than demonstrating a socializing influence, it appears that children simply believe that they and their parent perceive athletic success similarly.

Ebbeck and Becker (1994) also examined the relationship between young (10 - 14 years of age) athletes' goal orientations and their perceptions of one of their parent's goal orientations. They conducted a canonical correlation to examine the relationship between several variables including perceived parent task and ego goal orientations and athlete task and ego orientation as the criterion variables. The strongest predictors for athletes' ego and task goal orientation were their perceptions of their parent's ego and task goal orientations, respectively. Interestingly, perceived parent task orientation also served to predict athletes ego orientation. Overall, these results support those by Duda and Hom (1993).

The results of these studies indicate that assessing individuals' perception of their parental goal orientation may be inadequate to determine socializing influences on goal orientations. There is little doubt that children are exposed to reward structures created and governed by adults, that these structures influence a child's self-evaluation and attributional processes, and that the cues and feedback given by significant others play an important role in influencing the goal orientations of children and adolescents (Ames,

1987, 1992; Duda, 1992; Nicholls, 1989; Roberts, 1992; Roberts & Treasure, in press). However, how adults may influence children's goal orientations remains unclear.

Sport socialization and teacher-expectancy literature has confirmed the importance of parents, peers, teachers and coaches in an athletes' life (Coakley, 1987, 1993; Greendorfer, 1977; Greendorfer & Ewing, 1981; Martinek, 1988). A study by Greendorfer (1977) examining socialization influences found that the family is a strong socializing force during childhood, peers were important during childhood, adolescence, and young adulthood, and coaches were most significant during adolescence. Other research shows that coaches also have an impact on young athletes' perceptions of their sport experiences (Barnett, et al., 1993; Horn, 1985; Smith, et al., 1979; Smoll & Smith, 1980). Although this research has not addressed goal orientations, it does provide evidence that coaches do have a substantial influence on their athletes' self-perceptions.

The Coach as a Socializing Influence on Goal Orientations

In a classic study, Smith et al. (1979) observed 18 youth sport coaches who had attended a Coaching Effectiveness Training (CET) session that "stressed the desirability of reinforcement, encouragement, and technical instruction designed to elicit and strengthen desirable behaviors" (p. 62) and 16 coaches who had not attended this training session. During the season, trained observers coded coaching behaviors using a systematic observational tool called the Coaching Behavioral Assessment System (CBAS). The CBAS assesses overt coaching behaviors including reaction to desirable performance, mistakes, athlete conduct, game-related issues, and communications with

athletes that are not related to game-play. At the end of the competitive season, athletes ranging in age from 10 to 15 years were interviewed and their attitudes about their coach and sport experience were assessed. Overall, the results revealed that coaches who reacted to desirable performance by giving more instruction and encouragement, and who engaged more in organizational behaviors were rated more positively by their athletes than were coaches who were viewed by their athletes to react to mistakes in a punitive manner. There were also significant correlations between positive evaluation of the coach and self-esteem, enjoyment, and desire to play in the future. Specifically, athletes coached by those involved in the CET sessions, as compared to those who had untrained coaches, scored higher on self-esteem and enjoyment and reported a greater desire to play for their coach in the future.

In a follow-up study using pre-post tests assessments, Barnett, Smoll, and Smith (1993) found that youth sport athletes (ages 10 to 12 years) who were coached by CET trained adults were less likely to drop out of sport than athletes coached by untrained adults. The CET program advocates a positive approach to coaching and stresses "doing your best" attitude (mastery climate) as opposed to a "win at all cost" (performance climate) attitude. Thus, it appears that a positive approach in coaching feedback leads to adaptive behavior and positive self-perceptions. Specifically, the results of these studies indicate that coaches who stress a mastery-based climate, by focusing on mistake-contingent instruction and encouragement to do one's best, will have a positive impact on athletes' self-perceptions and desire to continue their sport participation.

Horn (1985) also examined the relationship between coaches' observed behaviors and changes in female athletes' perceptions of competence, control, and their expectancy for success over an athletic season. Results revealed that changes in athletes' perceptions of competence were related to their coaches' practice, but not game, behavior. That is, coaches behaviors during practices appear to be the most salient indicator of athletes' perceived ability. In contrast to the results provided by Smith, Smoll, and colleagues (Smith, et al., 1979; Smoll & Smith, 1980), coaches' responses to successful performance in the form of reinforcement were negatively associated with athletes' perceptions of competence, whereas coach criticism was positively related to perceived competence. Horn suggests that these results may reflect the appropriateness of the coach behaviors. Specifically, the coaches in this study may have developed a behavioral pattern of reinforcing average performance of athletes they believed were lower in ability and criticizing average performances of athletes they believed were high in ability. Thus, instruction came in the form of criticism as opposed to reinforcement.

Coaching behaviors can have a powerful influence on athletes' self-perceptions. The coach is an integral part of the team's structure and typically plays a substantial role in determining team goals and administering goal rewards. Synthesizing literature on team climate and coaching behavior, coaches who emphasize instruction and encourage athletes to do their best are likely to create a team climate that promotes a task goal orientation. That is, coaches who are instructive send the message to their athletes that learning, personal improvement, and effort is valued. It is important to note that this

instruction does not have to be accompanied with encouragement or expressed in an encouraging manner. It appears that the importance a coach places on instruction can be inferred when corrective and mistake-contingent information is given in a punitive or critical manner.

In addition to the use of instruction and encouragement reinforcement and punishment, other, more specific forms of feedback, may relate to motivational climate. Although the CBAS is not designed to assess the degree to which coaches emphasize skill mastery and outperforming others, a modified version has been used to investigate these types of coaching behaviors (Chaumeton & Duda; 1988). Chaumeton and Duda (1998) suggested that coaches focusing on skill mastery or the processes of the performance provide more task-involved reinforcement and punishment, whereas coaches focusing on performance outcome give more reinforcement and punishment that is ego-involved. To investigate these forms of coaching behaviors they created four subcategories: (a) reinforcement for desirable outcomes (e.g., favorable reaction for hitting a homerun), (b) reinforcement for desirable processes including effort (e.g., favorable reaction for trying to perfect one's batting form), (c) punishment for undesirable outcomes (e.g., negative reaction for missing a fly ball), and (d) punishment for undesirable processes and effort (e.g., negative reaction for not using the two hands to field a ball). Thus, with the emphasis on skill mastery, task-involving reinforcement should promote a mastery-oriented climate, whereas ego involving reinforcement is likely to nurture a performance-oriented climate.

It is logical that coaches who are successful in creating and promoting a mastery-based climate by stressing learning over outcome, will provide students with an environment that promotes a task goal orientation. However, to be influenced by their environment, athletes must perceive and interpret the existing reward structure underlying their team's motivation. That is, the effects of a particular reward structure on individuals' goal orientations are filtered through their perceptions (Ames, 1992; Maehr, 1984). Thus, the motivational climate that individuals perceive may or may not be congruent with the actual goal reward structure in operation. Assessment of coach behaviors appears to be a viable measure of the overall goal reward structure. In addition, it is of interest to determine if coaching behaviors have an influence on athletes' perceptions of their team's motivational climate.

In sum, the research on motivational climate in sport suggests that athletes who perceive a mastery-based team climate will, over time, become more task-oriented, whereas those who perceive a performance-based team climate will, over time, become more ego oriented. Through their interaction with their athletes over the course of a competitive season, youth sport coaches establish their team's reward structure thereby influencing the team climate and influencing young athletes' self-perceptions. It is reasonable that athletes' task goal orientation will increase with the increasing number of coaching behaviors that stress instruction. Conversely, athletes' ego goal orientation will increase with the increasing number of coaching behaviors that stress outcome over

instruction. At present, however, no study has examined the relationship between coach behavior, team climate, and goal orientation.

To date, studies examining goal involvement have either focused on public evaluation or goal reward structures (Ames, 1985; Ames & Ames, 1981; Butler, 1987). However, the conditions used to denote level of public evaluation and type of goal reward structures are confounded. Although the conclusions drawn by the respective authors claim that either evaluation or the reward structure served to induce ego or task involvement, it would be more accurate to state that the conditions of evaluation and reward structure together influenced goal involvement.

Purpose and Hypotheses

Research has demonstrated that individuals' goal perspectives are related to situational and contextual factors. However, the relationships among these factors in predicting changes in individuals' goal perspectives remains unclear. It is suggested that predictors of goal orientations and goal involvement will be better understood by examining the nature of the sport experience. For example, specific sport situations such as game versus practices are thought to influence individuals' state-like goal involvement. Additionally, exposure to a given environment over time is thought to influence individuals' goal orientation. Specifically, coaching behaviors help to create the motivational climates perceived by athletes. Perceptions of a particular motivational climate over time may influence athletes' goal orientations. The purpose of this paper is

to examine the situational and contextual factors associated with goal perspectives. Specifically, this paper will investigate the following questions:

(a) Does goal involvement vary as a function of the reward structures associated with athletic games and athletic practices? It is hypothesized that:

i) Athletes facing a game situation will score higher in ego involvement, higher in state anxiety, and lower in task involvement than when facing a practice situation.

(b) Do goal orientations and state anxiety change over the course of a competitive season as a function of the perceived team motivational climate and coaching behaviors? It is hypothesized that:

ii) Perceptions of a mastery-oriented climate will be positively related to increases in athletes' task goal orientation from early to late season, whereas perceptions of a performance-oriented climate will not be related to increases in athletes' task goal orientation from early to late season.

iii) Perceptions of a performance-oriented climate will be positively related to increases in athletes' ego goal orientation from early to late season. In contrast, perceptions of a mastery-oriented climate will not be related to increases in athletes' ego goal orientation from early to late season.

iv) Greater mastery-oriented climates will be reported by athletes on teams in which the coach gives more instruction, encouragement, reinforcement and

process-oriented statements, and less punishment and outcome-oriented statements.

v) Greater performance-oriented climates will be reported by athletes on teams in which the coach gives less instruction, encouragement, reinforcement and process-oriented statements, and more punishment and outcome-oriented statements.

CHAPTER III

METHODOLOGY

Subjects

In the Guilford County School system ten middle schools offered softball as an extracurricular activity. Nine (3 male and 6 female) head coaches agreed to participate in the study. All coaches were school-employed teachers. Additionally, 145 female softball athletes. were invited to participate in this study of which 127 (88%) returned signed consent forms. Of these 127, approximately 76% (N = 96) were present at all four data (survey) collection sessions, approximately 94% (N = 119) were in attendance for 3 collection sessions, and approximately 97% (N = 123) attended 2 data collection sessions. Table 1 presents a summary of the breakdown of athlete participation by school.

Every athlete participating in the study who was present for softball on a given data collection day completed her survey. Athlete absences from data collection session were typically a result of the students' absence from school or due to their participation in track. Only one athlete is known to have discontinued her participation during the season. This occurred between the 3rd and 4th data collection sessions; thus her scores were retained for purposes of testing potential pre-practice and pre-game differences.

The majority of athletes in this study were of European-American decent (N = 103). Thirteen African-Americans and one Asian-American participated in this study. Athletes ranged in age from 12 to 15 (M = 13.13; SD = .79) years and were in the seventh (N = 43) or eighth grade (N = 73). At these grade levels it was expected and confirmed that

Table 1. Breakdown of Athlete Participation by School

	Schools									
	1	2	3	4	5	6	7	8	9	Tot.
Introductory mtg.	17	14	18	15	16	17	16	17	15	145
Consenting athletes	17	14	13	15	11	14	15	17	11	127
Missed pre-practice assessment only	0	3	0	1	3	2	1	1	1	12
Missed pre-game assessment only	0	3	0	0	0	0	0	0	0	3
Missed pre-practice & game assessment	1	2	1	0	0	0	0	0	0	4
# of athletes who have both early & late season data	16	6	12	14	8	12	14	16	10	108
Missed early season assessment only	0	0	0	3	0	1	0	0	0	5
Missed late season assessment only	2	1	2	3	2	1	0	1	1	13
Missed early & late season assessment	0	1	0	0	0	1	0	0	0	1
# of athletes with both pre-practice & game data	15	12	11	9	9	11	15	16	10	108

athletes have varied softball experiences, and have limited exposure, no more than one year, to their coach's goal orientation and coaching style (see Table 2). Use of these subjects minimizes possible coach influences on athletes' goal orientations from previous seasons. That is, it is conceivable that goal orientation of athletes and coaches who have spent 2-4 seasons together may be more similar than those who have zero or 1 year of shared sport experience.

The majority of athletes in this study (91.7%) had been playing community softball for 1 to 10 years (M = 4.70; SD = .24). They reported spending approximately 3 hours a week (M = 2.92; SD = .20) practicing softball in their free time. Over 95% of the athletes perceived themselves as successful and 88% perceived their teams as successful.

Measures

Athletes in this nonexperimental field study completed a number of questionnaires over the course of their competitive season. The questionnaires were designed to assess the subject's (a) early and late season background information, (b) goal orientations, (c) goal involvement prior to a game and a practice situation, (d) state anxiety, and (e) overall motivational climate. In addition, a systematic observational tool, the Coaching Behavior Assessment System (CBAS) was used to record coaching behaviors.

Background

A questionnaire focusing on athletes' background was designed for this study. This measure included questions concerning subjects' age, race/ethnicity, years of sport experience, level of competitive play and amount of time they spent practicing softball in

Table 2. Total Number of Subjects by Years of Experience and Previous Experience with Coach.

Total Years of Softball, Baseball, T-ball Experience						Previous Experience with Coach		
None	1-2	3-4	5-6	7-8	9-10	None	1 Year	2 Years
N = 12	N = 14	N = 31	N = 34	N = 23	N = 7	N = 84	N = 35	N = 2

their free time. All questions have been shown to be related to goal orientations (Duda, 1988; 1989; Treasure & Roberts, 1994; White & Duda, 1994a). A copy of this questionnaire is located in Appendix A. A late season information questionnaire assessed athletes' feelings of personal and team season success. A copy of this questionnaire is in Appendix B.

Goal Orientations

The Task and Ego Goal Orientation in Sport Questionnaire (TEOSQ, Duda 1992) was used to assess early season and late season goal orientations. A copy of this questionnaire is located in Appendix C. The TEOSQ is a modified, sport-specific version of Nicholls' (1989) Motivation Orientation Scale that measures task and ego goal orientations in classroom settings. The TEOSQ is designed to assess the degree to which individuals identify with task and ego goal orientations.

In completing the 13-item questionnaire, athletes were asked to think of a time when they were most successful in sport and respond to stem phrases that represent either a

task or ego goal orientation. Seven items reflect task orientations (e.g., "I feel most successful in softball when I work really hard.) and six items reflect ego orientation (e.g., "I feel most successful in softball when I am the only one who can do the play or skill). Athletes indicated the degree to which they agree or disagree with each phrase on a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The TEOSQ has been used extensively in the sport psychology literature and has been found to be both valid and reliable (Duda, 1992). Factor analysis results have revealed a two-factor solution with the two subscales, task and ego orientations, being orthogonal. Internal consistency reports on both task and ego goal orientation range from .81 - .86 with children (aged 10-12) and .79 - .90 with adults.

Both scales have revealed adequate test-retest reliability after a three-week time period with correlations of .68 and .75 from children and adults, respectively, and neither correlate with social desirability measures. Concurrent validity of TEOSQ has been demonstrated with correlations of .67 and .62 with task and ego (respectively) subscales on Nicholls' (1989) Motivation Orientation Scale. Conceptual distinction between task and ego orientations and other constructs in achievement motivation literature has also been demonstrated. As expected correlational testing has also shown that task and ego orientations are moderately related, but not equivalent to the win, competitiveness, and goal orientations as measured by the Sport Orientation Questionnaire (Gill & Deeter, 1988) and the competitive orientations of performance and winning as measured by Vealey's (1988) Competitive Orientation Inventory (Duda, 1992).

Goal Involvement

No standard questionnaire exists for the assessment of goal involvement. Given the conceptual similarities between goal involvement and goal orientations a modified version of the Task and Ego Goal Orientation in Sport Questionnaire was used to assess pre-practice and pre-game goal involvement. A copy of this questionnaire, called the Goal Involvement in Sport Questionnaire (GISQ) is located in Appendix D. For the purpose of assessing goal involvement, athletes were asked to complete the lead phrase "I will be most successful in this softball game or practice if I...." Athletes then responded to the 13 responses phrases identical to the TEOSQ. Seven items reflect task involvement (e.g., "I will be most successful in this game or practice if I work really hard.) and six items reflect ego orientation (e.g., "I will be most successful in this game or practice if I am the only one who can do the play or skill). Athletes indicated the degree to which they agree or disagree with each phrase on a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5).

The GISQ was expected to demonstrate validity and reliability similar to the TEOSQ. A small pilot test has been conducted to examine the appropriateness of the GISQ for this study and the findings are reported later in this chapter.

State Anxiety

The Competitive State Anxiety Inventory - 2 (Martens et al., 1990; CSAI-2) is a 27-item sport-specific, self-report measure that assesses multidimensional state anxiety. It consists of three subscales: (a) cognitive state anxiety, (b) somatic state anxiety, and (c)

state confidence. The CSAI-2 requires athletes to indicate the degree to which the statements describe their current emotional state on a 4-point Likert-type-type scale ranging from Not at All (1) to Very Much So (4).

In this study, the CSAI-2 was used to assess state anxiety (cognitive and somatic) prior to a game and practice situation. Thus, only the cognitive and somatic anxiety subscales were presented to the athletes. State confidence items were excluded (see Appendix E). The CSAI-2 has been found to be a reliable and valid measure of cognitive and state anxiety (Martens et al., 1990). Cronbach alpha coefficients ranging from .79 to .83 indicate adequate internal consistency for each subscale. Concurrent validity of the CSAI-2 has been demonstrated with correlations of moderate intercorrelations ranging from .37 to .62 between the CSAI-2 subscales and measures of trait anxiety, including Sport Competition Anxiety Test (SCAT, Martens et al., 1990) and Text Anxiety Inventory (TAI: Speilberger, Gorsuch, & Lushene, 1970; cited in Martens et al., 1990). Slightly higher correlations ranging from .47 to .82 have been found between the CSAI-2 and other state anxiety measures, such as the Worry-Emotionality Inventory (WEI: Morris, Davis, & Hutchings, 1981; cited in Martens et al., 1990) and the State Anxiety Inventory (SAI; Speilberger et al., 1970; cited in Martens et al., 1990).

Evidence supporting construct validity of the CSAI-2 has been provided through a series of studies. These studies have (a) supported hypothesized relationships between CSAI-2 components and individual and situational factors, (b) demonstrated changes in the CSAI-2 components as a function of competition proximity, and (c) found that the

anxiety-performance relationship is influenced by state anxiety as measured by the CSAI-2.

Motivational Climate

The Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, 1994) is a modified, sport-specific version of Ames and Archers' (1988) Classroom Achievement Goals Questionnaire. The PMCSQ-2 is a 29-item self-report questionnaire designed to assess athletes' perceptions of the degree to which their teams' motivational climate emphasizes mastery-based or performance-based goals.

The PMCSQ asks athletes to think of what it is like playing on their particular team over the course of the season. The stem phrase that precedes the items is "On this softball team..." and athletes indicate the degree to which they agree or disagree with each phrase on a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly Agree (5). A copy of this questionnaire is in Appendix F.

The use of the PMCSQ-2 has been limited in the sport psychology literature (Newton, 1994). Factor analysis results from data given by adolescents revealed six first-order factors underlying two higher order factors termed perceived mastery and performance climates correlating with an $r = -.3$ (M. L. Newton, personal communication January 31, 1994). With factor loadings exceeding .35, Mastery climate consisted of three first-order factors labeled, Cooperative Learning (7 items), Important Role (4 items), and Effort/Learning (4 items). Factors labeled Punishment for Mistakes (5 items), Unequal Recognition (6 items), and Intrateam Rivalry (3 items) represent Performance

climate. Together these six factors explained 57.2% of the variance. Factor correlations indicate the three performance climate factors correlate with values ranging from .15 - .24 and mastery climate factors correlate with values ranging from .31 to .32. Cronbach (1951) alpha coefficients exceeding .70 denoted adequate internal consistencies for perceived mastery and performance climates, and for 5 of the 6 second-order factors. The alpha coefficient for Intrateam Rivalry was .57. Construct validity has been found in the theoretically logical relationships that emerged between intrinsic motivation and beliefs about success. Goal orientations and motivational climate were correlated with intrinsic motivation and team satisfaction, and motivational climate served as the best predictor of enjoyment, tension, and team satisfaction. At present no studies have assessed test-retest reliability.

Coaching Behaviors

The Coaching Behavior Assessment System (CBAS) was used to record and categorize overt coaching behaviors. The CBAS is a systematic observation tool developed by Smith, Smoll and Hunt (1977) for the purpose of direct observation of coaching behaviors in athletic games and practice situations. The CBAS defines two classes of coaching behaviors: reactive and spontaneous. Reactive coaching behaviors refer to responses made by the coach in reaction to a players' action or performance. Reactive behaviors are categorized into eight responses pertaining to desirable performances, mistakes or errors made by a player, or the misbehavior of an athlete. Spontaneous coaching behaviors refer to behaviors initiated from the coach and are not in

response to any specific player(s) behavior or action. Spontaneous behaviors are subdivided into four responses and pertain to coaching behaviors that are game-related and game-irrelevant. The two classes of coaching behaviors and their subcategories are outlined and described in Table 3.

The CBAS coding system has demonstrated adequate reliability and accuracy in coding of coaching behaviors. A series of studies was conducted to assess the reliability of the CBAS coding system and to evaluate the effectiveness of the CBAS training program (Smith et al., 1977). Individuals trained with the CBAS training manual and coded behavior from the CBAS Audio Visual Training Module demonstrated scoring accuracy with errors ranging from 0 to 5 with a means of 1.06 errors per observer. Intercoder reliability among the trainees was 97.8%. Intracoder reliability over one week ranged from 87.5 to 100% with a mean intracoder reliability score of 96.4%. Intercoder reliability in field settings reveals correlation coefficients ranging from .77 to .99 in one sample with a mean of .88 and from .63 to .98 with a mean reliability coefficient of .86 in second independent sample.

For purposes specific to this study, two components were added to differentiate between coaching behaviors that explicitly refer to the learning process and those that make reference to the outcome. This modification is based on research that suggests that feedback focusing on the learning process is task-involved, whereas information emphasizing performance outcome is ego-involved (Chaumeton & Duda, 1988). Task-involved feedback that denotes individual learning, improvement, and effort (e.g., "That's

Table 3. Categorization and Descriptions of 12 Coaching Behaviors.

Class I: Reactive Behaviors

A. In response to athletes' desirable performances

1. Positive Reinforcement (R). Positive verbal or nonverbal reaction by the coach. E.G., A coach says, "Way to go" after a good play.

