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Current research on sport motivation has focused primarily on goal perspective approaches in an attempt to understand behavior in achievement situations (Ames, 1984; Nicholls, 1984). According to Nicholls' (1984) theory, the achievement goal orientation an individual develops may be influenced by both individual differences and situational factors.

Relative to situational factors, the team motivational climate may promote either a task-involved or an ego-involved orientation dependent upon which goal orientation is emphasized by the coach. In addition, Ames (1992a) argued that environmental structures influence the motivational climate which ultimately impact the athlete's achievement orientation. Educational research (Epstein, 1988) has identified specific environmental structures (TARGET structures) as being salient to the development of a mastery climate.

Little research has been conducted on athletes' perceptions of their coaches' behavior, in regard to specific environmental

structures, and how this may ultimately influence athletes' achievement goal orientation. Thus, the purpose of this study was to examine the relationship among TARGET structures, team motivational climate, and achievement goal orientation.

The subjects consisted of 186 high school softball players and 171 high school baseball players, ranging in age from 14 to 18 years. The TEOSQ , PMCSQ , and TARGET questionnaires were administered to subjects at the beginning of a sport practice.

LISREL8, a structural equation modeling program, was the statistical analysis employed. Results indicated that a positive linear relationship existed, linking task and reward/evaluation components of the TARGET structures to mastery climate to task orientation. These two structures may be the most salient structures within a sport setting. This finding suggests there is a positive association between coaches' promotion and employment of task-involved goals in their practices and athletes' perception of a mastery-oriented team motivational climate. Direct relationships linking three TARGET structures to performance climate to ego orientation were also reported. Grouping and authority components of the TARGET structures were found to have a significant inverse relationship with performance climate, while task structure and performance climate were positively related. Additionally, the results confirmed that there was a significant positive relationship betweeen mastery climate and task orientation and between performance climate and ego orientation.

An Examination of the Relationship Among TARGET Structures, Team Motivational Climate, and Achievement Goal Orientation

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CHAPTER 1
INTRODUCTION

Current research on sport motivation has focused primarily on goal perspective approaches in an attempt to understand behavior in achievement situations (Ames, 1984; Dweck, 1986; Nicholls, 1984, 1989). Various achievement goal theories have been developed in the academic domain; however, many of the theories hold similar tenets. Most importantly, achievement goal theories generally assume that there are two different goals which exist in achievement situations. Although these goals have various labels, there has been general agreement on their definitions. The two goals have been referred to as task-involved and ego-involved goals (Nicholls, 1984, 1989), mastery and performance goals (Ames, 1984, 1992a), and learning and performance goals (Dweck, 1986). Nicholls' (1984) achievement motivation theory has been instrumental in the academic domain and has gained considerable attention in the sport domain; thus, this theory provided the foundation for the present study.

Nicholls' Achievement Motivation Theory

According to Nicholls' (1984) theory, achievement behavior is defined "as that behavior in which the goal is to develop or demonstrate--to self or to others--high ability, or to avoid demonstrating low ability" (p. 328). In achievement situations such as sport, the goal of demonstrating high ability indicates success while low ability implies failure. Nicholls has recognized two separate achievement goals present in achievement motivation that are based on different conceptions of ability and vary developmentally. Task-involved goals utilize self-referenced standards to measure success such as skill mastery, performance improvement, and effort. Ego-involved goals measure success relative to others, using social comparison. In this case, success may be defined as winning the game, scoring the most points/goals, or outperforming others.

The fundamental tenet of Nicholls' (1984) theory involves the differentiation of the concepts of effort and task difficulty from the concept of ability. Specifically, Nicholls theorizes that a child's perception of his or her ability is related to his or her understanding of task difficulty and effort. Before the ages of 5 or 6, a child judges task difficulty by the perception of whether he or she can do the task. Furthermore, high and low perceived ability is based on mastery and whether successful or unsuccessful outcome occurred in relation to task difficulty. By the age of 9, children base their performance outcome on effort and judge ability in relation to the performance of others. Children at this stage equate more effort

with higher ability. High perceived ability results in success at those tasks that few others can do and necessitate more effort.

Developmentally, the child fully differentiates the concepts of ability and effort by the age of 11 or 12. Ability is viewed as a capacity; therefore, effort is limited in its effect on performance. It is at this stage that individuals have the ability to adopt either one or both dispositional achievement goal orientations.