2. Nonreinforcement (N). Failure of coach to respond. E.G., A player makes a fine play, but the coach shows no reaction to it.

B. In response to mistakes or errors made by the athlete

3. Mistake-Contingent Encouragement (EM). Following a mistake, a player is encouraged to do better or tells her not to worry about it. E.G., After a player error, the coach yells, "That's O.K. Don't worry about it."

4. Mistake-Contingent Technical Instruction (TIM). Coach tells or shows the athlete how to correct her action with specific instruction. E.G., After a fielding error, a player is shown or told how the ball should have been fielded.

5. Punishment (P). Negative verbal or nonverbal response after an undesirable behavior. E.G., A coach's sarcastic remark to a player who just struck out.

6. Punitive Mistake-Contingent Technical Instruction (TIMP). Following a mistake or error the coach tells or shows the athlete how to correct her action with specific instruction, but the instruction is given in a punitive manner. E.G., After missing a fly ball, the coach yells, "How many times do I have to tell you to catch the ball with two hands!"

7. Ignoring Mistakes (IM). A lack of response to a very noticeable mistake on the part of the player or the team.

C. In response to athlete misbehaviors

8. Keeping Control (KC). Responses designed to maintain order. Typically elicited by unruly conduct or inattentiveness by the players. E.G. "Several players are jostling on the bench. The coach says, " O.K. you kids. Sit still and pay attention to the game."

Class II: Spontaneous (coach-initiated) Behaviors

A. Game-related.

9. General Technical Instruction (GTI). Communication that provides instruction relevant to techniques and strategies of the sport and is not in response to any apparent player error. E.G., "Keep your glove down. "

10. General Encouragement (GE). Encouragement that does not immediately follow a mistake. E.G., "Come on, gang, let's get some runs."

11. Organization (O). Organizing player or team behavior that is not intended to directly influence play. E.G., putting in a new short stop.

B. Game-irrelevant

12. General Communication (GC). Interaction unrelated to game play or team activities. E.G., talking with players about family or school experiences.

---

better" or "That's okay, you are showing good hustle") or using a players past performance as a point of reference (e.g., "Your still throwing with your elbow at your side, pick it up!") is more likely to foster a task goal perspective, whereas evaluation that is ego-involved that denotes social comparison, social evaluation, (e.g., "Way to go! A hit like that could win us a game" or "That's it! Plays like that will separate winners from losers.") is more likely to promote an ego goal perspective. These modifications to the CBAS are similar to that used by Chaumeton and Duda (1988) who demonstrated that adequate intercoder reliability of the CBAS was not jeopardized (median coefficient of .90). Training procedures included pilot testing with the CBAS coding procedures to ensure differentiations can be made between process and outcome behaviors from coaches while retaining adequate intercoder reliability.

Additionally, two new behavioral categories were added to the CBAS observational instrument. First, a reinforcement category was used in the coding of coaching behaviors in response to a desirable performance. This behavior consisted of a positive reinforcement component along with a statement denoting technical instruction (TIR: That's it! That's the way to keep your elbow in!). This response was included because pilot testing conducted on the CBAS for this study indicated, and previous research has suggested, a distinction between responses involving evaluative reinforcement alone and evaluative reinforcement with technical instruction relative to players' performance (Horn, 1982). Second, a no-code (NC) category was added to the CBAS. Behaviors were labeled as no codes when the coding of behaviors was not possible due to situational

factors such as, coach-player mound and base coach-runner conversations, and general noise interference rendering the trained coder unable to determine the coach's comments. These types of situational factors have resulted in an uncodable category in previous research (Horn, 1982). This issue is addressed future in the next section.

CBAS Training

Six graduate students were trained in the use of the CBAS to observe, identify, and code ongoing coaching behaviors during two practices and one games. Coders were trained with the use of the CBAS Audio Visual Training Module (Smith, Smoll, & Hunt, 1978). This training module includes videotaped instruction, written tests, and a videotaped proficiency test to develop and assess coders' competence in identifying, labeling, and coding coaching behaviors. In addition to the basic CBAS coding, coders were also trained to record behaviors, when appropriate, as an outcome- or process-oriented statements. Training was conducted in two steps. First coders were trained following the procedures outlined in the CBAS training manual. Once, they had demonstrated adequate intra- and inter-coder reliability, they were trained to code CBAS behaviors as outcome and process statements.

Training sessions took place over a one-month period of time. Smith et al., (1977) recommend that coders attain at least a 95% accuracy score on the written and videotaped proficiency test. Additionally, intercoder and one-week intracoder reliability coefficients should exceed 80% prior to actual data collection. Lastly they suggest inter- and intracoder reliability be assessed periodically during data collection. Establishing

intercoder reliability requires at least two or more coders to independently and simultaneously observe and code a coach's behavior. Previous research with the CBAS has used the athlete as the unit of analysis (Horn, 1985; Rejeski, Darracott, & Hutslar, 1979; Smith et al., 1979). These studies have assessed the level of agreement between the coders with correlational comparison of relative frequency scores within the categories. Given the interest in motivational climate in the present study, the team was used as the unit of analysis, thereby precluding the use of correlation coefficients as a measure of inter- and intra-reliability. An alternative to correlation coefficients, reliability between and within coders can be assessed via percent agreement between and among coders (Darst, Zakrajsek, & Mancini, 1989).

For purposes of this study, inter- and intra-coder reliability were assessed with percent agreement using relative frequency scores. Four of the six trained observers met the reliability standards suggested by Smith and his colleagues (1977) and only those passing continued in the training process by demonstrating coding competence in field-based settings. Prior to actual data collection each of the four coders attained at least a 95% accuracy score on the written and videotaped proficiency test. Once coders demonstrated adequate reliability with inter-coder percent agreement at .80 on the original and two additional (TIR and NC) CBAS categories training for process and outcome-oriented statements commenced.

The reliability of the coding of the two components which were added to differentiate between coaching behaviors explicitly referring to the learning process and

those that make reference to the outcome were examined independently of the CBAS. In the coding process CBAS behaviors were coded first. Then, if the statement could be identified as a process (PS) or outcome (OS) statement it was so noted. Each coder had to maintain adequate reliability on the CBAS categories, while coding the behaviors and process and outcome statements.

Three out of the four coders were successful in maintaining adequate reliability while coding statements as outcome or process. Specifically, intercoder and one-week intracoder reliability estimates using the average percent agreement over all categories exceeded 80% prior to actual data collection. Lastly, inter- and intra-coder reliability tests were conducted during data collection. At this time, coders continued to demonstrate average inter- and intra-coder percent agreement estimate of .80 or above for the CBAS categories while coding process and outcome statements. The fourth coder who was unable to maintain this level of reliability did demonstrate adequate reliability of the CBAS without the outcome-process coding. Thus, three coders recorded both CBAS and outcome-process statement (8 teams total), while one coder recorded CBAS behaviors (1 team), but not outcome-process statements.

Behavioral Indices

Smith et al. (1977) recommend four behavioral indices which measure (a) activity level as indicated by the number of behaviors per minute, (b) reinforcement consistency or the percent of positive reinforcing responses to desirable performance, (c) reactions to mistakes, and (d) positive-aversive control index which is calculated by dividing the

"reinforcement consistency" by the percent of punishment given to athletes. However, for the purposes of this paper the amount of instruction, encouragement, reinforcement and punishment, and the coaches process and outcome orientations were of particular interest. Thus, the behavioral indices that will be used in this study were: (a) Reinforcement Consistency (RC), (b) Punishment Consistency (PC), (c) Encouragement (E), and (d) Instruction (I). In addition to these indices, a composite coaching (CC) score based on the CBAS categories were also used in this study. Lastly, the degree to which the coach is process- or outcome-oriented were also recorded. Thus, two coaching behavioral categories, Process Orientation (PO) and Outcome Orientation (OO), were recorded. These behavioral indices and thus their calculations are unique to this study, but are modeled after the work of Horn (1985). The calculations for these behavioral indices are in Table 4.

Reinforcement Consistency (RC) represents the amount of reinforcement given by coaches for desirable athlete performances (R, TIR) relative to the total number of responses to desirable performances (R, TIR, NR). Punishment Consistency (PC) denotes the degree to which coaches punished athletes for mistakes (P, TIMP) relative to the total number of responses to athletes' mistakes (EM, TIM, P, TIMP, IM). Encouragement (E) represents the degree to which coaches provided athletes with mistake-contingent (EM) and spontaneous encouragement (EG) relative to the total number of mistake-contingent (EM, TIM, P, TIMP, IM) and spontaneous (KC, TIG, EG, O) responses. Instruction (I) denotes the amount of mistake-contingent (TIM, TIMP) and

Table 4. Calculations for Coaching Indices.

Behavioral Index	Calculation
Reinforcement Consistency(RC)	RC = R +TIR/ (R +TIR + NR)
Punishment Consistency (PC)	PC = P + TIMP / (EM + TIM + P + TIMP + IM)
Encouragement (E)	E = (EM + EG) / (EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Instruction (I)	I = (TIM + TIMP + TIG) / (EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Coaching Composite Score (CC)	CC = (RC + E + I) - PC
Process-orientation Score (PO)	PO = PS / (R+ NR + EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Outcome-orientation Score(OO)	OO= OS/ (R+ NR + EM + TIM + P + TIMP + IM + KC + TIG + EG + O)

Note.

R = Positive Reinforcement
NR = Nonreinforcement
EM = Mistake-Contingent Encouragement
TIM = Mistake-Contingent Technical Instruction
P = Punishment
TIMP = Punitive Mistake-Contingent Technical Instruction
IM = Ignoring Mistakes
KC = Keeping Control
TIG = General Technical Instruction
EG = General Encouragement
O = Organization
GC = General Communication

spontaneous (TIG) instruction given by coaches relative to the total amount of mistake-contingent (EM, TIM, P, TIMP, IM) and spontaneous (KC, TIG, EG, O) responses. The coaching composite (CC) represents the amount of reinforcement (RC), Encouragement (E), and Instruction (I) coaches in relation to how much they punish (PC). Process orientation (PO) represents the degree to which coaches make statements that highlight the value of learning, improving, or demonstrating effort relative the total number of coaching behaviors. Similarly, Outcome Orientation (OO) represent the degree to which coaches make statements that highlight the value winning and outperforming others relative the total number of coaching behaviors. These indices are conditional percentages and therefore cannot be compared to each other. Rather, each index was used to compare between coaches.

Pilot Testing

Pilot testing was conducted to examine the appropriateness of the GISQ and the questionnaire administration procedures. Twelve female athletes from a middle school in a neighboring school district participated in the pilot study. Given time constraints associated with the end of the basketball season, they participated in 3 data collection sessions. In the first session, the pilot study was explained and the athletes completed the Background Questionnaire, the TEOSQ, and the PMCSQ-2. Athletes took approximately 15 minutes to complete the series of questionnaires. A week later, during the second meeting in the gym and immediately preceding a practice, athletes took approximately 15 minutes to complete the GISQ, CSAI-2, the Attributions for Success Questionnaire

(discussed in the following section), and the Perceptions of the Season's Performance Questionnaire. The third meeting took place 2 days later in a classroom setting, 45 minutes prior to a game. Athletes took approximately 10 to 15 minutes to complete the questionnaire packet which included the GISQ, CSAI-2, Goal Involvement, and the Attributions for Success Questionnaire (ASQ). The potential usefulness of the GISQ was assessed with correlations between goal involvement as measured by the GISQ and attribution-related statements on the ASQ, and descriptive statistics.

The ASQ was designed specifically for this study to measure pre-practice- and pre-game-related attribution statements. Effort and ability-based attribution statements have been used in the academic setting to infer goal involvement (Ames, 1985; Ames & Ames, 1981; Ames & Felker, 1979). For example, following performances on a puzzle task, children responded to a series of effort- and ability-related attributions statements. Effort-related attributions consisted of statements such as , "I worked very carefully," "I usually try hard on things like this," "I wanted to do well," "I took my time to plan my answer to the puzzle," "I try very hard," Ability-related attributions consisted of statements including "I am smart," "these puzzles were easy for me," "I can do these puzzles," "I know how to do these puzzles," and "I am good at puzzles like these."

Research using attributional statements to infer goal involvement in the classroom suggests that individuals with a task goal perspective attribute their performance to effort, while those with an ego goal perspective attribute their performance to ability (Ames, 1985; Ames, 1984b; Diener & Dweck, 1978). In sport research, task orientation has been

found to be positively related to the belief that sport success is a function of effort, whereas ego orientation has been positively associated with the belief that success in sport is a function of ability (Duda & Nicholls, 1992; Newton & Duda, 1992; Treasure & Roberts, 1994).

The ASQ is a 9-item inventory that instructs athletes to focus on their current thoughts about the upcoming game or practice. Prior to a practice or game situation, athletes indicate what factors they believe will contribute to a successful performance by responding to stem phrases denoting effort and ability attributions concerning the specific practice and game situation on a 5-point Likert-type scale ranging from Strongly Disagree (1) to Strongly agree (5). Effort-related items include: "I will give it my all," "I will try very hard," "I want to do well," "I will work hard," "I will do my best." Ability-related items include: "I am athletically talented," "playing softball comes easy to me," "I play softball well." "I am naturally good at softball." These phrases were categorized independently by three persons knowledgeable in this area as either effort- or ability-related attributions, and an average agreement percentage of greater than 85 percent was found.

Positive correlations between (a) task goal involvement (GISQ) and effort-related attributions, and (b) ego goal involvement (GISQ) and ability-related attributions were expected. These relationships between task goal involvement and the effort-related attributions were confirmed revealing that athletes who scored high in task involvement also scored high in making effort-related attribution in both practice ($r = .58$) and game (r

= .71) situations. Interestingly, practice-related and game-related ego involvement and ability attributions were negatively correlated (r = -.77 and r = -.53, respectively) indicating that athletes scoring lower in ego involvement scored high in ability-related attributions.

Examinations of mean goal involvement and attribution scores prior to a practice and a game revealed that in general athletes were high in task involvement and attributed future success to effort. Athletes scored higher on task involvement prior to practice (M = 4.17, SD = .49) than the game (M = 3.92, SD = .48). Practice-related effort attributions (M =4.38, SD = .50) were lower than game-related effort (M = 4.5, SD = .36).

Overall, athletes were low in ego involvement; however, they attributed future success to ability. Counter to the expected findings, athletes scored lower on ego involvement and ability-related attributions prior to a game situation (M = 2.08, SD = .56 & M = 3.17, SD = .70, respectively) than practice (M = 2.18, SD = .67 & M = 3.20, SD = .97, respectively). In practice situations (M = 2.28, SD = .42), athletes also scored slightly higher in cognitive anxiety than in game conditions (M= 2.20. SD = .64), but experience greater somatic anxiety in game (M = 1.8, SD = .79) as opposed to practice situations (M = 1.6, SD = .61).

These results may indicate that ego goal involvement does not operate differently under game and practice situations. However, given the relatively low anxiety scores prior to game situations compared to practice, these results were interpreted as indicating that the data collection procedures should be altered. Procedurally, in the main study (a)

the location in which the questionnaire is administered was the same for practice and game situations, (b) prior to administration of the questionnaire, athletes were encouraged and given a brief period time to think about the upcoming practice or game, (c) the questionnaire directions were read aloud, and (d) each question was read aloud as athletes followed along answering the questions. Attempts were made to follow these procedures to help ensure that athletes understood the context in which the questions were asked, and to keep the athletes' attention on the task.

In conclusion, the results of the pilot study provided evidence to suggest that the GISQ is an appropriate instrument for assessing goal involvement. Overall, subjects had no problem understanding or completing the questionnaires. However, steps were taken to ensure that participants focused on and answered the questions in regard to the immediate practice or game situation.

Procedures

A request to conduct a study involving middle school athletes was submitted to the Guilford County School Research and Assessment Office. After admission into the school system was granted, permission to contact softball coaches was requested from the principals at the middle schools offering softball. Coaches were contacted individually to explain nature of the study and request their team's participation. After receiving the coach's permission, teams were addressed by the investigator or an individual involved in the data collection a total of five times. The first meeting consisted of a brief explanation of the study. Athletes were told that involvement entails completion of two to three

questionnaires four times over the course of the season. Athletes were informed that (a) participation in the study was strictly voluntary, (b) the information they give would be confidential, (c) they could withdraw from the study at any time, and (d) after completion, results will be available on request to the coaches, athletes, and parents/guardian involved in the study. Prior to the closure of the meeting, athletes interested in participation were given a consent form. Athletes were encouraged to discuss the possibility of participation with their parents/guardian and return the consent forms with their signature, along with that of one of their parents/guardian to their coach. A copy of the consent form is in Appendix G.

The second meeting with the athletes was held prior to the beginning of the second week of practice after tryouts. Athletes who returned the consent form completed questionnaires designed to get background information and initial measures of goal orientations (TEOSQ). With at least seven days passing (M = 8.8 days) the third meeting was held. The third and fourth meetings were designed to assess thoughts and attitudes before game and practice situations. To control for an order effect, the third meeting was held before a game situation and the fourth before a practice situation for five of the nine participating teams. For the other four teams the third meeting was conducted prior to a practice session and the fourth meeting before a game situation. The questionnaires before the game and practice situations were identical: athletes completed a packet of questionnaires designed to assess goal involvement (GISQ) and affect associated with practice situations (CSAI-2). At least seven days (M = 20.4 days) passed between the

third and fourth data collection meetings. The logistics involved in maintain the order of time between game-practice data collection session and coach convenience prohibited further structuring of the data collection. The final meeting with the athletes was held prior to the beginning of a practice session during the last three weeks of the season with at least five days ($\underline{M} = 8.6$) after their fourth meeting. Participating athletes completed a packet of questionnaires designed to assess information about their feelings of success, goal orientations (TEOSQ) and motivational climate (PMCSQ-2).

Data collection at all meetings was conducted in the absence of coaches and parents/guardians. Athletes put their names on each questionnaire so that all of the data they provided could be matched. In order to ensure confidentiality, a cover sheet with a place for athletes to put their name accompanied each questionnaire. Names were matched with the students' identification number. The cover sheets identifying the athletes by name was removed once the names and numbers were matched and recorded. Athletes were aware of these procedures and the importance of answering each question honestly was stressed. Before completing the questionnaires, athletes were reminded that their responses would be confidential. Each questionnaire packet took approximately 10 to 20 minutes to complete.

In addition to the four meetings in which athletes complete the questionnaires, each head coach was observed 60 minutes during two practice sessions each and during one game. Due to last minute rescheduling of a game day and the playing field, game observation data for one team were not collected. Observers positioned themselves so

that they were able to get an accurate account of coaching behaviors while maintaining a relatively unobtrusive role. Although both coaches and players were aware of the observer's presence, they did not know the specifics concerning the data collected. No specific coding form was used. Observers recorded coaching behaviors by writing the abbreviated codes on notebook paper. A summary of the data collection procedures is in Table 5.

Design/Analysis

A nonexperimental field study was employed to investigate possible situational and contextual influences on goal orientations. Specifically, two questions were posed. First, do goal involvement and state anxiety vary as a function of the reward structure associated with game and practice situations? It was hypothesized that athletes facing a game situation would score higher in ego involvement, higher in state anxiety, and lower in task involvement than when facing a practice situation. To test this hypothesis, a mixed factor multivariate analysis of variance (MANOVA) was employed with reward structure, game and practice situations, serving as the within subject factor and athletic team as the between subject factor. The dependent measures consisted of two components of goal involvement, task and ego, and two components of anxiety, cognitive and somatic.

The second question was: do goal orientations change over the course of a competitive season as a function of perceived motivational climate and coaching behaviors? Four hypotheses were forwarded. Two hypotheses examined the relationship

Table 5. A Summary of the Proposed Data Collection Procedures.

Proposed Data Collection Procedures
Meeting 1: (15 minutes)
a) Explanation of and invitation to participate in the study
Meeting 2: Before a practice session by the end second practice week (10 minutes)
a) Collection of signed consent forms
b) Background Questionnaire
c) Personal Attitudes Toward Sport (TEOSQ).
Meetings 3 and 4*: Held prior to a practice or game session (10 - 15 minutes)
a) Personal Attitudes About Today's Game or Practice (GISQ)
b) North Carolina Self-evaluation Questionnaire (CSAI-2)
c) Attributions for Success (ASQ)
Meeting 5: Held prior to a practice session (15 minutes)
a) Perceptions of the Season's Performance
b) Personal Attitudes Toward Sport (TEOSQ)
c) Perceived Motivational Climate in Sport Questionnaire (PMCSQ-2)
During the season: Two practice (60 minutes each) and one game observations of each coach using the CBAS

* Note. Four of the 9 teams the third meeting was held before a practice situation and meeting four was held before a game. For the other 5 teams, the third meeting was held before a game and meeting four was held before a practice.

between goal orientations and motivational climate, while the third and fourth investigated the relationship between coaching behaviors and motivational climate. First, it was hypothesized that perceptions of a mastery-oriented climate would be positively related to increases in athletes' task goal orientation from early to late season, while perceptions of a performance-oriented climate would not be related to task orientation. Hierarchical multiple regression techniques were employed to test this hypothesis. The predictor variables consisted of early season task goal orientation and mastery- and performance-oriented motivational climate. Post-season task orientation served as the dependent variable in this analysis. Early season task scores were entered first followed by mastery-oriented motivational climate scores and then performance climate.

Second, it was hypothesized that perceptions of a performance-oriented climate would be related to increases in athletes' ego goal orientation from early to late season, whereas perceptions of a mastery-oriented climate would not be related to ego orientation. Hierarchical multiple regression techniques were employed to test this hypothesis. The predictor variables consisted of early season ego and performance- and mastery-oriented motivational climates. Post-season ego orientation served as the dependent variable. In the analysis, early season ego scores were entered first, followed by performance-oriented motivational climate scores. Mastery climate was entered into the equation last.

Third, it was hypothesized that greater mastery-oriented climates would be reported by athletes on teams in which the coach gave more instruction, encouragement, process-

oriented reinforcement, and process-oriented punishment and less outcome-oriented reinforcement and punishment. With the number of athletic teams involved in this study, this hypothesis was examined using correlational data and by graphing the frequency of the six behavioral indices (RC, PC, E, I, PO, OO) for each coach, and each team's mastery motivational climate scores. Correlations were also used to examine the relationship between CC and mastery climates.

Finally, the same descriptive analysis were used to examine the fourth hypothesis which stated that greater performance-oriented climates would be reported by athletes on teams in which the coach gave less instruction, encouragement, process-oriented reinforcement, process-oriented punishing and more outcome-oriented reinforcement and punishment. Again, correlational data and graphing descriptive data of coaching behaviors and performance climate scores were used.

CHAPTER IV

RESULTS

A number of statistical procedures were used to investigate the situational and contextual factors associated with goal perspectives. First, descriptive statistics and reliabilities for the goal orientations, goal involvement, and anxiety and motivational climate assessment were conducted. Second, a mixed-factor multivariate analysis of variance (MANOVA) was used to investigate the relationship between reward structures (game and practice situations) and goal involvement. Next, a forced-entry hierarchical regression analysis was conducted to examine the relationship between goal orientations and motivational climate. Finally, descriptive statistics of coaching behaviors were calculated and correlations and graphing descriptive data of coaching behaviors and motivational climate were used to examine the relationships among these factors.

Descriptive Statistics and Reliabilities for Goal Involvement, Anxiety, Goal Orientations, and Motivational Climate

Goal Involvement

The GISQ was used to assess pre-practice and pre-game goal involvement. Pre-practice and pre-game task and ego involvement measures were deemed to have adequate internal consistency with Cronbach's alpha coefficients of .86 and .76, respectively. All items correlated with and contributed to the overall alpha coefficients. Construct independence between pre-practice and pre-game task involvement and pre-practice and pre-game ego involvement were demonstrated with correlations ranging from -.10 to .01. Reliability coefficients and correlations are in Table 6.

Table 6. Reliability Coefficients (Diagonal) and Correlations (off Diagonal) Between Pre-Practice and Pre-Game Goal Involvement and Anxiety.

	Pre-practice				Pre-game			
	Task	Ego	Cogn.	Som.	Task	Ego	Cogn.	Som.
Pre-practice								
Task	**.86**							
Ego	.01	**.91**						
Cognitive	-.06	-.09	**.76**					
Somatic	-.22**	-.21	.42**	**.89**				
Pre-game								
Task	.61**	.00	-.02	-.19*	**.76**			
Ego	-.10	.73**	-.07	-.13**	-.03	**.87**		
Cognitive	-.05	-.21	.66**	.25**	-.02	-.07	**.81**	
Somatic	-.09	-.11	.49**	.48**	-.04	-.04	.55**	**.76**

Note. All subscale items correlated with and contributed to the overall alpha coefficient

* alpha < .05 ** alpha < .01

Task involvement scores were skewed left and ranged from 2.43 to 5.0, whereas ego involvement scores were skewed to the right and ranged from 1 to 4.67. It was deemed that the degree of skewedness (Skewness Index < 2.0) was not strong enough violate the assumption of normality. Mean scores for task and ego involvement, seen in Table 7, revealed that athletes scored (a) high on task involvement, (b) moderately low on ego, (c) slightly higher in task and ego involvement before a practice than a game, (d) higher in task than ego involvement before practices and games.

Cognitive and Somatic Anxiety

The CSAI-2 was used to assess pre-practice and pre-game cognitive and somatic state anxiety. Pre-practice and pre-game cognitive and somatic anxiety measures were internally consistent. All items correlated with and contributed to the overall Cronbach's alpha coefficient above .70. Correlations for both pre-practice and pre-game cognitive and somatic anxiety ranged from .25 to .55 and revealed that with correlations less than .70, these were related, yet distinct constructs. See Table 6 for reliability coefficients and correlations.

Pre-practice and pre-game cognitive and somatic anxiety mean scores approximated a normal distribution and ranged from 1 to 3.86. Mean scores revealed that athletes scored (a) moderate to low on cognitive and somatic anxiety, (b) higher in cognitive and somatic anxiety before a game than a practice. (c) scored higher in somatic than cognitive anxiety before a practice and game situation. Anxiety means and standard deviation are in Table 7.

Goal Orientations

The TEOSQ was used to assess early and late season goal orientations. Adequate internal consistency for early season task and ego orientations measures was revealed with all items correlating with and contributing to the overall alpha coefficients Cronbach's alpha coefficients equaling .78 and .85, respectively. Construct independence between early task and ego orientation was indicated with a correlation of $r = .01$. Late season task and ego orientations measures had Cronbach's alpha coefficients equaling .85 and .92, respectively. All items correlated with and contributed to the overall alpha coefficients. A correlation of $r = .08$ between late season task and ego orientations indicates that the orientations are independent. Reliabilities and correlations are in Table 8.

Table 7. Means and Standard Deviations for Pre-Practice and Pre-Game Goal Involvement and Anxiety.

	Pre-practice		Pre-game	
	M	SD	M	SD
Task	4.42	.47	4.33	.46
Ego	2.22	.94	2.11	.86
Somatic	1.89	.54	2.20	.63
Cognitive	1.47	.52	1.94	.52

Table 8. Reliability Coefficients (Diagonal) and Correlations (Off Diagonal) Between Early and Late Season Goal Orientations.

	Early Season		Late Season			
	Task	Ego	Task	Ego	Mastery	Performance
Early Season						
Task	**.77**					
Ego	.01	**.86**				
Late Season						
Task	.44**	.10	**.85**			
Ego	-.05	.64**	.08	**.92**		
Mastery.	.16	-.06	.41**	-.02	**.93**	
Performance	-.17	.06	-.13	.09	-.62**	**.92**

* alpha < .05 ** alpha < .01

Descriptive statistics revealed that the scores for early and late season task orientations were skewed left. Early season task scores ranged from 3.57 to 5, while late season task scores ranged from 3.14 to 5. The Skewness Index of less than 2.0 indicated that the assumption of normality was not violated. In contrast, early and late season ego orientation scores were skewed right. Scores for both early and late season ego orientation ranged from 1 to 5. The distribution, range of scores, and investigation of the means reveals that athletes scored (a) high in task orientation and moderately low on ego orientation and (b) slightly higher in task and ego orientation early in the season as compared to later in the season. Means and standard deviations are in Table 9.

Motivational Climate

The PMCSQ-2 was used to assess athletes' perceptions of their team's motivational climate. Both perceived mastery and performance climate subscales demonstrated adequate internal consistency with all items correlating with and contributing to the overall alpha coefficients with Cronbach's (1951) alpha coefficients above .70. The correlation between mastery and performance oriented climates revealed that these measures were related, yet with correlations less than .70 were distinct constructs. Table 8 contains reliability coefficients and correlations for these variables.

Mastery-oriented climate scores were skewed left and scores ranged from 2.13 to 5 with a mean of 4.19 (SD = .58). It was deemed that the degree of skewedness was not severe enough to violate the assumption of normality. Performance-oriented scores ranged from the lowest possible score of 1 to 4.69 with a mean of 2.45 (SD = .73). These descriptive statistics revealed that athletes perceived their team high in mastery-orientation and low in performance orientation.

Table 9. Means and Standard Deviations for Early and Late Season Goal Orientations and Motivational Climate.

	Early Season		Late Season	
	M	SD	M	SD
Task	4.49	.36	4.44	.49
Ego	2.46	.91	2.41	.98
Mastery	n/a	n/a	4.19	.58
Performance	n/a	n/a	2.45	.73

Differences Between Game and Practice Goal Involvement and State Anxiety

One purpose of this study was to examine whether goal involvement and anxiety covary as a function of the reward structure associated with athletic games and practices. To test the hypothesis (i), athletes will score higher in ego involvement and state anxiety when facing a game situation and lower in task involvement when facing a practice situation, a mixed-factor (Team X Reward Structure) MANOVA was conducted. In this analysis team membership (9 teams) served as the between subject factor, reward structure (practice, game) was the within subject factor, and the dependent variables were goal involvement (task, ego) and state anxiety (cognitive, somatic). An a priori planned comparison was built into this design to test for possible order of assessment effects (game-practice or practice-game). Specifically, the overall team effect was partitioned into a 1 degree of freedom order effect comparing teams 1, 2, 5, 6, and 8 (game-practice order) to teams 3, 4, 7, and 9 (practice-game order) and a 7 degree of freedom overall team effect.

The results produced a significant Team by Reward Structure interaction, Wilks Λ = .58, $F(32, 355.63) = 1.74$, $p < .01$, ES = .12. Examination of the partitioned Team X Reward Structure interaction indicated that Order X Reward Structure was the source of the overall interaction, Wilks Λ = .82, $F(4, 96) = 5.26$, $p < .05$. Univariate Fs indicated the interaction was evident in ego involvement and somatic anxiety. Athletes assessed first before a game scored higher on practice ego involvement (eta square = .16) and lower on practice somatic anxiety (eta square = .18) than athletes assessed first before a practice. Means and standard deviations for goal involvement and anxiety by order of assessment are located in Table 10.

The multivariate analysis also produced a significant overall team membership main effect, Wilks Λ = .40, $F(32,355.63) = 2.54$, $p < .01$, ES = .17, and examinations of partitioned effects indicated the effect did not reflect order of assessment, Wilks Λ = .92, $F(4,96) = 2.07$, ns. Scheffe post hoc comparison of the nine teams revealed that for ego involvement no two groups were significantly different at the .05 level and for somatic anxiety Teams 1 and 8 differently significantly from Team 9. Means scores for each team are located in Table 11.

A main effect for reward structure was also found, Wilks Λ = .44, $F(4,96) = 30.78$, $p < .01$, ES = .56. Univariate Fs revealed that practice and game scores differed on task involvement, $F(1,99) = 25.63$ $p < .05$, cognitive anxiety, $F(1,99) = 50.79$ $p < .01$, and somatic anxiety, $F(1,99) = 96.51$ $p < .01$. In support of the hypothesis, athletes scored higher on task involvement and lower on state cognitive and somatic anxiety prior to a practice situation than when facing a game situation. Univariate effect sizes indicate small task involvement and moderate anxiety effects. See Table 12 for means, standards deviations, and univariate effect sizes.

Table 10. Means and Standard Deviations for Goal Involvement and State Anxiety by Order of Assessment.

	Assessment Order			
	Game-Practice (N = 56)		Practice-Game (N = 47)	
Variable	M	SD	M	SD
Practice Task	4.42	.50	4.43	.46
Game Task	4.35	.43	4.29	.52
Practice Ego	2.43	1.03	1.99	.75
Game Ego	2.25	.93	1.93	.72
Practice Cognitive	1.76	.55	2.05	.50
Game Cognitive	2.19	.62	2.23	.63
Practice Somatic	1.29	.38	1.68	.59
Game Somatic	1.93	.52	1.96	.48

Table 11. Means and Standard Deviations for Goal Involvement and State Anxiety by Team.

	Variables							
	Goal Involvement				State Anxiety			
	Task		Ego		Cognitive		Somatic	
Schools	M	SD	M	SD	M	SD	M	SD
1	4.47	.49	2.59	1.10	1.99	.58	1.39	.40
2	4.11	.39	1.46	.48	1.99	.59	1.70	.50
3	4.35	.58	1.85	.50	2.18	.50	1.83	.50
4	4.46	.39	2.19	.63	2.28	.69	1.67	.45
5	4.16	.65	2.01	1.03	1.82	.56	1.58	.35
6	4.45	.45	2.63	.84	2.19	.59	1.93	.52
7	4.54	.42	1.89	.73	1.85	.43	1.69	.39
8	4.48	.34	2.39	.95	1.91	.60	1.55	.36
9	4.15	.40	2.17	.90	2.49	.52	2.23	.70

Table 12. Means, Standard Deviations, and Effect Sizes for Game and Practice Task Involvement, Cognitive Anxiety, and Somatic Anxiety.

	Variables								
	Task Involvement			Cognitive Anxiety			Somatic Anxiety		
Reward Structure	M	SD	eta^2	M	SD	eta^2	M	SD	eta^2
Practice	4.43	.48	.05	1.89	.54	.34	1.47	.52	.49
Game	4.32	.47		2.21	.62		1.94	.50	

Relationships Among Goal Orientations, Motivational Climate, and Coaching Behaviors

Another purpose of this study was to examine whether goal orientations change over the course of a competitive season as a function of the perceived motivational climate and coaching behaviors. Four hypotheses were associated with this purpose. The first two hypotheses (ii & iii) stated that (a) perceptions of a mastery-oriented climate will be positively related and perceptions of a performance-oriented climate will not be related to increases in athletes' task goal orientation and (b) perceptions of a performance-oriented climate will be positively related and perceptions of a mastery-oriented climate will not be related to increases in athletes' ego goal orientation. These hypotheses were examined via two forced-entry, hierarchical multiple regression analyses. The second two hypotheses (iv & v) stated that (a) greater mastery-oriented climates will be reported by athletes on teams in which the coach gives more instruction, encouragement, reinforcement and process-oriented statements, and less punishment and outcome-oriented statements and (b) greater performance-oriented climates will be reported by

athletes on teams in which the coach gives less instruction, encouragement and reinforcement, and more punishment and outcome-oriented statements. To examine these hypotheses, correlations between motivational climate and coaching behaviors (indices) and the behavioral patterns relative to team motivational climate were examined graphically.

Goal Orientations and Motivational Climate

Early season task goal orientation and mastery and performance climate scores served as the independent variables and late season task goal orientation was used as the dependent variable. Goal orientations are hypothesized to be dispositional constructs that once formed resist change (Nicholls, 1989). It would be reasonable to expect that initial task orientations scores would be highly correlated with task orientation scores taken at a later date. A correlation of $r = .77$ between early and late season task goal orientation supported this contention. Thus, in testing Hypotheses (ii) early task scores were entered first in the multiple regression analysis followed by perceived mastery-oriented climate and perceived performance climate scores.

Full model results indicated that the combination of the three independent variables predicted approximately 33% of the variance in late season task scores ($R = .57$, $F(3,101) = 16.38$, $p < .05$). Specifically, early season task orientation accounted for approximately 19% of the variance ($R = .43$, $F(1,103) = 23.75$, $p < .01$), perceived mastery climate added an additional 11% of explained variance ($R = 55$, $F(2,102) = 21.74$, $p < .01$), and perceived performance climate explained an additional 3% of the variance ($R = .457$, $F(3,101) = 16.38$, $p < .01$). Results indicate that perceived mastery climate was the strongest predictor of late season task orientation followed by performance climate after controlling for early season task orientation. Contributions of each variables are given in Table 13.

Table 13. Multiple Regression Results For Variables Predicting Late Season Task Goal Orientation.

Variable	R	R2	R2 Change	F Change	β	SE β	T value
Early Season Task	.44	.19	.19	23.75**	.40	.08	4.83**
Mastery Climate	.55	.30	.11	16.21**	.47	.10	4.50**
Performance Climate	.57	.33	.03	4.28*	.21	.10	2.07*

* $p < .05$ ** $p < 01$

A forced-entry, hierarchical multiple regression analysis was used to test Hypotheses (iii). With a correlation of $r = .64$ between early and late season ego orientation, early season ego goal orientation served as the first of three predictor variables along with perceived performance and mastery climate. Late season ego goal orientation served as the dependent variable. Early task orientation was entered first followed by perceived performance climate and mastery-oriented climate. Although the combination of the three predictors explained approximately 31% of the variance in late season task scores ($R = .56$, $F(3,101) = 15.47$, $p < .01$), the only variable contributing significantly to this relationship was early season ego goal orientation scores. By itself early season ego orientation accounted for 30% of the variance in late season ego orientation ($R = .55$, $F(1,103) = 44.32$, $p < 01$). Neither perceived mastery nor performance oriented climates contributed significantly to this relationship. The contributions made by each variable are located in Table 14.

Table 14. Multiple Regression Results For Variables Predicting Late Season Goal Orientation.

Variable	R	R2	R2 Change	F Change	β	SE β	T value
Early Season Ego	.55	.30	.30	44.32*	.55	.08	6.57*
Performance Climate	.56	.31	.01	1.39	.15	.11	1.42
Mastery Climate	.56	.31	.00	.63	.08	.11	.79

* $p < 01$

Motivational Climate and Coaching Behaviors

The last two hypotheses focused on the relationship between team motivational climate and coaching behaviors. Specifically, the hypotheses stated that (a) greater mastery-oriented climates will be reported by athletes on teams in which the coach gives more instruction, encouragement, reinforcement and process-oriented statements, and less punishment and outcome-oriented statements and (b) greater performance-oriented climates will be reported by athletes on teams in which the coach gives less instruction, encouragement and reinforcement, and more punishment and outcome-oriented statements. To examine these hypotheses, correlations between motivational climate and Behavioral indices and patterns of coaching behaviors relative to team motivational climate were examined. The patterns of coaching behaviors relative to motivational climate were investigated graphically.

CBAS Coaching Behaviors

During the 1995 Softball season, the behaviors of nine coaches were observed and recorded using the Coaching Behavior Assessment System (CBAS). Eight of the nine

coaches were observed during one game and two practices. One coach was observed during two practice sessions only as last minute scheduling changes prohibited the observation of a game for this coach. A total of 7,378 behaviors were recorded during these 26 observation sessions. Of this total, 2,436 (M = 304.5; SD = 114.18) behaviors were recorded over a total of eight game situations while 4,942 (M = 549.11; SD =117.12) behaviors were recorded over a total of 18 practice sessions. Coaches' game and practice (averaged across two practice sessions) behaviors as categorized by CBAS are located in Appendices H and I, respectively.

Due to the lack of reliability in the coding process and outcome statements by one of the coders, only eight of the nine coaches received process and outcome assessments. Thus, the descriptive data reported in the following section reflects the behaviors of eight of the nine coaches in practice situations and seven out of nine coaches in game situations. Additionally, coaching behaviors coded as noncodable (NC) were also excluded from a report of the total behaviors and calculations of percentages as it was impossible to know whether or not the statements were or were not process or outcome statements. Thus, out of a possible 2175 game behaviors approximately 3% (N = 65) were categorized as process statements and approximately 5% (N = 104) were coded as outcome statements. Approximately 9% (N = 266) of the 4,234 practice behaviors categorized as process statements (PS) and approximately 4% (N = 185) were noted as outcome statements (OS). Coaches' game and practice behavior pertaining to process and outcome statements are given in Appendix J.

Behavioral Indices

For the purposes of this paper composite scores or behavioral indices denoting instruction, encouragement, reinforcement and punishment, and the coaches process and outcome orientations, rather than behaviors associated with specific CBAS categories.

were of particular interest. Thus, the raw observational data for each coach were used to calculate behavioral indices. The indices used in this study were: (a) Reinforcement Consistency (RC), (b) Punishment Consistency (PC), (c) Encouragement (E), (d) Instruction (I), (e) Process Orientation (PO), (f) and Outcome Orientation (OO). The calculation for reinforcement consistency was altered by the addition of the category labeled Technical Instruction with Reinforcement (TIR). Specifically, TIR was considered to be a form of reinforcement and thus was included in the numerator and denominator for RC. In addition, a coaching composite (CC) score was calculated as a summary denoting the degree to which coaches responded to athlete behavior with reinforcement, encouragement, and instruction as opposed to punishment. Higher CC scores denote coaches who are more reinforcing, encouraging, and instructive and less punishing, whereas lower CC scores represent coaches who are more punishing relative to the amount they reinforce, encourage, and instruct. The calculations for these behavioral indices are in Table 15.

Descriptions of coach behavior, as defined by RC, PC, E, I, PO, OO, and CC, are reported relative to (a) game situations, (b) practice situations (average behavioral indices across two practice sessions), and (c) overall context (average behavioral indices associated with game and practice situations). Tables 16, 17, and 18 contain descriptive summary of game, practice, and overall behavioral indices of each coach, respectively, along with means and standard deviations.

Table 15. Calculations for Behavioral Indices

Behavioral Index	Calculation
Reinforcement Consistency(RC)	RC = R + TIR/ (R + TIR + NR)
Punishment Consistency (PC)	PC = P + TIMP /(EM + TIM + P + TIMP + IM)
Encouragement (E)	E = (EM + EG) / (EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Instruction (I)	I = (TIM + TIMP + TIG) / (EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Coaching Composite Score (CC)	CC = (RC + E + I) - PC
Process-orientation Score (PO)	PO = PS / (R+ NR + TIR + EM + TIM + P + TIMP + IM + KC + TIG + EG + O)
Outcome-orientation Score(OO)	OO= OS / (R+ NR + TIR + EM + TIM + P + TIMP + IM + KC + TIG + EG + O)

Note.

R = Positive Reinforcement
NR = Nonreinforcement
EM = Mistake-Contingent Encouragement
TIM = Mistake-Contingent Technical Instruction
P = Punishment
TIMP = Punitive Mistake-Contingent Technical Instruction
IM = Ignoring Mistakes
KC = Keeping Control
TIG = General Technical Instruction
EG = General Encouragement
O = Organization
GC = General Communication

Examination of mean scores reveals that in game and practice situations coaches respond to desirable performances with positive reinforcement. In response to undesirable performances in game situations, coaches provide similar amounts of encouragement and instruction and comparatively less punishment. Investigation of individual coach's behaviors reveals several exceptions to this generalization: (a) Coach 4 engaged in a greater amount of encouragement than instruction, (b) Coach 5 demonstrated more punishing behaviors than instructive or encouraging behaviors, and (d) Coach 9 demonstrated more instructive than encouraging behaviors. The lower coaching composite scores (CC) for coaches 8 and 5 reflect a greater tendency to engage in punishment relative to the amount of reinforcement, encouragement, and instruction than coaches with higher composite scores. In game situations, coaches tended to be more outcome (OO) than process-oriented (PO). An exception to this was coach 9.

In practice situations, instruction was the most frequent response to undesirable performances. The second most frequent was punishment, followed by encouragement. It is important to note, however, that the variability associated with the instruction (IC, $\underline{SD}$ = 11.87) and punishment (PC, $\underline{SD}$ = 14.35) consistencies indicate that the mean differences are not substantial. Only Coach 5 deviated from this pattern. Specifically, Coach 5's most frequent response to undesirable performances was punishment. The next most frequent was instruction and third was encouragement. The frequency of punishment given by this coach is also reflected in the coaching composite score. Investigation of the mean process (PO) and outcome orientation (OO) indices suggests that in practice situations coaches emphasis both orientations equally. However, the PO mean is skewed by Coach 1 who responded with a process-orientation more than twice as much as other coaches. Excluding Coach 1, the mean PO score drops from 6.87 to

Table 16. Game-related Behavioral Indices

Teams	Behavioral Indices						
	RC[a] (Reinforcement Consistency)	PC[a] (Punishment Consistency)	E[a] (Encouragement)	I[a] (Instruction)	PO[a] (Process Orientation)	OO[a] (Outcome Orientation)	CC[a] (Coaching Composite)
1	98.33%	13.64%	42.19%	40.63%	0.53%	6.15%	1.68
2	97.67%	11.49%	51.05%	37.37%	3.62%	8.12%	1.75
3	n/a[b]	n/a	n/a	n/a	n/a	n/a	n/a
4	97.37%	4.88%	62.60%	23.58%	n/a	n/a	1.79
5	76.19%	46.00%	37.58%	34.39%	7.54%	18.45%	1.02
6	96.83%	13.59%	36.26%	43.89%	2.46%	6.06%	1.63
7	94.25%	6.25%	44.83%	48.28%	5.52%	5.29%	1.81
8	91.04%	35.09%	41.45%	43.16%	2.33%	7.88%	1.41
9	98.77%	05.71%	22.97%	70.81%	2.76%	1.41%	1.87
M	93.88%	17.08%	42.36%	42.76%	3.54%	7.60%	1.58
SD	7.56%	15.17%	11.52%	13.57%	2.32%	5.26%	.29

[a] Indices are conditional percentages. Comparison of percentages is made down rather than across columns.