Nicholls (1984) has predicted specific behavioral patterns for each achievement goal orientation in relation to perceived competence, task choice, effort and persistence. For task-oriented individuals with either low or high perceptions of competence, selection of a task that maximizes their chances of demonstrating high ability by self-referenced standards should be the goal. Thus, these individuals should choose moderately challenging tasks. In addition, task-oriented individuals should exert more effort in these tasks and continue their involvement over time. In contrast, ego-oriented individuals will differ in task choice based upon their perception of competence. For individuals with high perceptions of competence, demonstration of high ability will occur on moderately difficult tasks where success indicates high ability. Individuals with low perceptions of competence are predicted to choose very easy or very difficult tasks. In terms of effort and persistence, ego-oriented individuals should put forth more effort and persist in the activity. However, ego-oriented individuals with low perceptions of competence may not use maximal effort and may even discontinue their involvement. Therefore, ego-oriented individuals,

especially those with low perceived competence are presumed to display maladaptive achievement behaviors.

Dispositional Goal Orientation Research

Sport research has shown that a task orientation may promote more positive motivational outcomes. Athletes with a task orientation have reported greater intrinsic motivation and more effort exerted (White & Duda, 1994), increased levels of enjoyment (Duda, Chi, Newton, Walling, & Catley, in press; Duda & Nicholls, 1992), and continued involvement for a longer period of time (Duda, 1988). These individuals are also more likely to endorse sportspersonlike behavior (Duda, Olson, & Templin, 1991) and believe that success is achieved through effort and hard work (Duda & Nicholls, 1992; Seifriz, Duda, & Chi, 1992). Conversely, research has generally linked ego orientation with negative achievement behaviors. Athletes with an ego orientation have reported greater depression and less enjoyment after a loss (Boyd, 1990; Duda, Newton, & Chi, 1990), more pre-game state anxiety (Duda et al., 1990), and a belief that success is the result of having high ability (Duda, Fox, Biddle, & Armstrong, 1992). Additionally, they have reported putting forth less effort (Duda, Smart, & Tappe, 1989) and are more likely to drop out of sport (Ewing, 1981).

Situational Goal Structure

Researchers have suggested that the achievement goal orientation an individual develops may be influenced by both individual differences and situational factors (Ames, 1984, 1992a; Duda, 1993; Nicholls, 1984, 1989). The majority of the sport research thus far has examined the relationship between individual differences in goal orientations and motivational beliefs and outcomes. In regard to situational factors, achievement environments may promote either a task-involved or an ego-involved goal perspective dependent upon which goal perspective is emphasized by the teacher, parents, and/or coach.

Ames and her colleagues (Ames & Ames, 1984; Ames & Archer, 1988) have reported that the goal structure of the learning environment, referred to as the motivational climate, influences the student's goal perspective in the classroom. Ames (1992a) proposes that the motivational climate is shaped by the adult who designs the environment through his or her own beliefs, use of rewards, and expectations.

Sport research has also found the motivational climate to be related to athletes' perceptions and achievement behavior (Seifriz, et al., 1992; Walling, Duda, & Chi, 1993). Specifically, Seifriz et al. found that athletes who perceived their team motivational climate to be a mastery climate reported more enjoyment for the sport, the belief that success is achieved through effort, and more overall intrinsic motivation. Conversely, athletes in perceived performance

climates reported less enjoyment for the sport, believed that success was the result of ability, and felt greater anxiety.

In summary, the research suggests that a mastery or task orientation would promote a more adaptive motivational pattern. With a task orientation, individuals would concentrate on mastering new skills, improving upon previous performances, exerting more effort, and considering failure a part of learning. When self-referenced standards are used to measure success, these individuals should experience more success. In contrast, ego-oriented individuals focus on their ability, measuring success relative to others. The individuals' perceptions of competence in the situation at hand will dictate how challenging a task they will choose and how much effort they are willing to exert. For some, the goal may be to avoid demonstrating their lack of ability. Certainly, this orientation does not promote positive learning strategies for all individuals.

Statement of the Problem

If a mastery or task orientation is the more adaptive orientation, then how do we encourage and develop a mastery orientation? The motivational climate is predicted to influence one's achievement goal orientation (Ames, 1992a; Nicholls, 1989). Ames (1992b) has established a link among the environment, achievement goals, and students' motivated behavior. Specifically, Ames has demonstrated that the environment influences one's achievement goal orientation that influences his or her behavior.