[b] n/a: No game data was collected on Coach 3; no PO/OO data was collected on Coach 4

Table 17. Practice-related Behavioral Indices.

Teams	Behavioral Indices						
	RC[a] (Reinforcement Consistency)	PC[a] (Punishment Consistency)	E[a] (Encouragement)	I[a] (Instruction)	PO[a] (Process Orientation)	OO[a] (Outcome Orientation)	CC[a] (Coaching Composite)
1	90.63%	14.75%	11.55%	50.50%	19.39%	6.51%	1.37
2	93.97%	24.66%	12.93%	32.65%	2.93%	10.86%	1.15
3	99.10%	03.68%	08.00%	56.00%	9.42%	11.15%	1.59
4	77.78%	07.87%	41.23%	18.18%	n/a[b]	n/a	1.29
5	75.96%	51.04%	09.00%	35.00%	3.71%	7.36%	0.69
6	86.61%	21.52%	08.08%	36.87%	5.31%	7.91%	1.10
7	82.22%	27.80%	23.15%	36.24%	5.54%	3.67%	1.14
8	86.67%	34.76%	08.04%	40.48%	4.17%	5.67%	1.00
9	97.68%	17.86%	12.68%	53.46%	4.48%	1.12%	1.45
M	87.85%	22.68%	14.79%	39.93%	6.87%	6.78%	1.98
SD	8.26%	14.35%	11.00%	11.87%	5.42%	3.39%	.27

[a] Indices are conditional percentages. Comparison of percentages is made down rather than across columns.

[b] n/a: insufficient data to calculate indices. No PO/OO data was collected on Coach 4.

Table 18. Overall Behavioral Indices.

Teams	Behavioral Indices						
	RC[a] (Reinforcement Consistency)	PC[a] (Punishment Consistency)	E[a] (Encouragement)	I[a] (Instruction)	PO[a] (Process Orientation)	OO[a] (Outcome Orientation)	CC[a] (Coaching Composite)
1	94.48%	14.19%	26.37%	45.56%	9.96%	6.33%	1.52
2	95.82%	18.08%	31.99%	35.01%	3.28%	9.49%	1.45
3	n/a[a]	n/a	n/a	n/a	n/a	n/a	n/a
4	87.57%	06.38%	51.92%	20.88%	n/a	n/a	1.54
5	76.08%	48.52%	23.29%	34.70%	5.63%	12.91%	.86
6	91.72%	17.56%	22.17%	40.38%	3.89%	6.99%	1.37
7	88.24%	17.03%	33.99%	42.26%	5.53%	4.48%	1.47
8	88.86%	34.92%	24.74%	41.82%	3.25%	6.77%	1.20
9	98.22%	11.79%	17.56%	62.14%	3.62%	1.26%	1.66
Mean	90.12%	21.06%	29.00%	40.34%	5.23%	6.89%	1.38
SD	6.85%	13.80%	10.65%	11.63%	2.97%	3.67%	.25

[a] Indices are conditional percentages. Comparison of percentages is made down rather than across columns.

[b] n/a: insufficient data to calculate indices. No game data was collected on Coach 3; no PO/OO data was collected on Coach 4

4.46. Thus, in general, coaches emphasized a greater outcome than process orientation in practice.

Overall, coaches were slightly more reinforcing of desirable performances in game versus practice situations. In response to undesirable performances, coaches were similar in their behavioral emphasis on punishment, instruction, and outcome orientation, and more encouraging and less process-oriented in game as compared to practice situations.

Lastly, examination of the overall behavioral indices demonstrates that coaches positively reinforced desirable performances. Their most frequent response to athletes' mistakes came in the form of instruction. Encouragement and punishment were the second and third most frequent responses. Notable exceptions to this general finding relative to mistakes were: (a) Coach 4 who responded most frequently with encouragement, (b) Coach 5 who engaged most often with punishment, (c) Coach 8 who although was most often instructive, was also more punishing than encouraging. In addition, coaches were slightly more outcome than process-oriented.

Relationship Between Team Motivational Climate and Behavioral Indices

To examine the relationship between team motivational climate (performance and mastery) and the behavioral indices, correlations between these variables were examined. Only coaches for whom all data were collected were used. Specifically, Coach 3 and Coach 4 were excluded from further analyses as no game observation was made for Coach 3 and process (PO) and outcome (OO) could not be calculated for Coach 4. Team performance and mastery climate are represented by the averaging each team's athletes' performance and mastery scores. Each team has one performance and one mastery climate score. See Table 19 for team means and standard deviations.

Table 19. Team Motivational Climate Means and Standard Deviations.

Climate	Teams						
	1	2	5	6	7	8	9
	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)	M (SD)
Mastery	4.51	4.44	3.04	4.27	4.33	4.26	4.20
	(.61)	(.34)	(.68)	.(48)	(.41)	(.61)	(.36)
Performance	2.08	1.94	3.63	2.56	2.33	2.02	2.73
	(.38)	(.33)	(.78)	(.69)	(.56)	(.48)	(.46)

Descriptive statistics associated with Team Motivational Climate reveal that as a whole athletes on any given team, excluding Team 5, perceived their team to be more mastery than performance oriented. In general, teams were similar in their perception of mastery climate; however, there was greater diversity in the perception of team performance climate.

Correlations between motivational climate and behavioral indices were examined in the overall context (average of behavioral indices associated with practice and game situations). With the small sample size (N = 7), the correlations reported in Table 20 are used for descriptive purposes only. A positive correlation was found between coaching composite scores and mastery orientation, whereas a negative relationship was found between the composite score and performance. These relationships suggest that coaches who gave more reinforcement, instruction, and encouragement and less punishment coached teams who reported higher mastery team climates, whereas coaches who provided less reinforcement, instruction and encouragement and more punishment coached teams who reported greater performance team climates.

Table 20. Correlations Between Overall Behavioral Indices and Team Motivational Climate

	Coaching Behavioral Indices						
Climate	RC	PC	E	I	PO	OO	CC
Mastery	.86**	-.84**	.31	.29	.04	-.62	.83**
Performance	-.69*	.58	-.48	-.03	.00	.37	-.60

Examination of the correlations of motivational climate with reinforcement consistency, instruction, encouragement, and punishment consistencies revealed a positive relationship between mastery climate and reinforcement consistency and a negative relationship between mastery climate and (a) punishment consistency and (b) outcome orientation. A moderate and negative relationship was found between performance climate and reinforcement consistency and a positive correlation was found between performance climate and punishment. Weaker correlations in the expected direction were found among motivation climates and (a) encouragement and (b) instruction consistencies. These results suggest teams who report higher mastery scores are those who were exposed to more reinforcement and less punishment and outcome orientation than teams that received less reinforcement and more punishment and outcome orientation. Additionally, teams who reported higher performance scores were those who received greater punishment by their coaches than those who received less punishment.

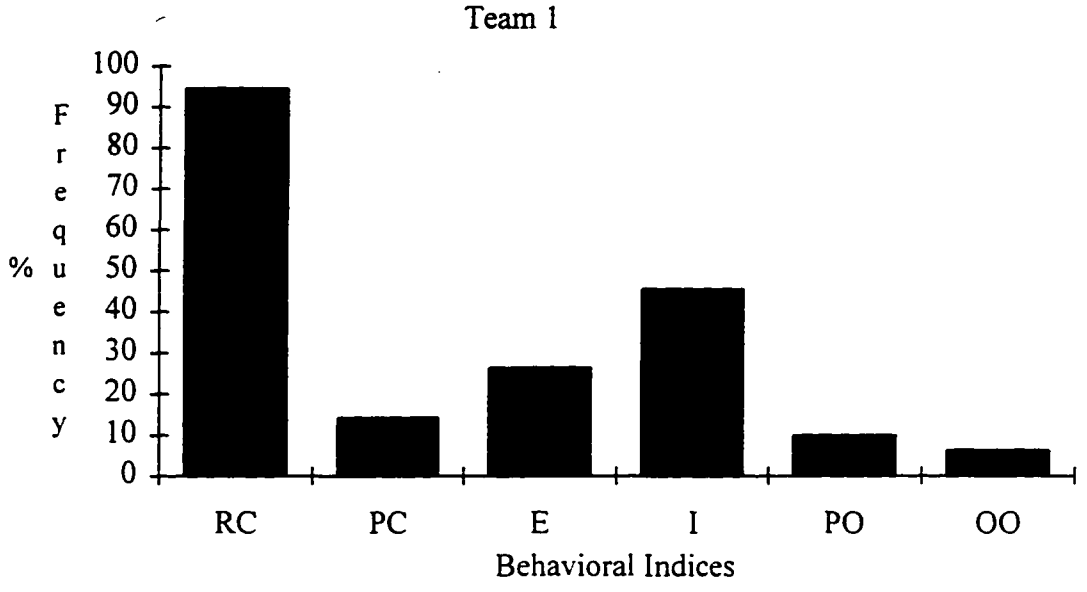
Behavioral Patterns of Coaches and Team Motivational Climate

In addition to correlational analysis, patterns of coaching behaviors relative to team motivational climate were examined by graphing the frequency behavioral indices, RC,

PC, E, I, PO, and OO for each coach (see Figures 1-7). Visual inspection of these graphs reveals that with one exception overall the behavioral patterns of coaches and the Team Motivational Climate Scores were more alike than different. The behavioral patterns associated with Coach 5 and the team's motivational climate scores were different from the other coaches and teams. The primary differences between this coach and others was the frequency of reinforcement and punishment and the team's motivational scores. Specifically, this coach had lower Reinforcement Consistency Scores and higher Punishment Consistency and Outcome Orientation Scores than other coaches, and this team was the only team to have higher scores on team performance climate than mastery climate. The amount of Encouragement, Instruction, and Process Orientation for this coach is similar to that of other coaches.

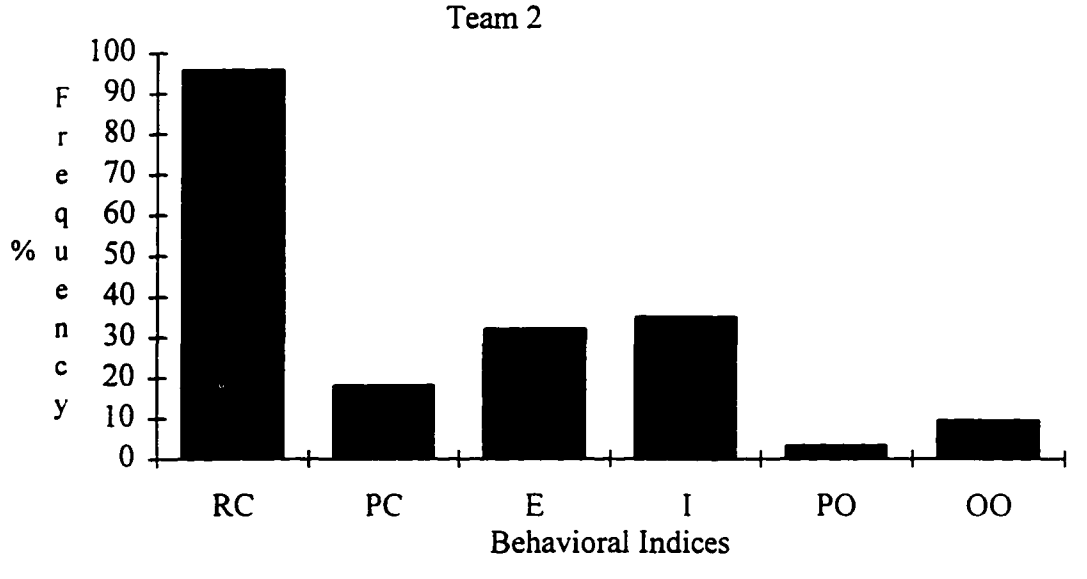
In general, teams were similar in their perception of mastery climate; however, there was greater diversity in the perception of team performance climate. Visual inspection of coaches behavioral patterns and team's motivational climate supports earlier finding that suggested that reinforcement and punishment are factors that may influence perceptions of motivational climate.

Figure 1. Frequencies of Behavioral Indices and Motivational Climate for Team 1.



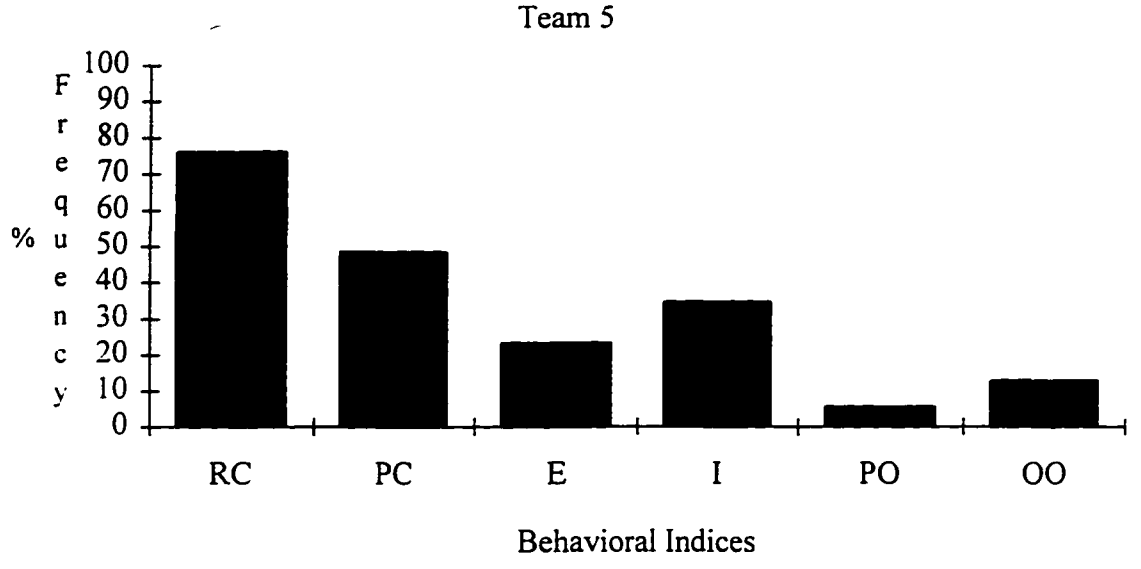
Team 1 Climate Scores: Mastery = 4.51 Performance = 2.08

Figure 2. Frequencies of Behavioral Indices and Motivational Climate for Team 2.



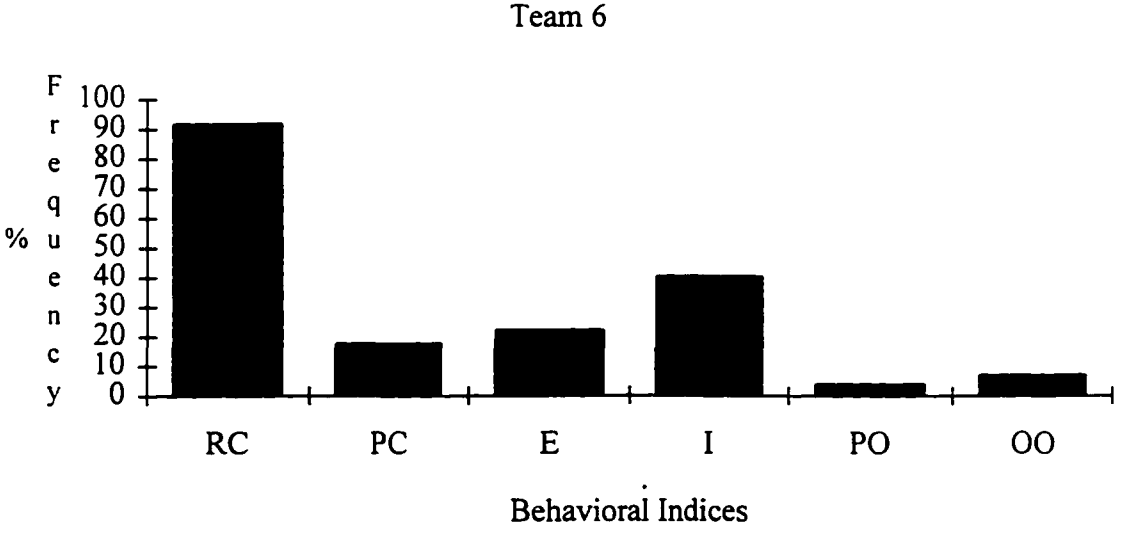
Team 2 Climate Scores: Mastery = 4.44 Performance = 1.94

Figure 3. Frequencies of Behavioral Indices and Motivational Climate for Team 5.



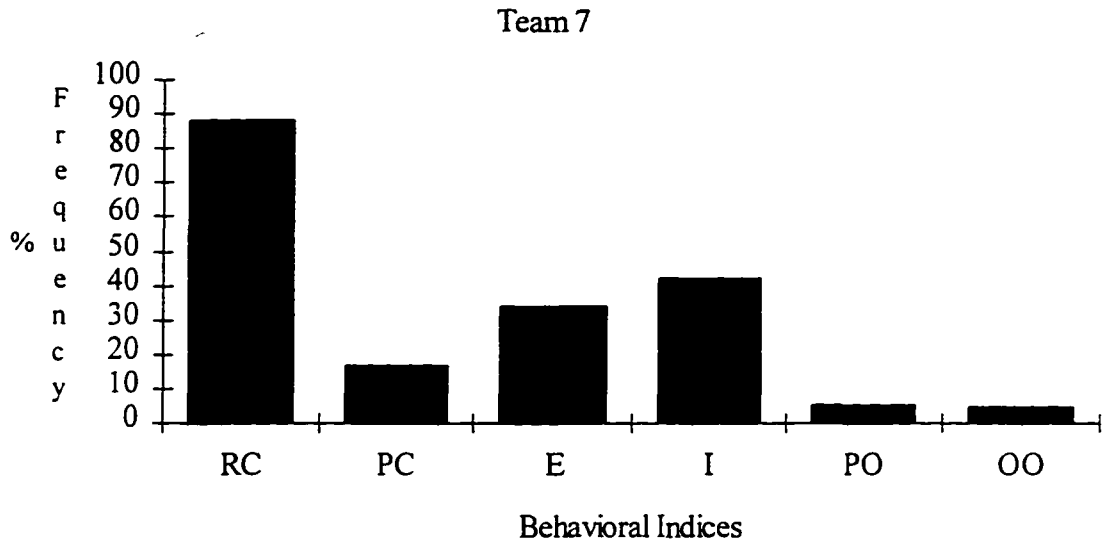
Team 5 Climate Scores: Mastery = 3.04 Performance = 3.63

Figure 4. Frequencies of Behavioral Indices and Motivational Climate for Team 6.



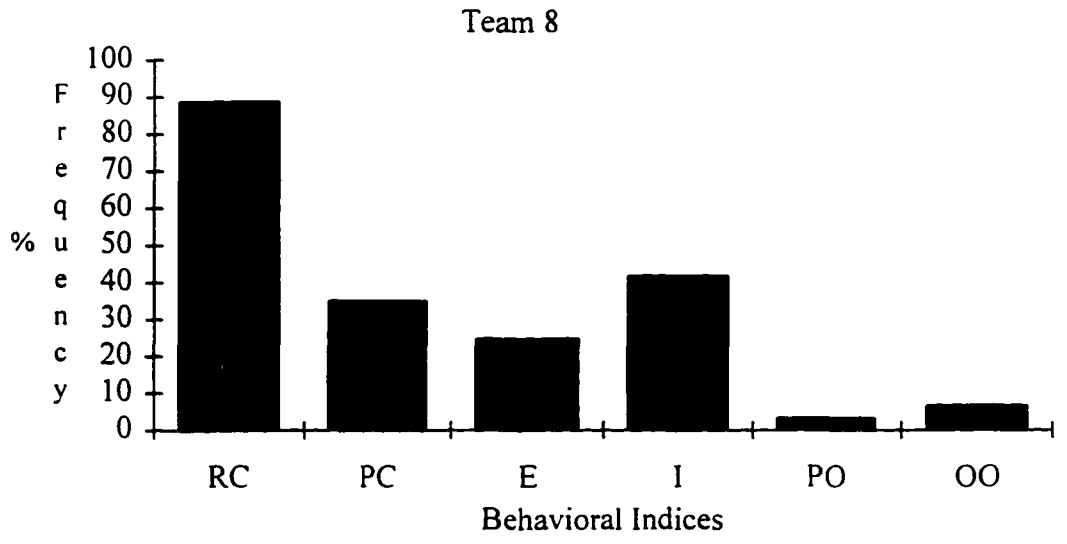
Team 6 Climate Scores: Mastery = 4.27 Performance = 2.56

Figure 5. Frequencies of Behavioral Indices and Motivational Climate for Team 7.



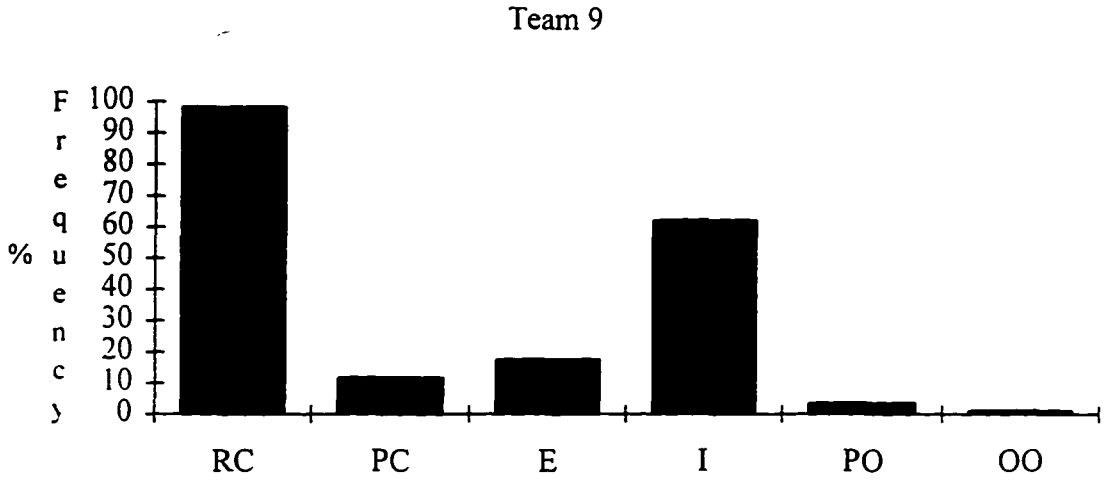
Team 7 Climate Scores: Mastery = 4.33 Performance = 2.33

Figure 6. Frequencies of Behavioral Indices and Motivational Climate for Team 8.



Team 8 Climate Scores: Mastery = 4.26 Performance = 2.02

Figure 7. Frequencies of Behavioral Indices and Motivational Climate for Team 9.



Team 9 Climate Scores: Mastery = 4.20 Performance = 2.73

CHAPTER V

DISCUSSION

The purpose of this study was to examine situational and contextual factors associated with goal perspectives by investigating two primary questions. First, do goal involvement and state anxiety vary as a function of the reward structures associated with athletic games and athletic practices? Second, do goal orientations change over the course of a competitive season as a function of the perceived team motivational climate and coaching behavior? The results pertaining to each of these questions and to the specific hypotheses forwarded under each question are addressed in the following discussion.

In this study, possible influences of reward structure on athletes' goal involvement and state anxiety were examined. Specifically, it was hypothesized that individuals facing a game situation would score higher in ego involvement, higher in state anxiety, and lower in task involvement than when facing a practice situation. Results partially supported this hypothesis. Athletes were higher in cognitive and somatic state anxiety and lower in task involvement before games than before practice situations. Counter to the hypothesis, athletes were not more ego-involved before games than practices. In fact, four of the nine teams in this study were more ego-involved before practice situations than games.

The relationships between goal orientations and motivational climate and between motivational climate and coaching behaviors were also examined. Four hypotheses (hypotheses ii - iv) were forwarded. Two of these hypotheses (ii & iii) focused on the relationship between goal orientations and motivational climate. Specifically, Hypothesis ii stated that perceptions of a mastery climate would relate to increases in athletes' task goal orientation over the course of a competitive season, whereas perceptions of a performance climate would not relate to late season task goal orientation. Results partially supported this hypothesis. Perceptions of a mastery climate contributed positively to late season task orientation scores. Specifically, athletes who perceived a mastery climate (i.e., they believed their team and coach valued cooperative learning, learning, and effort, and stressed that each player has an important role on the team) were more task-oriented at the end of the season as compared to those who perceived a less mastery-oriented climate. Counter to the stated hypotheses, performance climate was associated positively with late season task goal orientation. That is, athletes who perceived that (a) players were punished for mistakes, (b) better players were given preferential treatment, and (c) players were encouraged to compete against teammates were more task-oriented at the end of the season than those who perceived a less performance-oriented climate.

Hypothesis iii stated that perceptions of a performance-oriented climate would relate to increases in athletes' ego goal orientation from early to late season, whereas perceptions of a mastery climate would not relate to increases in athletes' ego goal

orientation. In contrast to this hypothesis, athletes' ego orientation was not related to perceptions of a performance climate. However, as expected, no relationship was found between ego orientation and athletes' perceptions of a mastery climate.

The last two hypotheses (iv & v) pertain to the relationship between motivational climate and coaching behaviors. Hypothesis iv stated that greater mastery climates would be reported by athletes on teams in which the coach gave more instruction, encouragement, reinforcement and process-oriented statements, and less punishment and outcome statements. Results supported this hypothesis. Athletes coached by individuals who made fewer outcome statements and gave more reinforcement, instruction and encouragement relative to the amount of punishment given perceived their teams as more mastery-oriented than athletes on teams whose coaches made more outcome statements and gave less reinforcement, instruction and encouragement relative to the amount of punishment given. Overall, greater reinforcement and less punishment appear influential in fostering perceptions of a mastery climate.

Lastly, hypothesis v stated that greater performance climates would be reported by athletes on teams in which the coach gave less instruction, encouragement and reinforcement, and more punishment and outcome-oriented statements. Support was found for this hypothesis. Specifically, athletes whose coaches were less reinforcing, instructing, and encouraging relative to their punishment behaviors perceived their team to be more performance-oriented than those whose coaches were more reinforcing, instructing, and encouraging and less punishing. Of these behaviors, it appears

punishment without reinforcement contributes to the development of a performance climate.

The results of this study lend partial support to previous research in educational psychology that suggests reward structures are related to goal involvement and affect (Ames, 1985; Ames & Ames, 1981; Butler, 1987). Specifically, this research demonstrated that individuals are less ego- and more task-involved, and experience more positive affect in individualistic than competitive reward structures.

The relationship between goal involvement and state anxiety across competitive sport contexts has been neglected by sport and exercise researchers. However, two studies have focused on the relationship between goal orientations and state anxiety in the sport setting (Duda & Newton, 1993b; Duda et al., 1990). By assessing goal orientation and state anxiety before a competitive tennis match, Duda and her colleagues (1990) demonstrated that in a competitive reward structure (i.e., prior to a competitive tennis match) greater ego orientation was associated with greater state anxiety, whereas there was no relationship between task orientation and anxiety. In a more individualistic reward structure (i.e., bowling class where students were instructed to work hard to improve and have fun), Duda and Newton (1993b) found a negative relationship between task orientation and performance worry, and no relationship between ego orientation and performance worry.

Given the findings in educational psychology research, results of these two sport studies can be used to speculate that the differing relationships between goal orientation

and anxiety are function of the reward structure. Given the theoretical similarity between goal involvement and goal orientations, the results of these studies and the current study suggest that individuals are more task-oriented and less anxious in individualistic than competitive reward structures. Interestingly, however, the results of the present study do not support the contention that athletes are more ego-oriented in a competitive environment. Athletes in the present study were more task-involved and less anxious in practice than in game situations. However, they were no more ego-involved in game than practice situations.

Findings from the present study also support, in part, results from other investigations that have examined the relationship between motivational climate and goal orientations in both academic and sport contexts (Ames & Archer, 1988; Duda et al., 1992; Ebbeck & Becker, 1994). In an academic setting, Ames and Archer (1988) surveyed 176 secondary level students and found that individuals who perceived a mastery climate were more likely to display attitudes related to a task orientation, whereas those who perceived a performance climate were more likely to have attitudes akin to ego orientation. Support for these results was found by Duda et al. (1992) when they replicated and extended the work of Ames and Archer (1988) in the sport setting, using the PMCSQ with male varsity athletes. Interestingly, Ebbeck and Becker (1994) found that task goal orientation was associated with mastery climate, but that ego orientation was not associated with perceptions of a performance climate. Thus, similar to previous research, the results of the present study found a positive relationship between

task orientation and mastery. However, this study's finding of a positive relationship between task orientation and performance climate is counter to those demonstrated in previous research.

Previous research has employed designs requiring one time assessment of goal orientations. The present study extended this work by examining the relationship between motivational climate and goal orientations from early to late in the season. The results demonstrate that there is some change in task goal orientation across a competitive season that is related to athletes' perception of a motivational climate. This suggests that athletes who perceive a stronger mastery team climate are more likely to become more task-oriented over the course of a competitive season than those who do not believe as strongly that their team is mastery-oriented.

Results from this study also support research findings showing that coaching behaviors are related to athletes' self-perceptions (Chaumeton & Duda, 1988; Horn, 1985; Smith et al.; 1979). Using the CBAS, Smith et al. (1979) demonstrated that athletes coached by individuals who were trained to stress contingent instruction and encouragement rated their coaches and their sport experience more positively than untrained coaches. Horn (1985) also found that criticism was related to increases in athletes' perceptions of competence. In 1988, Chaumeton and Duda suggested that coaches who focused on the skill process provide more task-involving feedback, whereas coaches who focus on outcome provide more ego-involving feedback. Together these studies suggest a relationship between motivational climate and coaching behaviors. The

results of the present study indicate that coaches who reinforce desirable athlete behavior more often and punish athlete errors less often are more likely to have athletes who perceive a mastery-oriented team climate. In contrast, perceptions of a performance-oriented climate are more likely to be created by coaches who are more likely to punish athlete mistakes and provide less reinforcement for desirable behaviors.

Although not central to the purposes of the present study, it is notable that the number of total coaching behaviors for each coach, despite the variability, was slightly less than those found by Horn (1982). Specifically, in the present study the average number of coach behaviors in games ranged from 211 to 337, while Horn reported the average number of coaching behaviors ranged from 107 to 279. The average number of practice behaviors for coaches in the current study ranged from 192 to 388.5, while Horn reported the average number of coaching behaviors in practice ranged from 125 to 249. A comparison of the relative frequency of 12 CBAS coaching behaviors demonstrated by the eight coaches in the present study were somewhat variable. Despite this variability, the coaches in the present study displayed frequency of coaching behaviors as found by Horn (1982). For example, in Horn's (1982) study, the average frequency of game reinforcement was 23.84 (SD = 9.27) while the average game reinforcement frequency in the present study was 21.75 (SD = 4.4). In comparing practice behaviors, the average frequency of reinforcement was 26.02 (SD = 11.33) and 20.78 (SD = 3.86) in Horn's (1982) and the present study, respectively. Overall, the coaches in the current study

appear to display similar behaviors as demonstrated by coaches in previous research (Horn, 1982).

Theoretical Implications

This study was designed within a specific theoretical framework of achievement motivation, and results will be discussed relative to the work of two contemporary social cognitive theorists, Nicholls (1989) and Ames (1992). Overall, the results of the present study contribute to the knowledge base proposed by these theorists and researchers. In addition, the results raise several interesting issues pertaining to this overall theoretical framework.

Ames (1984a) and Nicholls (1989) contend that competitive structures tend to increase self-awareness and entice individuals to socially compare thereby inducing a state of ego-involvement, which is accompanied by a feeling of anxiety. Conversely, more individualistic and less evaluative situations induce task involvement and are devoid of anxiety. These propositions are brought into question by the findings that some athletes in the present study were (a) more ego-involved in practice than in game situations and (b) experience different levels of state somatic anxiety during games and practices in the absence of a corresponding change in ego involvement. This may be an indicator that additional factors may influence athletes goal involvement.

The study of goal involvement is important to the development of theoretical understanding of goal perspectives in the sport context. Nicholls (1989) clearly distinguished between the state of goal involvement and dispositional goal orientation.

This distinction has been neglected in goal perspective research in sport that has focused on factors associated with goal orientations rather than goal involvement. As a result, goal orientation and goal involvement, although similar yet distinct constructs, have been used interchangeably. For example, Lochbaum and Roberts (1993) assessed goal orientation with the TEOSQ and stated the results in terms of goal orientations. Yet in their discussion, they discuss in terms of goal involvement by stating, "Task-involved athletes generally endorse adaptive achievement strategies ... Ego-involved athletes, instead, endorsed ...." (p. 168). The changes in task involvement associated with different reward structure found in the present study highlight the need for maintaining theoretical clarity through the use of correct terminology.

Results of the present study support Ames' (1984a, 1992) and Nicholls' (1989) contention that extended exposure to a more individualistic, mastery climate will result in a greater task orientation. However, counter to their view that exposure to a competitive, performance climate leads to a stronger ego orientation, it appears that a performance climate fosters a task and not an ego orientation. The finding that perceptions of a mastery and performance climate related positively to changes in task orientation may be a phenomenon unique to sport. The nature of sport is characterized by interpersonal competition, in which learning, collaborative effort, and valuing other teammates is stressed because it is believed that these attributes will lead to objective success in the form of winning. That is, athletes often learn that to win, one must learn, try hard, and work well with others. It is possible that changes in athletes' task orientation were

impacted primarily by their perceptions of a mastery climate, without losing sight of the values associated with a performance climate.

The present study extended the existing research on goal perspective theory which has shown that a single assessment of goal orientation is related to motivational climate (Duda & Newton, 1993a; Duda, et al., 1992). This study assessed goal orientation twice over the course of a competitive season and demonstrated that changes in task goal orientations are related to individuals' perceptions of their team's motivational climate. Thus, dispositional goal orientations can be impacted through sport participation.

The present study also lends support to theory and research associated with the socialization of youth sport participants that has demonstrated the importance of parents, peers, teachers and coaches (Coakley, 1987; Greendorfer, 1977; Greendorfer & Ewing, 1981; Horn, 1985; Martinek, 1981; Smith et. al, 1979). The results of the present study suggest that coaching behaviors demonstrated over the course of a competitive season may influence athletes' perceptions of the motivational climate associated with their team.

Suggestions for Future Research

Based on the findings of the current study, a number of future directions can be forwarded. First, reward structures may be one of several factors that serve to induce a particular goal involvement. Thus, examination of additional factors affecting the change in goal involvement across specific and qualitatively different situations is needed. For example, factors such as coach or parent behaviors, game importance, pre-game

confidence, or perceptions of competence may influence the goal involvement of athletes in particular reward structures. Studies could examine the relationship between goal involvement and psychological factors including attributions and intrinsic motivation across different reward structures.

Second, it will be of value to continue the examination of the relationship between goal involvement and state anxiety in different reward structures. The lack of support for hypothesis (i) may suggest theory modification. It is possible that some aspects of Nicholls' (1989) goal perspective theory do not apply to the sport context. If this is the case, adapting current theory or developing sport-specific theory to explain behavior and attitudes specific to sport would be a worthy endeavor.

Third, measurement studies are needed to validate the GISQ as a measure of goal involvement before definite conclusions can be made. This was one of the first studies to examine goal involvement via a questionnaire. The GISQ is a modified version of the TEOSQ and was designed for the purpose of this study. As a result, its validity and reliability remain questionable.

Fourth, early season goal orientations and motivational climate explained less than 35% of the variance in late season goal orientations. This indicates that other factors may influence development in goal orientations. The influence of socializing agents may be one avenue to explore. Results of the present study demonstrated that coaches' behaviors were related to motivational climate and that motivational climate was related to changes in goal orientation. Thus, coaching behaviors may also have a direct impact on goal

orientations. The behaviors of other individuals such as parents, teachers, teammates, and friends may also serve as agents of change.

Fifth, methodological concerns associated with the investigation of the role of socializing agents in the development of motivational climate and goal orientations of athletes is another area in need of further investigation. At present, research in this area has assessed the impact of significant others by assessing athlete perceptions of the significant others' attitudes or behaviors (Duda & Hom, 1993; Ebbeck & Becker, 1994). It is never clear whether the measurement of athletes' goal orientation and perceived goal orientation of the significant other are in reality assessing the same construct. The present study attempted to circumvent this issue by assessing actual coach behavior. Unfortunately, new concerns surfaced. Examination of team motivational climate resulted in sample size concerns and brings into question issues of generalizability. Serious attention needs to be given to these methodological concerns if we are to gain greater insight in to the role of socializing agents on motivational climate goal orientations.

Lastly, the present study demonstrated changes in task goal orientation with two assessments over an eight to nine week time period. This short time span may serve as a factor limiting the development of goal orientations, and in particular, the study of the factors related to this development. Specific to this study, it may be that with increased time, motivational climate would have had a greater influence on goal orientations. Future research should consider assessing change over a longer period of time.

Additionally, a greater understanding of the development of goal orientations over time may be enhance through multiple assessments.

Conclusions

In conclusion, two of the three important findings in this study are associated with goal perspective theory. First, athletes were more task-involved and less anxious in practice as compared to game situations. Second, task goal orientation did change over the course of the season as a function of perceptions of a mastery and performance climate. These findings illustrate the need for continued examination of factors related to changes in and development of goal perspectives. It is evident from the findings in this study that closer examination of the theory forwarded by Ames (1984a, 1992) and Nicholls (1989) concerning the influence of reward structures and motivational climate is needed. It is possible that the context of sport offers athletes an environment that is different enough from the academic setting to the degree that theories grounded in mainstream psychology need to be adapted for the sport context.

The third and final primary finding in this study demonstrated that coaching behaviors impact the athletes' perceptions of their team's motivational climate. Although methodological issues surround this area of research, this finding suggests that future research should consider the influence of other socializing agents.

BIBLIOGRAPHY

Ames, C. (1984a). Competitive, cooperative and individualistic goal structures: A cognitive motivational analysis. In R. Ames & C. Ames (Eds.), Research on motivation in education: Student motivation. (pp. 177-207). New York: Academic Press.

Ames, C. (1984b). Conceptions of motivation within competitive and noncompetitive goal structures. In R. Schwarzer (Eds.), Self-related cognitions in anxiety and motivation Hillsdale, NJ: Erlbaum.

Ames, C. (1985). Achievement attributions and self instructions under competitive and individualistic goal structures. Journal of Educational Psychology, 178-187.

Ames, C. (1987). The enhancement of student motivation. In D. A. Kleiber & M. Maehr (Eds.), Advances in motivation and achievement (pp. 123-148). Greenwich, CT: JAI Press.

Ames, C. (1992). Achievement goals, motivational climate, and motivational processes. In G. C. Roberts (Eds.), Motivation in sport and exercise (pp. 161-176). Champaign, IL: Human Kinetics.

Ames, C., & Ames, R. (1981). Competitive versus cooperative reward structures: The salience of past performance information for causal attributions and affect. Journal of Educational Psychology, 73, 411-418.

Ames, C., & Ames, R. (1984). Goal Structures and Motivation. The Elementary School Journal, 85, 39-52.

Ames, C., & Archer, J. (1988). Achievement goals in the classroom: Students' learning strategies and motivation processes. Journal of Educational Psychology, 80, 260-267.

Ames, C., & Felker, D. W. (1979). An examination of children's attributions and achievement related evaluations in competitive, cooperative, and individualistic reward structures. Journal of Educational Psychology, 71, 413-420.

Barnett, N. P., Smoll, F. L., & Smith, R. E. (1993). Effects of enhancing coach-athlete relationships on youth sport attrition. The Sport Psychologist, 6, 111-127.

Burton, D. (1989). Winning isn't everything: Examining the impact of performance goals on collegiate swimmers' cognitions and performance. The Sport Psychologist, 3, 105-132.

Burton, D., & Martens, R. (1986). Pinned by their own goals: An exploratory investigation into why kids drop out of wrestling. Journal of Sport Psychology, 8, 183-197.

Butler, R. (1987). Task-involving and ego-involving properties of evaluation: Effects of different feedback conditions on motivational perceptions, interest and performance. Journal of Educational Psychology, 79, 474-482.

Chaumeton, N., & Duda, J. L. (1988). Is it how you play the game or whether you win or lose?: The effect of competitive level and situation on coaching behaviors. Journal of Sport Behavior, 11, 157-174.

Church, R. M. (1968). Application of behavior theory to social psychology: Imitation and competition. In E. C. Simmel, R. H. Hoppe, & G. A. Milton (Eds.), Social facilitation and imitative behavior (pp. 135-168). Boston, MA: Allyn & Bacon.

Coakley, J. (1993). Social determinants of intensive training and participation in youth sports. In B. R. Cahill & A. J. Pearl (Eds.), Intensive participation in children's sports (pp. 77-94). Champaign, IL: Human Kinetics.

Coakley, J. J. (1987). Children and the socialization process. In D. Gould & M. R. Weiss (Eds.), Advance in pediatric sport science (pp. 43-60). Champaign, IL: Human Kinetics.

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

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. Psychometrika, 16, 697-334.

Darst, P., Zakrajsek, D., & Mancini, V. (Eds.). (1989). Analyzing Physical Education and Sport. Champaign, IL: Human Kinetics.

Deci, E. L., & Ryan, R. M. (1985). Intrinsic motivation and self-determination in human behavior. New York: Plenum.

Diener, C., & Dweck, C. (1978). An analysis of learned helplessness: Continuous changes in performance, strategy, and achievement cognitions following failure. Journal of Personality and Social Psychology, 36, 451-462.

Duda, J. L. (1981). Cultural effects on achievement motivation in sport and the classroom: The conceptual implications of an exploratory study. In G. C. Roberts & D. M. Landers (Eds.), Psychology of motor behavior and sport-1980 (p.122). Champaign, IL: Human Kinetics.

Duda, J. L. (1985). Goals and achievement or orientations of Anglo and Mexican-American adolescents in sport and the classroom. International Journal of Sport Psychology, 9, 131-150.

Duda, J. L. (1986). Perceptions of sport success and failure among White, Black, and Hispanic adolescents. In J. Watkins, T. Reilly, & L. Burwitz (Eds.), Sport Science (pp. 214-222). London: Spon.

Duda, J. L. (1987). Toward a developmental theory of children's motivation in sport. Journal of Sport Psychology, 9, 130-145.

Duda, J. L. (1988). The relationship between goal perspectives and persistence and intensity among recreational sport participants. Leisure Sciences, 10, 95-101.

Duda, J. L. (1989a). Goal perspectives, participation and persistence in sport. International Journal of Sport Psychology, 20, 42-56.

Duda, J. L. (1989b). Goal perspectives and behavior in sport and exercise settings. In C. Ames & M. Maehr (Eds.), Advances in motivation and achievement: Motivation enhancing environments (pp. 81-115). Greenwich, CT: JAI Press.

Duda, J. L. (1989c). Relationship between task and ego orientations and the perceived purpose of sport among high school athletes. Journal of Sport and Exercise Psychology, 11, 318-335.

Duda, J. L. (1992). Motivation in sport settings: A goal perspective approach. In G. C. Roberts (Eds.), Motivation in Sport and Exercise (pp. 57-91). Champaign, IL: Human Kinetics.

Duda, J. L., & Allison, M. T. (1990). Cross-cultural analysis in exercise and sport psychology: A void in the field. Journal of Exercise and Sport Psychology, 12, 114-131.

Duda, J. L., & Hom, H. L. (1993). Interdependencies between the perceived and self-reported goal orientations of young athletes and their parents. Pediatric Exercise Science, 5, 234-241.

Duda, J. L., & Nicholls, J. G. (1992). Dimensions of achievement motivation in schoolwork and sport. Journal of Educational Psychology, 84, 290-299.

Duda, J. L., Chi, L., & Newton, M. (1990). Psychometric characteristics of the TEOSQ. A paper presented at the national conference of the North American Society for the Psychology of Sport and Physical Activity, Houston, TX:

Duda, J. L., Chi, L., Newton, M. L., Walling, M. D., & Catley, D. (1994). Task and ego orientation and intrinsic motivation in sport. International Journal of Sport Psychology. 25,

Duda, J. L., Fox, K. R., Biddle, S. J. H., & Armstrong, N. (1992). Children's achievement goals and beliefs about success in sport. British Journal of Educational Psychology. 62, 313-323.

Duda, J. L., Olson, L. K., & Templin, T. J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and perceived legitimacy of injurious acts. Research Quarterly for Exercise and Sport, 62, 79-87.

Dweck, C. (1986). Motivational processes affecting learning. American Psychologist. 41, 1040-1048.

Dweck, C. S., & Elliott, E. S. (1983). Achievement motivation. In E. M. Hetherington (Eds.), Socialization, personality, and social development (pp. 643-691). New York: Wiley.

Ebbeck, V., & Becker, S. L. (1994). Psychosocial predictors of goal orientations in youth soccer. Research Quarterly for Exercise and Sport, 65, 355-362.