More recently, Ames (1992a; 1992b) advocated the need to identify salient structures within the environment, in this case the classroom, that contribute to a mastery orientation. She argued that classroom structures do influence the motivational climate that ultimately impacts the student's achievement orientation. Educational research has identified certain structures as being salient to the development of a mastery goal orientation (Bossert, 1979; Epstein, 1988; Marshall & Weinstein, 1986). These structures are: task, authority, reward, grouping, evaluation, and time, ordered as such to form the acronym, TARGET (Epstein, 1988).

Since the sport setting has a similar learning environment to the classroom, these TARGET structures would appear to be relevant, although there is no empirical evidence to support this last point. However, Ames (1992a) has suggested that the same TARGET structures identified for the classroom would be appropriate for sport settings.

Extrapolating from Ames' work (1992a), there would seem to be a tenable relationship among the TARGET structures, team motivational climate, and achievement orientation. The achievement goal the coach chooses to emphasize within the TARGET structures is defined by the strategies and behaviors the coach demonstrates. If the coach emphasizes mastery goals, then the team motivational climate will likely be perceived as a mastery climate. Experiencing this mastery team climate will then lead to development of a task orientation.

There is evidence in the sport literature that supports this relationship. Research has demonstrated that there is indeed a

relationship between coaches' behaviors and athletes' self-perceptions and motivation (Black & Weiss, 1992; Horn, 1985; Smith, Smoll, & Curtis, 1978, 1979). Smith et al. (1979) found that coaches who demonstrated more frequent use of technical instruction, positive reinforcement, and mistake-contingent encouragement had players who enjoyed the sport more and had higher self-esteem. Black and Weiss (1992) reported coaches' behaviors also influenced their athletes' perceptions of success, preferences for optimal challenging tasks, and effort. Additionally, Horn (1985) found a relationship between certain coaches' behaviors and athletes' perceived competence. Specifically, she reported that athletes who received contingent and appropriate feedback from their coach regarding successful and unsuccessful performances indicated higher perceived competence over the season. Finally, Ebbeck and Becker (in press) found that perceptions of high parental task orientation, high mastery team climate, and low performance team climate significantly contributed to predicting athletes' task orientation.

The coach may influence how athletes perceive their team motivational climate by the strategies and behaviors the coach employs within this team environment. Very little research has been conducted on athletes' perceptions of their coach's behavior, especially in regard to specific environmental structures, and how this may ultimately influence the athletes' goal orientation.

Thus, the purpose of this study was to examine the relationship among TARGET structures, team motivational climate, and achievement goal orientation in a sport setting. A secondary

purpose was to determine which TARGET structures would contribute to a mastery team climate. Based on theoretical predictions and empirical research, the following hypotheses were formulated:

1. Each TARGET structure would have a significant positive relationship with mastery team climate.
2. Each TARGET structure would have a significant inverse relationship with performance team climate.
3. Mastery team climate would have a significant positive relationship with task orientation.
4. Performance team climate would have a positive relationship with ego orientation.

In addition, due to the exploratory nature of this study, two research questions were formulated:

1. Which TARGET structures would contribute most strongly to a mastery climate?
2. Would there be a direct relationship between TARGET structures and athletes' achievement goal orientation?

Assumptions

Every study has conditions that are affirmed to exist since those conditions are generally either not testable or observable; hence, they must be assumed. In this study, subjects were expected to answer the self-report questionnaires honestly and completely.

Limitations

This study had several possible limitations that may have affected the results. The study was limited in scope with respect to possible gender/sport differences. Two different sports were selected, baseball for boys and softball for girls; therefore, if any gender/sport differences did exist, they may have been due to either differences between the two sports or to gender differences. However, it was not the intent of the present study to measure gender/sport differences. A second limitation may have resulted from the lack of involvement of every potential subject within the selected sample. A number of subjects were unavailable since they did not return signed parental informed consents. It is possible that these individuals may have answered the questionnaires differently than those subjects who did participate in the study. Finally, one of the questionnaires was developed specifically for this study and thus, has not been thoroughly tested across different populations.