Eccles, J. S., & Harrold, R. D. (1991). Gender differences in sport involvement: Applying the Eccles' expectancy-value model. Journal of Applied Sport Psychology, 3, 7-35.

Elliot, E. S., & Dweck, C. S. (1988). Goals: An approach to motivation and achievement. Journal of Personality and Social Psychology, 54, 5-12.

Gill, D. L., & Deeter, T. F. (1988). Development of the Sport Orientation Questionnaire. Research Quarterly for Exercise and Sport, 59, 191-202.

Gill, D. L., Gross, J. B., & Huddleston, S. (1983). Participation motivation in youth sports. International Journal of Sport Psychology, 14, 1-14.

Gould, D., Feltz, D., & Weiss, M. R. (1985). Motives for participation in competitive youth sports. International Journal of Sport Psychology, 16, 126-140.

Greendorfer, S. (1977). Role of socializing agents in female sport involvement. Research Quarterly for Exercise and Sport, 48, 305-310.

Greendorfer, S. L., & Ewing, M. (1981). Race and sex differences in children's socialization into sport. Research Quarterly for Exercise and Sport, 52, 301-310.

Harackiewicz, J. M., Abrahams, S., & Wageman, R. (1987). Performance evaluation and intrinsic motivation: The effects of evaluative focus, rewards, and achievement orientation. Journal of Personality and Social Psychology, 53, 1015-1023.

Harter, S. (1981). A model of intrinsic mastery motivation in children: Individual differences and developmental change. In W. A. Collins (Eds.), Minnesota Symposium on Child Psychology (pp. 215-255). Hillsdale, NJ: Erlbaum.

Horn, T. S. (1984). Expectancy effects in the interscholastic athletic setting: Methodological considerations. Journal of Sport Psychology, 6, 60-76.

Horn, T. S. (1985). Coaches' feedback and changes in children's perceptions of their physical competence. Journal of Educational Psychology, 77, 174-186.

Jones, E. E., & Gerard, H. B. (1967). Foundations of social psychology. New York: Wiley.

Kenyon, G. S., & McPherson, B. D. (1974). An approach to the study of sport socialization. International Review of sport Sociology, 9, 127-138.

Kimiecik, J. C., Allison, M. T., & Duda, J. L. (1986). Performance satisfaction, perceived competence and game outcome: The competitive experience of boys' club youth. International Journal of Sport Psychology, 17, 255-268.

Klint, K. A., & Weiss, M. R. (1986). Dropping in and dropping out: Participation motivation of current and former youth gymnasts. Canadian Journal of Applied Sport Psychology, 11, 106-114.

Lochbaum, M. R., & Roberts, G. C. (1993). Goal orientations and perceptions of the sport experience. Journal of Sport and Exercise Psychology, 15, 160-171.

Maehr, M. L. (1984). Meaning and motivation: Toward a theory of personal investment. In R. Ames & C. Ames (Eds.), Research on motivation in education New York, NY: Academic Press.

Maehr, M. L., & Braskamp, L. (1986). The motivation factor: A theory of personal investment. Lexington, MA: D.C. Health.

Maehr, M. L., & Nicholls, J. G. (1980). Culture and achievement motivation: A second look. In N. Warren (Eds.), Studies in cross-cultural psychology (pp. 221-267). New York: Academic Press.

Martens (1988). Youth sports in the U.S.A. In R. A. Magill, M. J. Ash, & F. L. Smoll (Eds.), Children in Sport (pp. 17-24). Champaign, IL: Human Kinetics.

Martens, R. (1975). Social psychology and physical activity. New York: Harper & Row.

Martens, R. (1976). Competition: In need of a theory. In D. M. Landers (Eds.). Social problems in athletics (pp. 9-17). Urbana, IL: University of Illinois Press.

Martens, R., Vealey, R.S., & Bruton, D. (1990). Competitive anxiety in sport. Champaign, IL: Human Kinetics.

Martinek, T. J. (1988). Confirmation of a teacher expectancy model: Student perceptions and causal attributions of teacher behaviors. Research Quarterly for Exercise and Sport, 59, 118-126.

McPherson, B. D., & Brown, B. A. (1988). The structure, processes, and consequences of sport for children. In R. A. Magill, M. J. Ash, & F. L. Smoll (Eds.), Children in Sport (pp. 265-286). Champaign, IL: Human Kinetics.

Newton, M. L. (1994) The relationship between perceived motivational climate and dispositional goal orientation on selected indices of intrinsic motivation. . Paper presented at the annual conference for the Association for the Advancement of Applied Sport Psychology, Tahoe, NV.

Newton, M., & Duda, J. L. (1992). The relationship of goal perspectives to multidimensional trait anxiety in adolescent tennis players. Paper presented at the annual conference for the the Association for the Advancement of Applied Sport Psychology, Pittsburgh, PA.

Newton, M., & Duda, J. L. (1993a). Elite adolescent athletes' achievement goals and beliefs concerning success in tennis. Journal of Sport and Exercise Psychology, 15. 437-448.

Newton, M., & Duda, J. L. (1993b). The relationship of task and ego orientation to performance-cognitive content, affect, and attribution in bowling. Journal of Sport Behavior, 16, 209-220.

Nicholls, J. G. (1978). The development of the concepts of effort and ability, perception of own attainment, and the understanding that difficult tasks require more ability. Child Development, 49, 800-814.

Nicholls, J. G. (1984a). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. Psychological Review, 91, 328-346.

Nicholls, J. G. (1984b). Conceptions of ability and achievement motivation. In R. E. Ames & C. Ames (Eds.), Research on Motivation in Education Vol. 1: Student Motivation (pp. 39-73). New York: Academic Press.

Nicholls, J. G. (1989). The competitive ethos and democratic education. Cambridge, MA: Harvard University Press.

Nicholls, J. G. (1990). What is ability and why are we mindful of it? A developmental perspective. In R. J. Sternberg & J. Kolligan (Eds.), Competence considered (pp. 11-40). New Haven, CT: Yale University Press.

Nicholls, J. G., & Miller, A. T. (1983). The differentiation of the concepts of difficulty and ability. Child Development, 54, 951-959.

Nicholls, J. G., & Miller, A. T. (1984). Development and its discontents: The differentiation of the concept of ability. In J. G. Nicholls (Eds.), Advances in motivation and achievement: The development of achievement motivation (pp. 185-218). Greenwich, CT: JAI Press.

Petlichkoff, L. M. (1992). Youth sport participation and withdrawl: Is it simply a matter of fun? Pediatric Exercise Science, 4, 104-110.

Prentice, D. A., & Miller, D. T. (1992). When small effects are impressive. Psychological Bulletin, 112, 160-164.

Rejeski, W., Darracott, C., & Hutslar, S. (1979). Pygmalion in youth sport: A field study. Journal of Sport Psychology, 1, 311-319.

Roberts, C. G. (1992). Motivation in sport and exercise: Conceptual constraints and convergence. In C. G. Roberts (Eds.), Motivation in sport and exercise (pp. Champaign, IL: Human Kinetics.

Roberts, G. C. (1984). Achievement motivation in children's sport. In J. Nicholls (Eds.). Advances in motivation and achievement: The development of achievement motivation (pp. 251-281). Greenwich, CT: JAI Press.

Roberts, G. C., & Duda, J. L. (1984). Motivation in sport: The mediating role of perceived ability. Journal of Sport Psychology, 6, 312-324.

Roberts, G. C., & Treasure, D. C. (in press). Achievement goals, motivational climate, and achievement strategies and behaviors in sport. International Journal of Sport Psychology.

Roberts, G. C., Klieber, D. A., & Duda, J. L. (1981). An analysis of motivation in children's' sport: The role of perceived competence in participation. Journal of Sport Psychology, 3, 206-216.

Scanlan, T. K. (1984). Competitive stress and the child athlete. In J. M. Silva & R. S. Weinberg (Eds.), Psychological foundations of sport (pp. 118-129). Champaign, IL: Human Kinetics.

Scanlan, T. K. (1988). Social evaluation and the competitive process. In F. L. Smoll, R. A. Magill, & M. J. Ash (Eds.), Children in Sport Champaign, IL: Human Kinetics.

Scanlan, T. K., & Lewthwaite, R. (1986). Social psychological aspects of competition for male youth sport participants: Predictors of enjoyment. Journal of Sport Psychology, 8, 25-35.

Seifriz, J. L., Duda, J. L., & Chi, L. (1992). The relationship of perceived motivational climate to intrinsic motivation and beliefs about success in basketball. Journal of Sport and Exercise Psychology, 14, 375-391.

Smith, R. E., Smoll, F. L., & Curtis, B. (1979). Coach effectiveness training: A cognitive-behavioral approach to enhancing relationship skills in youth sport coaches. Journal of Sport Psychology, 1, 59-75.

Smith, R. E., Smoll, F. L., & Hunt, E. B. (1978). A system for the behavioral assessment of athletic coaches. Research Quarterly for Exercise and Sport, 49, 4.

Smith, R. E., Smoll, F. L., & Hunt, E. B. (1977). Training manual for the coaching behavior assessment (CBAS): JSAS Catalog of Selected Documents in Psychology, 1,2. (MS No. 1406)

Smoll, F. L., & Smith, R. E. (1980). Psychologically-oriented coach training programs: Design, implementation, and assessment. In C. H. Nadeau, W. R. Halliwell, K. M. Newell, & G. C. Roberts (Eds.), Psychology of motor behavior-1979 (pp. 112-129). Champaign, IL: Human Kinetics.

Spink, K. S., & Roberts, G. C. (1980). Ambiguity of outcome and causal attributions. Journal of Sport Psychology, 2, 237-244.

Treasure, D. C., & Roberts, G. C. (1994). Cognitive and affective concomitants of task and ego orientation during middle school years. Journal of Sport and Exercise Psychology, 16(1), 15-28.

Vealey, R. S. (1988). sport-confidence and competitive orientation: An addendum on scoring procedures and gender difference. Journal of Sport and Exercise Psychology, 10, 471-478.

Veroff, J. (1969). Social comparison and the development of achievement motivation. In C. Smith (Eds.), Achievement related motives in children (pp. 46-110). New York: Russell Sage Foundation.

Walling, M. D., Duda, J. L., & Chi, L. (1993). The perceived motivational climate in Sport Questionnaire: Construct and predictive validity. Journal of Sport and Exercise Psychology, 15, 172-183.

Weiss, M. R. (1993). Psychological effects of intensive sport participation on children and youth: Self-esteem and motivation. In B. R. Cahill & A. J. Pearl (Eds.), Intensive sport participation in children's sports (pp. 39-69). Champaign, IL: Human Kinetics.

Weiss, M. R., & Chaumeton, N. (1992). Motivational Orientations in Sport. In T. S. Horn (Ed.), Advances in Sport Psychology (pp. 61-99). Champaign, IL: Human Kinetics.

Weiss, M. R., & Petlichkoff, L. M. (1989). Children's motivation for participation in and withdrawl from sport: identifying the missing links. Pediatric Exercise Science, 2(2), 195-211.

White, S. A., & Duda, J. L. (1994). The relationship of gender, level of sport involvement, and participation motivation to task and ego orientation. International Journal of Sport Psychology, 25, 4-18.

White, S. A., & Duda, J. L. (1994). The interdependence between goal perspectives, psychological skills, and cognitive interference among elite skiers. Paper presented at the annual meeting of the Association for the Advancement of Applied Sport Psychology, Savannah, GA.

White, S. A., Duda, J. L., & Keller, M. R. (1993). The relationship between goal orientation and perceived purposes of sport among youth sport participants. Journal of Sport and Exercise Psychology, Manuscript under review.

Williams, L. (1994a). Goal orientations and athletes' preferences for competence information sources. Journal of Sport and Exercise Psychology, 16, 416-430.

Williams, L. (1994b). The role of perceived competence in the motivation of physical activity. Paper presented at the national conference of the Association for the Advancement of Applied Sport Psychology, Tahoe, NV.

Yin, Z. Boyd, M., & Callaghan, J. (1991). Patterns between task/ego goal orientations and their cognitive/affective correlates in high school athletes. Paper presented at the national conference of the Association for the Advancement of Applied Sport Psychology, Savannah, GA.

APPENDIX A: ATHLETIC BACKGROUND QUESTIONNAIRE

BACKGROUND QUESTIONS

1. How old are you ? _____ Date of Birth _____

2. What is your race or ethnicity? African-American/Black _____

   Asian/Middle Eastern _____

   European-American/White _____

   Mexican-American/Hispanic _____

   Native American _____

   Other, please specify _____

6. How many years have you played for this year's coach? _____
   (Count this year as one)

7. Were you on this softball team last year? NO _____ YES_____

   If YES,

   - did you play in most of the games? NO _____ YES _____
   - did you start most of the games? NO _____ YES _____

8. How many years have you competed on an organized softball team (middle or high school teams, club or community teams)? _____
   (Count this year as one)

9. Have you ever played community (parks & rec., church league...) softball?

   NO _____ YES_____.....IF YES, how many years? _____

10. Approximately how many hours a week do you practice softball in your free time (outside of regular practice time)? _____

APPENDIX B. ATHLETIC HISTORY QUESTIONNAIRE

YOUR ATHLETIC HISTORY

1. What was your team's win-loss record? _____ wins & _____ losses

2. Overall, how successful do you think this season was for you?

1	2	3	4	5
very unsuccessful	unsuccessful	somewhat successful	successful	very successful

3. Why did you give yourself this (question 2) rating of success?

_____

_____

_____

4. Overall, how successful do you think this season was for your team

1	2	3	4	5
very unsuccessful	unsuccessful	somewhat successful	successful	very successful

5. Why did you give your team this (question 4) rating of success?

_____

_____

_____

6. Approximately how many hours a week do you practiced softball in your free time (outside of regular practice time)? _____

APPENDIX C. TASK AND EGO ORIENTATION IN SPORT QUESTIONNAIRE

PERSONAL ATTITUDES ABOUT SPORT

Directions: Please read the underlined phrase that begins I feel most ... Then answer each of the following statements and indicate how much you personally agree with each statement by circling the response (strongly agree to strongly disagree) which best expresses your feeling.

When do you feel most successful in sport? In other words, when do you feel a sport activity has gone really good for you?

I feel most successful in softball when...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I'm the only one who can do the play or skill.	SD	D	N	A	SA
I learn a new skill or play and I want to do it more.	SD	D	N	A	SA
I can do better than my friends.	SD	D	N	A	SA
The others can't do as well as me.	SD	D	N	A	SA
I learn a skill or play that is fun to do.	SD	D	N	A	SA
Others mess-up and I don't.	SD	D	N	A	SA
I learn a new skill or play by trying hard.	SD	D	N	A	SA
I work really hard at playing softball.	SD	D	N	A	SA
I score the most runs, hits, or points.	SD	D	N	A	SA
A skill I learn a makes me want to play it more.	SD	D	N	A	SA
I' m the best.	SD	D	N	A	SA
A skill I learn really feels right.	SD	D	N	A	SA
I do my very best.	SD	D	N	A	SA

APPENDIX D. GOAL INVOLVEMENT IN SPORT QUESTIONNAIRE

PERSONAL ATTITUDES ABOUT TODAY'S GAME OR PRACTICE

Directions: Please read the underlined phrase that begins I feel most ... Then answer each of the following statements and indicate how much you personally agree with each statement by circling the response (strongly agree to strongly disagree) which best expresses your feelings at this moment.

What will help you to feel most successful in today's game or practice? In other words, what do you believe you will have to do to be successful in this game or practice?

I will be most successful in this softball game or practice if...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I'm the only one who can do the plays or skills.	SD	D	N	A	SA
I learn a new skill or play and I want to do it more.	SD	D	N	A	SA
I can do better than my teammates and opponents.	SD	D	N	A	SA
The others can't do as well as me.	SD	D	N	A	SA
I learn a skill or play that is fun to do.	SD	D	N	A	SA
Others mess-up and I don't.	SD	D	N	A	SA
I learn a new skill or play by trying hard.	SD	D	N	A	SA
I work really hard.	SD	D	N	A	SA
I score the most runs, hits, or points.	SD	D	N	A	SA
A skill I learn a makes me want to play it more.	SD	D	N	A	SA
I' m the best.	SD	D	N	A	SA
A skill I learn really feels right.	SD	D	N	A	SA
I do my very best.	SD	D	N	A	SA

APPENDIX E. COMPETITIVE STATE ANXIETY INVENTORY - 2

NORTH CAROLINA SELF-EVALUATION QUESTIONNAIRE

Directions: A number of statements that athletes have used to describe their feelings before competition are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate *how you feel right now* - at this moment. There are no right or wrong answers. Do *not* spend too much time on any one statement, but choose the answer that best describes your feelings *right now*.

	Not At All	Somewhat So	Moderately So	Very Much So
I am worried about this competition.	1	2	3	4
I feel nervous.	1	2	3	4
I have self-doubts.	1	2	3	4
I feel jittery.	1	2	3	4
I am concerned that I may not do as well in this competition as I could.	1	2	3	4
My body feels tense.	1	2	3	4
I am concerned about losing.	1	2	3	4
I feel tense in my stomach.	1	2	3	4
I am concerned about choking under pressure.	1	2	3	4
My body feels relaxed.	1	2	3	4
I am concerned about performing poorly.	1	2	3	4
My heart is racing.	1	2	3	4
I'm concerned about reaching my goal.	1	2	3	4
I feel my stomach sinking.	1	2	3	4
I'm concerned that others will be disappointed with my performance.	1	2	3	4
My hand are clammy.	1	2	3	4
I'm concerned I won't be able to concentrate.	1	2	3	4
My body feels tight.	1	2	3	4

APPENDIX F. PERCEIVED MOTIVATIONAL CLIMATE IN SPORT QUESTIONNAIRE - 2

PERCEIVED MOTIVATIONAL CLIMATE IN SPORT QUESTIONNAIRE

Directions: Please read the underlined phrase that begins On this team... Then answer each of the following statements and indicate how much you personally agree with each statement by circling the response (strongly agree to strongly disagree) which best expresses your feeling.

On this softball team...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
players are 'psyched' when they do better than their teammates in a game.	SD	D	N	A	SA
the coach favors some players more than others.	SD	D	N	A	SA
the coach makes sure players improve on skills they're not good at.	SD	D	N	A	SA
only the players with the best 'stats' get praised.	SD	D	N	A	SA
the coach emphasizes always trying your best.	SD	D	N	A	SA
players help each other learn.	SD	D	N	A	SA
the focus is to improve each game/practice	SD	D	N	A	SA
players are taken out of games for mistakes.	SD	D	N	A	SA
each player contributes in some important way.	SD	D	N	A	SA
the coach believes that all of us are crucial to the success of the team.	SD	D	N	A	SA
players at all skill levels have an important role on this team.	SD	D	N	A	SA
the players really 'work together' as a team.	SD	D	N	A	SA
players are afraid to make mistakes.	SD	D	N	A	SA
each player has an important role.	SD	D	N	A	SA
players feel good when they try their best.	SD	D	N	A	SA

PERCEIVED MOTIVATIONAL CLIMATE CONT...

On this softball team...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
trying hard is rewarded.	SD	D	N	A	SA
players feel successful when they improve.	SD	D	N	A	SA
the coach praises players only when they outplay teammates.	SD	D	N	A	SA
players help each other to get better and excel.	SD	D	N	A	SA
the players are encouraged to work on their weaknesses.	SD	D	N	A	SA
players are punished when they make a mistake.	SD	D	N	A	SA
only the top players 'get noticed' by the coach	SD	D	N	A	SA
the coach makes it clear who she/he thinks are the best players.	SD	D	N	A	SA
the coach yells at players for messing up.	SD	D	N	A	SA
the coach gives most of his/her attention to the 'stars.'	SD	D	N	A	SA
the coach has his/her favorites.	SD	D	N	A	SA
the coach gets mad when a player makes a mistake.	SD	D	N	A	SA
players are encouraged to outplay teammates.	SD	D	N	A	SA
the coach encourages players to help each other learn.	SD	D	N	A	SA

APPENDIX G. PARENTAL AND ATHLETE CONSENT FORM

PARENTAL AND ATHLETE'S INFORMATION AND PERMISSION FORM

Your child is invited to participate in a research study that will examine the impact of sport on middle school athletes. As a former teacher and coach I am extremely interested in this topic. I believe strongly that in order to provide children with positive athletic experiences educators need to know more about the impact of sport participation. For this project my specific interest centers around how a child's definition of success is influenced over the course of a competitive season and is titled "Situational and Contextual Influences on Athletes' Goal Orientations (personal definition of success)". Your child was selected as a possible participant in this study because of her involvement in her school's extra-curricular athletic program.

If your child participates in this study, she will be asked to fill out short surveys over the course of the softball season and that will take between 10-20 minutes. Two meetings will be conducted prior to practice and one will be prior to a game situation. These questionnaires are designed to collect information about your child's:

a) athletic background,
b) general, game-related, and practice-related definition of sport success,
c) view of how her team defines sport success
d) feelings about game and practice situations

Additionally, the type of information the coach provides to his or her team (e.g., encouragement, instruction, organization) will be noted during two practices. This information will be collected by observation and recorded with pen and paper. No audio or visual recording device will be used. Please note that your child's performance and actions will not be recorded in any way.

Your child's participation is completely voluntary. If you allow your child to participate, she is free to ask questions concerning the study and may discontinue participation at any time without penalty. I and the UNCG professor who is my dissertation advisor are the only individuals who will have access to your child's questionnaires. The information obtained in this study will be reported in my dissertation and may result in a presentation or publication. In these reports, the information given by your child will remain confidential and anonymity will be safe-guarded. Only group data will be reported. These steps will be taken to alleviate any possible discomfort your child may feel when answering questions about her sport experience. If you have any questions about this study please contact me, Lavon Williams at 334-3030 or Box 1168 UNCG Station, Greensboro, NC 27413.

Your child's participation in this study will help educators better understand the impact of athletic participation on young athletes. Such information can lead to the development of more positive sporting environments. This project is being conducted and sponsored by Lavon Williams, a student at the University of North Carolina at Greensboro, in partial fulfillment of the requirements for a Ph.D.; not your child's school.

Both your signature and your child's signature are needed for your child's participation. Please sign in the spaces provided below. Thank you.

Yes, my child has permission to participate in this project.

Parent/guardian's signature _____

Athlete's signature _____

Today's Date _____

APPENDIX H. GAME-RELATED CBAS COACHING BEHAVIOR BY TEAM

	Coaches																	
	1		2		3		4		6		7		8		9		5	
Behaviors	*f*	%a	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
R	58	.27	79	24	n/a	n/a	36	22	61	18	82	26	60	19	77	24	31	14
NR	1	0	2	1	n/a	n/a	1	1	2	1	5	2	6	2	1	0	10	4
TIR	1	0	5	2	n/a	n/a	1	1	0	0	0	0	1	0	3	1	1	0
EM	16	8	26	8	n/a	n/a	26	16	32	9	33	11	16	5	4	1	3	1
TIM	11	5	45	14	n/a	n/a	11	7	50	15	22	7	9	3	26	8	7	3
P	5	2	7	2	n/a	n/a	1	1	6	2	1	0	13	4	1	0	18	8
TIMP	1	0	3	1	n/a	n/a	1	1	8	2	3	1	7	2	1	0	5	2
IM	10	5	4	1	n/a	n/a	2	1	6	2	5	2	11	3	3	1	16	7
KC	1	0	2	1	n/a	n/a	0	0	1	0	0	0	1	0	0	0	1	0
EG	38	18	71	22	n/a	n/a	51	31	63	19	58	19	81	25	44	14	56	25
TIG	40	19	23	7	n/a	n/a	17	10	57	17	73	24	85	27	121	37	42	19
O	6	3	9	3	n/a	n/a	14	8	39	12	8	3	11	3	9	3	9	4
GC	20	9	29	9	n/a	n/a	3	2	6	2	4	1	8	3	12	4	19	8
NC	3	1	25	8	n/a	n/a	3	2	6	2	16	5	11	3	21	7	9	4
TOTAL	211		330		n/a		167		337		310		320		323		227	

a Represents the average number of game behaviors divided by the total number of game behaviors.

APPENDIX I: PRACTICE-RELATED CBAS COACHING BEHAVIOR BY TEAM

	Coaches																	
	1		2		3		4		6		7		8		9		5	
Behaviors	*f*	%b	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
R	55.5	17	53	22	46	24	69	25	45.5	15	53	21	51.5	20	99.5	26	39	17
NR	6	2	3.5	1	0.5	0	20	7	7.5	2	12	5	8	3	3	0	12.5	6
TIR	2.5	0	1.5	0	9	5	1	0	3	0	2.5	0	0.5	0	27	7	0.5	0
EM	12	4	6	2	7.5	4	30.5	11	7.5	2	18.5	7	6	2	11	3	6.5	3
TIM	68	21	28.5	12	54.5	.28	18	7	36	.12	44	17	30	11	60	15	25.5	11
P	11.5	4	11.5	5	1.5	0	5	2	7.5	2	20	8	17	7	12	3	38.5	17
TIMP	4.5	1	6.5	3	1	0	0	0	9.5	3	8.5	3	11.5	4	5.5	1	10.5	5
IM	3.5	1	19.5	8	3.5	2	8	3	15	5	9	4	12	5	7	2	13	6
KC	9	3	1	0	0	0	2	0	3.5	1	2.5	0	5.5	2	2.5	0	2	0
EG	9	3	13	5	2.5	1	33	12	8.5	3	16	6	7.5	3	18	5	7	3
TIG	28	9	13	5	14.5	8	10	4	27.5	9	1.5	0	26.5	10	62	16	16.5	7
O	53.5	17	48	.20	40	21	47.5	17	83	27	29	12	52	20	60.5	16	30.5	14
GC	41.5	13	37.5	.15	8.5	4	26.5	10	41	13	14.5	6	22	8	18.5	5	12	5
NC	19	6	3.5	1	3	2	5.5	2	13.5	4	10.5	4	11	4	2	0	10	4
Total	323.5		246		192		276		308.5		251.5		261		388.5		224	

a Practice-related behaviors reflect the average coaching behaviors across 2 practice sessions

b Average number of practice behaviors divided by the average of all behaviors coded across two practice sessions.

APPENDIX J: GAME AND PRACTICE-RELATED PROCESS AND OUTOME STATEMENTS COACHING BY TEAM

	Coaches																	
	1		2		3		4		6		7		8		9		5	
Game	*f*	%[a]	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
PS	1	0.5	10	3.3	n/a	n/a	n/a	n/a	8	2.4	16	5.4	7	2.2	8	2.7	15	6.9
OS	8	3.8	16	5.2	n/a	n/a	n/a	n/a	16	4.8	11	3.7	19	5.2	3	1.0	31	14.2
Total	208		305		n/a		n/a		331		294		309		302		218	
Prac.[b]	*f*	%[c]	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
PS	51	16.8	6	2.5	17	9.0	n/a	n/a	13.5	4.6	12	5.0	9.5	3.8	16.5	7.5	7.5	3.5
OS	13.5	4.4	16.5	6.8	15	7.9	n/a	n/a	16.5	5.6	6	2.5	10	4.0	3	0.8	12	5.6
Total	304.5		242.5		189		n/a	n/a	293.5		241		250		386.5		214	

a Represents the average number of statements divided by the total number of game behaviors (excluding NC).

b Practice-related behaviors reflect the average coaching behaviors across 2 practice sessions

c Represents the average number statements divided by the average number of behaviors across two practice sessions (excluding NC).

APPENDIX K. RAW SURVEY DATA

```
Title "Dissertation"
File handle dissert/name 'dissert.dat'
data list file=dissert records=4
      /1 subno 1-3 school 5 preego1 7 pretask1 8 preego2 9 preego3 10 pretask2 11 preego4 12 pretask3 13
         pretask4 14 preego5 15 pretask5 16 preego6 17 pretask6 18 pretask7 19 grade 22 age 23-24 birth
         25-30 race 31 coach 34 chyr 35-36 lastyr 37 mostgm 38 start 39 other 40 comm 41 commyrs 42-43
         free1 44-47
      /2 Id 1-3 order 5 pego1 7 ptask1 8 pego2 9 pego3 10 ptask2 11 pego4 12 ptask3 13 ptask4 14 pego5
         15 ptask5 16 pego6 17 ptask6 18 ptask7 19 peff1 22 peff2 23 pabil1 24 peff3 25 pabil2 26 peff4 27
         pabil3 28 pabil4 29 peff5 30 pcog1 34 psom1 35 pcog2 36 psom2 37 pcog3 38 psom3 39 pcog4 40
         psom4 41 pcog5 42 psom5 43 pcog6 44 psom6 45 pcog7 46 psom7 47 pcog8 48 psom8 49 pcog9
         50 psom9 51
      /3 Idd 1-3 gego1 7 gtask1 8 gego2 9 gego3 10 gtask2 11 gego4 12 gtask3 13 gtask4 14 gego5 15
         gtask5 16 gego6 17 gtask6 18 gtask7 19 geff1 22 geff2 23 gabil1 24 geff3 25 gabil2 26 geff4 27
         gabil3 28 gabil4 29 geff5 30 gcog1 34 gsom1 35 gcog2 36 gsom2 37 gcog3 38 gsom3 39 gcog4 40
         gsom4 41 gcog5 42 gsom5 43 gcog6 44 gsom6 45 gcog7 46 gsom7 47 gcog8 48 gsom8 49 gcog9
         50 gsom9 51
      /4 Iddd 1-3 postego1 7 postask1 8 postego2 9 postego3 10 postask2 11 postego4 12 postask3 13
         postask4 14 postego5 15 postask5 16 postego6 17 postask6 18 postask7 19 it1 22 ur1 23 imp1 24
         ur2 25 imp2 26 coop1 27 imp3 28 pm1 29ir1 30 ir2 31 ir3 32 coop2 33 pm2 34 ir4 35 coop3 36
         coop4 38 coop5 39 it2 40 coop6 41 imp4 42 pm3 43 ur3 44 ur4 45 pm4 46 ur5 47 ur6 48 pm5 49
         it3 50 coop7 51wins 53 losses 54 indsuc 55 teamsuc 56 free2 57-60
Recode psom5 (1=4) (2=3) (3=2) (4=1)
compute pretask=mean.5(pretask1, pretask2, pretask3, pretask4, pretask5, pretask6, pretask7)
compute postask = mean.5(postask1, postask2, postask3, postask4, postask5,  postask6, postask7)
compute preego = mean.4(preego1, preego2, preego3, preego4, preego5,  preego6)
compute postego = mean.4(postego1, postego2, postego3, postego4, postego5,postego6)
compute practask = mean.5(ptask1, ptask2, ptask3, ptask4, ptask5, ptask6, ptask7)
compute gametask = mean.5(gtask1, gtask2, gtask3, gtask4, gtask5, gtask6,  gtask7)
compute pracego = mean.4(pego1, pego2, pego3, pego4, pego5, pego6)
compute gameego = mean.4(gego1, gego2, gego3, gego4, gego5, gego6)
compute praccog = mean.5(pcog1, pcog2, pcog3, pcog4, pcog5, pcog6, pcog7)
compute gamecog = mean.5(gcog1, gcog2, gcog3, gcog4, gcog5, gcog6, gcog7)
compute pracsom = mean.4(psom1, psom2, psom3, psom4, psom5, psom6)
compute gamesom = mean.4(gsom1, gsom2, gsom3, gsom4, gsom5, gsom6)
compute pracabil = (pabil1 + pabil2 + pabil3 + pabil4)/4
compute gameabil = (gabil1 + gabil2 + gabil3 + gabil4)/4
compute praceff = (peff1 + peff2 + peff3 + peff4 + peff5)/5
compute gameeff = (geff1 + geff2 + geff3 + geff4 + geff5)/5
compute ur = mean.4(ur1, ur2, ur3, ur4, ur5, ur6)
compute it = mean.2(it1, it2, it3)
compute pm = mean.3(PM1, PM2, PM3, pm4, pm5)
compute imp = mean.2(imp1, imp2, imp3, imp4)
compute coop = mean.4(coop1, coop2, coop3, coop4, coop5, coop6, coop7)
compute ir = mean.2(ir1, ir2, ir3, ir4)
compute perform = mean.3(UR, IT, PM)
compute mastery = mean.3(IMP, COOP, IR)
compute Tpretask=(pretask1 + pretask2 + pretask3 + pretask4 +pretask5 + pretask6  + pretask7)
compute Tpreego = (preego1 + preego2 + preego3 + preego4 + preego5 + preego6)
compute Tpostask = (postask1 + postask2 + postask3 + postask4 + postask5 +  postask6 + postask7)
compute Tpostego = (postego1 + postego2 + postego3 + postego4 + postego5 + postego6)
```

```
compute Tpratask = (ptask1 + ptask2 + ptask3 + ptask4 + ptask5 + ptask6 +      ptask7)
compute Tpracego = (pego1 + pego2 + pego3 + pego4 + pego5 + pego6)
compute Tgamtask = (gtask1 + gtask2 + gtask3 + gtask4 + gtask5 + gtask6 +     gtask7)
compute Tgameego = (gego1 + gego2 + gego3 + gego4 + gego5 + gego6)
compute Tpraccog = (pcog1 + pcog2 + pcog3 + pcog4 + pcog5 + pcog6 + pcog7)
compute Tpracsom = (psom1 + psom2 + psom3 + psom4 + psom5 + psom6)
compute Tgamecog = (gcog1 + gcog2 + gcog3 + gcog4 + gcog5 + gcog6 + gcog7)
compute Tgamesom = (gsom1 + gsom2 + gsom3 + gsom4 + gsom5 + gsom6)
compute Tpraabil = (pabil1 + pabil2 + pabil3 + pabil4)
compute Tpraceff = (peff1 + peff2 + peff3 + peff4 + peff5)
compute Tgameeff = (geff1 + geff2 + geff3 + geff4 + geff5)
compute Tgamabil = (gabil1 + gabil2 + gabil3 + gabil4)
compute Tur = (ur1 + ur2 + ur3 + ur4 + ur5 + ur6)
compute Tit = (it1 + it2 + it3)
compute Tpm = (PM1 + PM2+ PM3 +pm4 +pm5)
compute Timp = (imp1 + imp2 + imp3 +imp4)
compute Tcoop = (coop1 + coop2 + coop3 + coop4 + coop5 + coop6 + coop7)
compute Tir = (ir1 + ir2 + ir3 + ir4)
compute Tperform = (TUR + TIT + TPM)
compute Tmastery = (TIMP + TCOOP +TIR)
VARIABLE LABELS
     preego1  'PRE: only one who can do the plays or skills'
     pretask1 'PRE: learn a new s-p and want to do it more'
     preego2  'PRE: do better than teammates-opponents'
     preego3  'PRE: others cant do as well as me'
     pretask2 'PRE: learn a s-p that is fun to do'
     preego4  'PRE: others mess-up and I dont'
     pretask3 'PRE: learn a new s-p by trying hard'
     pretask4 'PRE: I work really hard'
     preego5  'PRE: I score the most runs, hits, points'
     pretask5 'PRE: A skill I learn makes me want to do it more'
     preego6  'PRE: Im the best'
     pretask6 'PRE: A skill I learn that really feels right'
     pretask7 'PRE: I do my very best'
     birth        'birthdate'
     coach        'have you played for this coach before'
     chyr  'how many yrs have you played for this coach'
     lastyr       'were you on this softball team last yr'
     mostgm       'did you play in most of the games'
     start  'did you start most of the games'
     other 'how many other sports have you had this coach'
     comm         'have you eve played community ball'
     commyrs  'how many years have you played comm. ball'
     free1 free2        'how many hours do you practice SB in you free time'
     pego1  'P: only one who can do the plays or skills'
     ptask1 'P: learn a new s-p and want to do it more'
     pego2  'P: do better than teammates-opponents'
     pego3  'P: others cant do as well as me'
     ptask2 'P: learn a s-p that is fun to do'
     pego4  'P: others mess-up and I dont'
     ptask3 'P: learn a new s-p by trying hard'
```

ptask4 'P: I work really hard'
pego5 'P: I score the most runs, hits, points'
ptask5 'P: A skill I learn makes me want to do it more'
pego6 'P: Im the best'
ptask6 'P: A skill I learn that really feels right'
ptask7 'P: I do my very best'
peff1 'P: I want to do well'
peff2 'P: I will do my best'
pabil1 'P: I am athletically talented'
peff3 'P: I will give my all'
pabil2 'P: I am naturally good at softball'
peff4 'P: I will work hard'
pabil3 'P: Playing softball comes easy to me'
pabil4 'P: I play softball well'
peff5 'P: I will try very hard'
pcog1 'P: I am worried about this competition'
psom1 'P: I feel nervous'
pcog2 'P: I have self-doubts'
psom2 'P: I feel jittery'
pcog3 'P: I am concerned that I may not do as well...'
psom3 'P: My body feels tense'
pcog4 'P: I am concerned about losing'
psom4 'P: I feel tense in my stomach'
pcog5 'P: I am concered about choking...'
psom5 'P: My body feels relaxed (reversed)'
pcog6 'P: I am concerned about performing poorly'
psom6 'P: My heart is racing'
pcog7 'P: I am concerned about reaching my goals'
psom7 'P: I feel my stomach sinking'
pcog8 'P: I am concerned that others will be disappointed...'
psom8 'P: My hands are clammy'
pcog9 'P: I am concerned I wont be able to concentrate'
psom9 'P: My body feels tight'
gego1 'G: only one who can do the plays or skills'
gtask1 'G: learn a new s-p and want to do it more'
gego2 'G: do better than teammates-opponents'
gego3 'G: others cant do as well as me'
gtask2 'G: learn a s-p that is fun to do'
gego4 'G: others mess-up and I dont'
gtask3 'G: learn a new s-p by trying hard'
gtask4 'G: I work really hard'
gego5 'G: I score the most runs, hits, points'
gtask5 'G: A skill I learn makes me want to do it more'
gego6 'G: Im the best'
gtask6 'G: A skill I learn that really feels right'
gtask7 'G: I do my very best'
geff1 'G: I want to do well'
geff2 'G: I will do my best'
gabil1 'G: I am athletically talented'
geff3 'G: I will give my all'
gabil2 'G: I am naturally good at softball'

geff4 'G: I will work hard'
gabil3 'G: Playing softball comes easy to me'
gabil4 'G: I play softball well'
geff5 'G: I will try very hard'
gcog1 'G: I am worried about this competition'
gsom1 'G: I feel nervous'
gcog2 'G: I have self-doubts'
gsom2 'G: I feel jittery'
gcog3 'G: I am concerned that I may not do as well...'
gsom3 'G: My body feels tense'
gcog4 'G: I am concerned about losing'
gsom4 'G: I feel tense in my stomach'
gcog5 'G: I am concered about choking...'
gsom5 'G: My body feels relaxed (reversed)'
gcog6 'G: I am concerned about performing poorly'
gsom6 'G: My heart is racing'
gcog7 'G: I am concerned about reaching my goals'
gsom7 'G: I feel my stomach sinking'
gcog8 'G: I am concerned that others will be disappointed...'
gsom8 'G: My hands are clammy'
gcog9 'G: I am concerned I wont be able to concentrate'
gsom9 'G: My body feels tight'
postego1 'POST: only one who can do the plays or skills'
postask1 'POST: learn a new s-p and want to do it more'
postego2 'POST: do better than teammates-opponents'
postego3 'POST: others cant do as well as me'
postask2 'POST: learn a s-p that is fun to do'
postego4 'POST: others mess-up and I dont'
postask3 'POST: learn a new s-p by trying hard'
postask4 'POST: I work really hard'
postego5 'POST: I score the most runs, hits, points'
postask5 'POST: A skill I learn makes me want to do it more'
postego6 'POST: Im the best'
postask6 'POST: A skill I learn that really feels right'
postask7 'POST: I do my very best'
it1 'Players are psyched when they do better...'
ur1 'The coach favores some players more than others'
imp1 'The coach makes sure players improve on skills...'
ur2 'Only the players with the best stats get praised'
imp2 'The coach emphasizes always trying your best'
coop1 'Players help each other'
imp3 'The focus is to improve each game/practice'
pm1 'Players are taken out of game for mistakes'
ir1 'Each plyer contributes in some important way'
ir2 'The coach believes that all of us are crucial...'
ir3 'Players aat all skill levels have an IR on this team'
coop2 'The plyers really work together as a team'
pm2 'Players are afraid to makes mistakes'
ir4 'Each player has an IR'
coop3 'Players feel good when they try their best'
coop4 'Trying hard is rewarded'

```
    coop5      'Players fell successful when they improve'
    it2    'The coach praises players only when they outplay teammates'
    coop6      'Players help each other to bet better and excel'
    imp4       'Players are encouraged to work on their weaknesses'
    pm3  'Players are punished when they make a mistake'
    ur3   'Only the top players get noticed by the coach'
    ur4   'The coach makes it clear who (s)he thinks is best'
    pm4  'The coach yells at players ffor messing up'
    ur5   'The coach given most attention to the stars'
    ur6   'The coach has his/her favorites'
    pm5  'The coach gets mad when a player makes a mistake'
    it3    'Players are encouraged to outplay teammates'
    coop7      'The coach encourages players to help each other learn'
    wins  'Number of games won'
    losses     'Nubmer of games loss'
    indsuc     'Personal rating of individual (own) success'
    teamsuc  'Personal rating of team success'
    pretask  'Early season task'
    preego   'Early season ego'
    postask  'Late season task'
    postego  'Late season ego'
    practask 'Pre-practice task'
    pracego  'Pre-practice ego'
    gametask 'Pre-game task'
    gameego  'Pre-game ego'
    praccog  'Pre-practice cognitive anxiety'
    pracsom  'Pre-practice somatic anxiety'
    gamecog  'Pre-game cognitive anxiety'
    gamesom  'Pre-practice somatic anxiety'
    pracabil 'Pre-practice ability (ego)'
    praceff  'Pre-practice effort (task)'
    gameabil 'Pre-game ability (ego)'
    gameeff  'Pre-game effort (task)'
    ur     'Unequal recognition: PMCSQ'
    it     'Intra-team rivalry: PMCSQ'
    pm     'Punished for mistakes: PMCSQ'
    imp    'Improvement: PMCSQ'
    coop   'Cooperation: PMCSQ'
    ir     'Important Role: PMCSQ'
    perform  'Performance Orientations: PMCSQ'
    mastery  'Mastery Orientation: PMCSQ'
VALUE LABELS
  Preego1 to pretask7 pego1 to peff5 gego1 to geff5 postego1 to postask7 it1 to coop7
     1 'Strongly Disagree'  2 'Disagree'  3 'Neutral'  4 'Agree' 5 'Strongly Agree'/
  Pcog1 to psom9 gcog1 to gsom9
     1 'Not at All'  2 'Somewhat So'  3 'Moderately So'  4 'Very Much So'/
  coach lastyr mostgm start comm
     1 'no' 2 'yes'/
  indsuc teamsuc
     1 'very unsuccessful'  2 'unsuccessful'  3 'somewhat successful' 4 'successful'  5 'very successful'/
```

107 1 2333414554145 7120609823 101111020803.0
107 1 4442425524245 553535335 1111111114111311111
107 3444444544345 454545455 1111211114111211111
107 2433425534245 315155525435343 35334222322334 514503.0
115 1 5555555555555 8141122803 202222120801.0
115 1 2444545544545 443434345 1121211114111411111
115 3444445454445 554545445 223133323231312111
115 4555555555555 415155545555455 45155111111225 515501.5
100 1 4521515525245 8140131813 101111020603.0
100 1 1511515515155 554545345 2121211113213121111
100 1511515515155 554535355 222221112242412211
100 1511515515155 115155515555155 55155111111115 515502.5
132 1 2322424444234 7131215813 101111110002.0
132 1 4343444443434 444424234 1111211113313131111
132 3232324443434 444424234 222332213231113111
132 4324324443434 345343424444442 34434222244234 513501.0
112 1 4542545555455 813050981 202222120401.0
112 1 2522535533355 553545444 1111111112411212121
112 3433535554355 551515225 1111211211111211111
112 2524443454545 315154515543145 55135111111114 515500.0
122 1 4421515555245 8140918803 202222220804.0
122 1 1515515534145 554545435 112121312431413131
122 1512414545244 554535355 122221212441412121
122 1511515525544 215245525444245 34142122121114 515504.0
124 1 4522545525255 8140121813 202111020802.0
124 1 2522535524355 553545535 322121311431412111
124 2412515515255 552525545 222221211441413331
124 2522535545355 435455525555355 45445131111115 515502.0
110 1 5555555555555 7130224823 101111020701.5
110 1 5553555555555 555555555 1111111114111111111
110 3333335555355 555555555 111111111411412111
110 5555555555555 423254555554355 54235112115135 514502.0
108 1 1311415544344 8140227813 202221020704.0
108 1 1511515515145 553535535 1111111114111111111
108 1511415515145 553535345 113121421121411111
108 1511515135155 145355515555355 55135131134215 514506.0
133 1 4541515555355 814122480 202222220402.0
133 1 3543525555355 554535435 1121211114214121111
133 1532535453545 554525445 213241111321314112
133 2532525535255 325454534445355 45255244124235 514401.5
123 1 1511515525155 814012381 202221120900.5
123 1
123
123
111 1 4424525554555 7121005823 101111020803.5
111 1 3443545544355 553535345 2121211124212121111
111 3421515553255 553535345 122131111421212111
111 3433535544345 315155524545355 45145133222224 515503.0
114 1 4412435554245 7130130823 101111020902.0
114 1 4442434444344 554555555 1121111112411212111
114 3443424544345 454535545 212131113221213111

114 5545545555355 315155535355155 25325145355311 514507.5
105 1 2424414454144 7120829823 101111120803.0
105 1 3423345444244 453434434 233242224331324221
105 1212324323244 231424315 244444343243324243
105 3432424344343 334254512445345 45144121112111 513502.5
116 1 4422515545255 8130824813 203222220204.5
116 1 4244345542445 252535335 212141112441212121
116 2533445544345 554525445 233242112221214122
116 5245345543445 555 52552444542 45335141345115 513501.0
113 1 2411515524255 8140313813 202222121003.0
113 1 1411415514145 452535435 111121111411413111
113 1211415514145 553555445 123142114231413111
113 1511414515245 225155525555254 55155111112111 515505.0
125 1 4523525555445 8130827813 202221020403.0
125 1 4531515545255 545545345 111111111411111111
125 1511515515155 551535335 112121111441422121
125
201 2 2542525544245 814021881 101111020207.0
201 1 1411515515155 553535335 121232111431114111
201 2322424525255 452535335 222343211342314113
201 1511515515455 445145515455455 34255111135215 344405.0
202 2 2422424424244 8130821813 202222020802.0
202 1 1411414414144 433434434 111111111311111111
202 1422424424244 443434434 2322322222221222122
202 2422434434344 334244424444244 44244222223224 344401.0
203 2 2521544445245 7120327823 101111110000.2
203 1 2411415413145 554545444 112131212321112111
203
203 1411424415135 115154414545454 45154112511124 344300.0
204 2 2421515524135 8140122811 101111010002.0
204 1
204
204 1512425514145 315155415445145 54144221211225 345503.0
205 2 4311434513135 7120810 3 101111010000.0
205 1
205
205
206 2 1451525514245 8141223801 202211120000.5
206 1
206 1421425515155 442525435 212111211421212111
206 1512525525245 315455515555345 55245112222225 344401.0
207 2 1412525524245 7130409811 101111010007.0
207 1
207 1211315512135 553535245 421232311421211112
207 2522525515245 215154514455345 45255221114324 345403.0
208 2 4542525554435 7130918811 202221020001.5
208 1
208 2422425524235 553545355 421221441122244111
208 2522525515245 215154514455345 45255221114324 345403.0
209 2 2411515534245 7120707822 101111110000.5
209 1 1311414314145 443434334 111121111431212111

209 1411515414245 553425235 433343233122133223
209 1411413413135 213153524355355 55243111112115 343300.5
210 2 1412424525155 8151128791 202222120202.0
210 1 1412415515515 555535555 211111111411412111
210 1411114414144 444444244 111111111111414411
210 1511515515515 515155515545145 55255111114125 345101.0
211 2 1433415543455 7120331821 101111010001.0
211 1 1433535534335 555335355 111111111411411111
211
211 1433434434345 335155513555355 55155111113135 345501.0
212 2 2412534444445 8151222793 101111020502.0
212 1 1311344444345 444434434 112111111411112111
212 1321314413135 445434434 223232122431222122
212 4444444434344 434244414444444 44244222222224 343301.0
213 2 1442545525155 8151222793 101111120502.0
213 1 1441415414155 551514345 233232123442323422
213 1411454513145 552524235 243243434143134344
213 1411413313134 514144314535545 34144111111114 344205.0
214 2
214 1 1411415534245 444535334 322222212231312212
214
214 2422425534345 334254434444344 35244223322335 343305.0
301 3 1411425515145 7130311823 101111120501.0
301 2 1411414413145 343414315 211121111321312111
301 131 414514145 554545345 123131211321311121
301 1511515515155 245155525555255 55155233234215 615502.5
302 3 4531525525335 8140310813 202211120601.0
302 2 2522525534345 553535335 211111111431412111
302 2432424434345 443434335 222212121211312121
302 3522525535345 444454345554454 343343444444433 615403.5
303 3 2412515524145 7130912 3 101111020204.5
303 2 1511415534255 451414225 112131211221213121
303 1521525544255 551524225 332221411231312121
303 1412515535145 344354532333435 35334345335323 613504.5
304 3 4422444554155 8141224803 101111020401.5
304 2 1
304
304
305 3 2411515514145 7120608 3 101111020304.0
305 2 1521515535155 553535345 122211212231112111
305 1511515515155 535325235 332231312421212111
305 2521515545355 114155535555355 55155143112115 615504.0
306 3 2432425544455 8140928803 101111020501.5
306 2 1521325544245 4 514225 212121121241412121
306 2422424434244 544424234 343233433333322233
306 2522434544445 134154444345445 44244234423424 614401.0
307 3 2532525524135 8130905813 202222220600.0
307 2 1521515425145 554535235 132242232324421323
307 1311414423135 555545345 123222121323212213
307
308 3 2422424423134 7120603823 101111020503.5

308 2 1411514515115 553535235 122112121422222121
308 131 313311113 452324135 32 222221222222122
308 1415513413134 334255534455355 24232353144134 615503.0
309 3 2423545544355 8130622813 203211120600.5
309 2 1522515545355 553535335 1121211121313121111
309 2422425535255 553535535 222222422242422322
309 2422555535255 234254534545445 45245223224225 614504.0
310 3 4542424523234 8141227 3 101111120702.0
310 2 2322425523134 442424334 131323131231111221
310 2422424424244 443434444 121222111332112121
310 3522425423234 233345333345434 23444352355434 613517.0
311 3 3434533443343 7130131823 101111120701.0
311 2 1322332333233 343323323 1221213111311113121
311 2332434353343 343424324 112121312421211111
311 3434533543435 354233453334334 33234223324323 615402.0
312 3 2511414514145 8141106803 202222120501.0
312 2 2411515424155 353425335 112131313341313121
312 2412424524245 342425325 322242422122424122
312 2411414424154 144544425455454 24454133324145 613502.0
313 3 1521425545245 8140206813 202222120603.0
313 2 1521415524155 552515235 1121211213414131 31
313 1421425523245 553534445 112131331342421113
313 2431525525455 254544445354555 55544455455445 6145
412 4 2521525535155 7120727813 102220020402.5
412 2 3422425545155 555545355 112121212421212111
412 2432334544255 555525255 324242124231313121
412 4544545545455 432253124442332 45234131223424 123301.0
421 4 3521415535155 8130815813 101111020203.0
421 2
421 2321415535155 453535345 223221321222323121
421
426 4 4521525524355 8130421813 101221020401.5
426 2 2422524534345 554535335 112111212421211121
426 2422425534345 543535335 222121213321212121
426 3433435534345 342344324444244 34243423435334 123401.0
499 4
499 2 2422425524135 353535335 222121322331313121
499 1423424434245 453535345 3222112112323221 12
499 2422425524235 333244325354345 34344533333455 123303.0
423 4 2421515514245 8130519 3 101221021003.5
423 2 2522535555355 554453453 211121211321422121
423 1533425524354 543453453 222111211411412111
423
428 4 3431424443255 8140320813 101111020301.0
428 2 3422424423144 243534334 213132212321213121
428 3243314423244 342424234 323232212241213121
428 2422425424144 223234324444443 34344432322324 123301.5
427 4 2521525545255 8140317813 101111020201.5
427 2 3531535545355 554535335 122121221322422121
427 4543535545455 454535335 221222321221211121
427 3533535535355 324155515555255 45254312213214 125401.5

410 4 2411525515155 8140326813 101111010002.0
410 2 1411415524145 444535435 112111211421412111
410 1511515535155 555535535 212111111441413121
410 1511515515155 215355515145345 35455311111115 125501.0
414 4 4341325543335 7131203 3 101222020201.0
414 2 2422425535245 553545345 211331211431312111
414 1412535533455 554545545 121211111441412111
414 3533535545355 315155434455555 45153212324235 123300.0
416 4
416 2 1521524124155 454434345 221231421231424111
416 1411515424151 454434335 323 41323143324232
416 2442325453445 224144524434434 44244533422224 123401.5
405 4 2422525434145 7120414823 101111020502.0
405 2 3432525434355 443534225 221311212321212121
405 1522415514245 442525335 322123112212112112
405 2422424524245 234244424445245 44244222434424 125400.0
404 4
404 2 1413415545155 553535345 113142123341414231
404 2224345543255 554525445 344333312243313422
404 2511425545155 243255424445445 44354222424325 124300.0
422 4 2421415534345 8130328813 101222020602.7
422 2 2422424434345 543535335 332232212232323232
422 2422414534345 553535345 232232223221313122
422 3433435534345 334344335454444 34344332322323 123301.0
408 4 2511415535155 8141009803 101222020403.0
408 2 1311415513155 552515325 314144414341413143
408 1511515515155 551515115 4444444441444444444
408
417 4 4422425434345 7131218813 101111010001.5
417 2 2422425434245 554535335 112211111321112111
417 2423425424345 453435335 121211112321213211
417 2512425525355 234423434444345 54244244343423 123402.0
601 6 2422444444245 8130531813 202222020803.5
601 1 2442524444245 552525245 111111111321311111
601 2422424444145 552524225 122322121112411122
601 2422444444245 224453544444245 44244422424424 244302.0
602 6 4434454423444 7120716823 101111020603.0
602 1 3344334443244 445454444 2222323231212231112
602 3344344433434 444444444 242342232142122212
602 3344344443444 324344434444344 44244332422234 244402.5
603 6 4521425424155 7120529823 101111020108.0
603 1 4532515415155 542545235 432131321421313112
603 2422525525255 552525245 344434333233423322
603 4422525525254 255454525245455 55245242444425 244405.0
604 6 5522555524245 7120425951 101111020712.0
604 1
604 2443534555354 554555455 334443444232423312
604
605 6 3532415454445 8131020813 101111020514.0
605 1 2432425544444 554434334 112213122413121121
605 1422524544445 554545545 211212131321211212

605 3432424434345 235245424445245 44244223223325 244403.0
606 6 2533545545155 7130208 3 101111020403.5
606 1 1511525525155 555535555 222232422321412112
606 1511511135155 555535555 111121211441411111
606 2522535535155 125155525555255 55155122222315 245407.0
607 6 2522415544355 7120908821 101111020302.0
607 1 3522415545355 555535555 221222212221411111
607 1511515524445 554535444 241223132112311122
607 3532525545355 114154414544445 35244222222225 244402.0
609 6 2422445544455 7120706823 101111020302.0
609 1 4444545545345 555545245 111121311321412111
609 4442445545445 445455245 342323242113331324
609 4544445544455 244444422424224 44244242424424 243304.0
610 6 4432425544445 7130419813 101111020303.0
610 1 3433434444445 444545445 222233333232233222
610 3522525544455 443434344 222242324232424242
610 3433534544445 214354544444344 45244323321434 244409.5
611 6 2224445544445 8140228813 202222020801.5
611 1 4544545545455 555525445 112111112411411111
611 2442444544445 454424244 232323323221323222
611 4544545555555 434454444445245 44244433532444 244302.0
612 6 1411415525245 8131107813 101111020201.0
612 1 2411415522245 554535335 211122412421212121
612 2322425534245 555545455 232312122112321212
612 2422425524555 224255535555255 55155111311315 243403.0
613 6 2422524523245 8140108813 101111020205.5
613 1 3532325523235 553545445 122121112141112111
613 1512515514535 553535345 444442423241342112
613 2432415525235 443345454322544 24344455545513 243208.0
614 6
614 1
614 1411315524135 553545444 123121411432211211
614
622 6
622 1 2543545555555 553545445 112121211421413131
622 3421515445455 554535555 212121111421314131
622 4542545555255 134355514455555 45155233422415 243410.0
720 7 2422434445345 8130413813 202221120401.0
720 2 2542525525255 545545455 222232221322412212
720 2422424424245 444444444 222232223323412312
720 2442424534255 224244524544245 44244224424424 505501.0
709 7 2512415425145 7120612 3 101111020401.5
709 2 1522424424245 434424235 233222223232423432
709 1512415425155 554545445 223221212322412232
709 1422524524145 235245524445545 44254432423445 503503.0
712 7 4542525525455 7120411823 101111120510.0
712 2 1512515514255 444535445 222221222222212222
712 2442424524255 454525445 432231132221223211
712 2422424424244 224244415444244 44244241222424 504503.5
716 7 4423425534345 8130424813 101111020603.5
716 2 4442425544345 554535345 211231211321211121

716 4443434424244 454535445 223222122323211122
716 4422525525455 325254524445255 44245222322325 505505.0
708 7 1511515515155 7120812823 101111020502.5
708 2 1511515515155 551515135 221111111221112111
708 1511515515155 551515115 211111121221111111
708 1511515515155 115155515555355 55155111111115 504503.0
707 7 1511515515155 7120721823 101111020402.5
707 2 1511515525155 554545445 111121121221412112
707 1511515515155 545545445 232222132221422222
707 1511515525155 315254424444345 55345233423415 504505.0
715 7 3412525435355 8141102801 101111020802.0
715 2 2532525435345 443434435 112122212231411111
715 1411414434144 443434334 222212111211311111
715 2422424424244 224244424344244 44244223323224 504401.0
719 7 4422424444244 8140910803 202221020403.0
719 2 1411424524245 555555455 122222211322322221
719 1411414414145 555555555 122121221221212121
719 1411414524145 224244424245345 44244222312324 505501.0
711 7 4544545555555 7120327823 101111120601.0
711 2 4543525535355 454545455 111111111411411111
711 1532525525155 555555555 111111311411411111
711 2433434534345 434344424445245 45444222222234 505502.0
710 7 4522415535245 8130924813 202222120702.5
710 2 2522515525155 453525235 111111111411411111
710 1511515515155 553335345 121212121411411111
710 1511515515155 115155515555155 55155111211215 505505.5
713 7 1511425534145 8130812813 101111020505.0
713 2
713 1511415535255 5 5 45445 111111111411411111
713 1411515424145 245355524545445 45155143444314 505504.5
718 7 2432424424244 7130211823 101111120802.0
718 2 3432424434344 443434334 211222112221212122
718 1411414514141 443414234 222222222221412122
718 2422424424244 224234224444344 34244222322434 503503.5
717 7 2422425524345 8140315813 101111020602.0
717 2 2422524434345 554545455 122121213211312122
717 1411414414145 554555555 222221122311211111
717 2422425524245 224244524444345 34344232323444 505502.0
721 7 5443535544445 8130811813 202111020802.0
721 2 3433434434345 444444455 211111111411112111
721 3433434434245 444444445 211121111211111111
721 3433435434344 334354434544344 33344332322333 504503.5
712 7 2522425534345 8140210813 202112220601.0
712 2 1522525545455 454525345 111132111132141211
712 1522425524245 554534445 122211211321412111
712 2522425544455 425255525455455 55254322422345 504503.0
801 8 4533444444354 8140206813 202211020502.0
801 1 4543544444355 444444544 212121211331313111
801 3543535545355 555545555 332232332221323132
801 4533545544344 343244434334444 45343332223324 064301.0
802 8 5355445544254 7130803813 101111020400.0

802 1 3433435544355 553535445 1111211113112121 2
802 2422425554345 555535555 1111112114111121 21
802 2422425535455 224254435444444 55144222322225 063300.0
803 8 5455454454545 8130519813 101111020500.0
803 1 4455444445555 555555555 1111211122211122 2
803 4444444444555 555544444 1111112123111121 11
803 5555455555555 424344435454444 44234122222324 061202.0
804 8 1311415524155 8130622813 101111020412.0
804 1 2411425524145 553535445 1111211113213121 11
804 1411315523155 553535555 2212221212112111 12
804 2411415524245 114255525555355 44255321311315 064304.5
805 8 1421415514145 8141215801 101111020602.5
805 1 1411515515145 554545545 2222221122214131 32
805 1511415515155 555555555 222242143133444141
805 1511515515155 215155515555455 45155111111315 063301.5
806 8 4434445534555 7120712823 101111020805.0
806 1 2221424524245 444444444 1111211133413131 32
806 4421525554145 555555555 332233322242323122
806 2432424544245 424244424444444 44444222322344 063301.0
807 8 1422435524245 8130512813 202211020303.0
807 1 2423435524145 553425235 1131214123314131 21
807 2412445524255 543514235 2223314222314222 22
807 2532434524244 224343534354245 44234112111215 064303.0
808 8 2423444524445 8140112813 202222020405.0
808 1 1432424424244 444444434 1111111114111111 11
808 1531525544344 555555455 1111111114211131 11
808 1422424424244 224244424444244 44244222223224 061101.0
809 8 5533545555455 8130831813 202222020914.0
809 1
809 4443545555555 555555555 2222213111214131 11
809 5555555555555 525154424555555 35145211311315 064214.0
810 8 1422415524245 7120706 3 101111020702.0
810 1 2422424424244 443444444 1222222211324222 22
810 2422425424144 544545445 3322224321422221 21
810 2422425424244 224245424444244 44244222222224 0634
811 8 4421513 14145 8141218803 101111020400.7
811 1 3431525534155 554545335 1242211123413141 21
811 2321544543145 443435325 3242413212413141 11
811 1322434345335 115154325554254 53234111311315 064300.0
812 8 5344424343335 8130531813 202222020601.0
812 1 5522525555555 555555555 1121112114214111 11
812 4442525545545 555555555 2221112214214111 11
812 4532525555555 114155535555255 55155111211315 062209.5
813 8 4531545535155 7130201823 101111020401.5
813 1 1511515515125 555555555 1111111112212222 11
813 1513515115135 555555155 2221231232223222 12
813 1515511233325 123313313232343 13332333233232 064404.0
814 8 4422424444444 7120405823 101111020504.0
814 1 4442424444444 444444444 1111112114114111 11
814 2442444444444 444444444 1111112114214111 11
814 4433444444444 224244424444244 44244222222224 063407.0

815 8 5432535454544 8131116813 101111020802.0
815 1 2432425514245 555535355 111121121321211111
815 1422235414145 554545455 213213321122221112
815
816 8 3544535555455 8141024803 202221020401.5
816 1 2521515525355 554545445 1111111114111111111
816 2512515535355 554545445 222131211121212111
816 3522535545455 315155515555255 55155111111115 063303.0
817 8 5344535533255 7120503823 101111020900.0
817 1 4533555535155 544545435 1111111114111112111
817 2512555434145 45354 335 132332123132113412
817 4533445535255 415445524554255 35244212111135 064100.0
901 9 2311224523145 7131027813 101111020602.0
901 2 1411325523145 452515225 441324241222222232
901 2422445524245 554535445 441323442232323234
901 2422525524345 234344433455444 35245234344515 415402.0
905 9 4422424434245 7131016813 202111020200.0
905 2 4443444444444 444535445 232323131223412433
905 4433434555445 554445455 232323331123332333
905 4444444544444 254255434445444 34444344444444 414401.0
908 9 2413534544245 8140326 3 202211120301.5
908 2 2423424425245 444434344 223121212321212111
908 2422424434244 444424245 221111111221312111
908 2422424424244 344344434444444 44244332433424 413402.0
918 9 2422425532235 7120809823 101111020505.0
918 2 1212314522125 352425225 232221231223211211
918 2211323533225 252535425 332321121324311123
918 2323325542135 323244325432433 35243133333223 414504.0
907 9 2411525534245 8130424813 101111020603.0
907 2
907 1411414414145 554554445 112122211221112121
907 1411323414145 334354335545354 45244323333324 413403.0
910 9 3421415453235 7130902813 101111020504.0
910 2 1411314512145 452424135 342344232143423413
910 2315414423145 542415324 324443343143423123
910 1311414413133 354155515455555 55155513511515 414503.0
999 9 1422425535145 8141216 3 101111020603.0
999 2 1411425534245 453434335 121232221231421112
999 1422425534245 453535335 221122111211422111
999 2422435534345 314154425445245 54244212321314 415501.5
920 9 1511524545355 7131017813 101111020401.0
920 2 2523525444355 554535335 423132212321312141
920 1532434543145 454535345 434243333131312131
920 3522545543345 334255515325155 55134231425535 414503.0
909 9 5444445554445 8130518813 202222020402.0
909 2 4444444554444 443535445 421231211231212112
909 3311424434344 552525245 331232113221211112
909 3423424534244 324234434444444 44344333534434 415502.0
914 9 2422415514245 7130220823 101111020602.5
914 2 1411414514155 553535445 2222221212222423222
914 1511415515145 545355335 232242221223223222

914 2422434334445 224255524545344 45254213424425 415402.0
919 9 2411425425144 8130507813 202222020400.5
919 2 2421424434245 553524245 311121312231313111
919 2443424434255 542525345 332232422221323212
919
505 5 3433515544155 8130915813 101111020314.0
505 1 1511515535155 553355445 111121111111312111
505 1312415514155 553535335 232334342133333324
505 1411515515155 242322253222333 23223555555532 072203.0
506 5 5432525555455 8131027813 101222020205.0
506 1 2522515535255 554545445 221121111421212111
506 4532525525255 554545455 221121211322212211
506 2521515525155 252534252122323 24552255555552 073103.0
512 5 1411415524345 8140226813 101222020901.0
512 1
512 1411415523345 553545335 322221111311212111
512 1511425534455 234324324334235 45243233222224 074102.0
507 5 5344435554444 7131205813 101111020501.0
507 1 4453443443444 444444444 112121111421311111
507 5455554424335 444544445 222222122212222122
507
508 5 1511415514145 813 811 101111020314.0
508 1 2531415513135 552415145 111212111211312111
508 132 225524145 552525235 231211123133111111
508
501 5 5531535525255 8130723813 101111120202.5
501 1
501 5511515525155 553535435 241412331424141411
501 3511535514145 351213253141532 24522414533531 071210.0
509 5 1222425424245 8140131813 101111020301.0
509 1 1232324523324 445444444 111111411211221111
509 2222424524235 554445434 211122421331223121
509 1432224522315 255413354245242 12322455544431 071202.0
503 5 3511415534345 8130401811 1011110201
503 1 1512515514145 554535435 111111211411112211
503 1425315524255 554535335 111111211421111221
503 2522525535255 453545354432555 55555555355453 075107.0
510 5 2323324424245 8130720813 101222020800.5
510 1
510 2432444423244 444434344 222121211221112121
510 2422424424244 334244434444344 34243332333333 073301.0
504 5 2521425523235 8140204811 101111010000.0
504 1 1311315523235 553525235 212131214231212141
504 1411415513135 553525235 331341412242414121
504 1334314513135 354524444433543 33443355554432 073100.0
511 5 2432414425144 7120613823 101111020701.0
511 1 2322324312123 433424234 121121111411211121
511 1412424324143 552424434 221232121211221112
511 3433323333133 232434353223333 34334443343323 074300.0