Delimitations

The exploratory nature of this study may limit the generalizability of the results. The results may generalize only to high school male baseball and female softball players between the ages of 14-18 years. Additionally, the results may generalize only to athletes in the Pacific Northwest at most, since the subjects were from approximately a 40-mile geographical radius of Corvallis, Oregon.

CHAPTER 2
REVIEW OF RELATED LITERATURE

Contemporary motivation research has developed toward a social cognitive approach. Rather than examining how variables contribute to and predict performance, a social cognitive approach emphasizes the affective and cognitive determinants and consequences of behavior (Duda, 1993; Roberts, 1993). Investigation of social and psychological factors that affect achievement-related behaviors in sport should further enhance our understanding of motivation. This chapter is comprised of five sections: (a) a brief summary of Nicholls' Achievement Motivation Theory; (b) research involving the relationship between achievement behavioral correlates and goal perspectives; (c) research examining the relationship between goal perspectives and beliefs in sport; (d) research concerning perceived team motivational climate; (e) examination of TARGET structures; and (f) research examining a direct relationship between coaches' behavior and athletes' goal achievement orientation.

Nicholls' Achievement Motivation Theory

Nicholls (1984, 1989) Achievement Motivation Theory assumes that there are two major goal perspectives, task involvement and ego involvement. The manner in which individuals judge their success is dependent upon the goal state they experience in the

achievement situation. In a state of task involvement, the criteria used to measure subjective success are self-referenced. Skill mastery, performance improvement, and working hard would constitute subjective success in this state. Conversely, in an ego involvement state, subjective success is demonstrated by normatively referenced criteria. Ego-involved individuals use social comparison standards to measure their success such as winning the contest, beating others, or performing as well as others with less effort.

However, it is important to note that both task-involved and ego-involved individuals are interested in winning (Duda, 1993). Several misconceptions have been generated regarding task- and ego-involved individuals. Task-involved individuals are assumed to want only to have fun and are not concerned with the outcome of the activity. Likewise, ego-involved individuals are often assumed to care only about who wins or loses and not about playing well. Neither assumption is accurate; individuals in either goal perspective want to win and wish to play as well as possible. Task-involved individuals are just as competitive as ego-involved individuals; the obvious difference between these two perspectives primarily involves the relative importance of the outcome compared to the competitive process.

There are also individual differences concerning why one is task-involved verses ego-involved. These individual differences, referred to as task orientation and ego orientation, are a predisposition or proneness toward task or ego involvement. Nicholls (1989) stated that task and ego orientation are orthogonal

and not bipolar as Dweck and her colleagues (1986; Dweck & Leggett, 1988) have argued. Thus, individuals may be high in both task orientation and ego orientation, or be high in one orientation and low in the other, or be low in both task and ego orientation (Duda, 1988).

Presently, two instruments are available that measure task and ego orientation in sport and physical activity. Roberts and Balague (1991) have developed the Perception of Success Questionnaire (POSQ), while Duda and Nicholls (1991) have developed the Task and Ego Orientation in Sport Questionnaire (TEOSQ). Both instruments reportedly measure the dispositional proneness for task and ego involvement in a sport setting, even though the scales' psychometric development was done independently of one another. Similar findings have been reported by researchers employing the POSQ and/or the TEOSQ, with respect to the relationship that exists between the two orientations. The two subscales have been found to be orthogonal in nature, supporting Nicholls' theoretical contention that task and ego orientation are independent constructs (Duda, 1992; Roberts & Balague, 1991).

Relationship Between Achievement Behavioral Correlates and Goal Perspectives

Nicholls (1989) states that the two goal perspectives, perceived competence, and behavior are interrelated. Task involvement should result in adaptive behaviors that include long-term accomplishments and maximum motivation. In general, task-involved individuals report stronger work ethics, choose moderately

challenging tasks or opponents, and persist longer in achievement situations, regardless of their perceived competence, than ego-involved individuals. Ego involvement requires high perceptions of competence in order to maintain adaptive behaviors since the subjective judgment of success will not always occur. No matter how competent an individual may be, eventually someone will have more ability and outperform this individual. Consequently, maintaining a high perception of competence is much less secure within an ego-involvement state. The less competent an ego-involved individual feels, the more a maladaptive behavioral pattern is expected. This individual is more likely to reduce his or her effort, quit trying, or claim a lack of interest when compared to a task-involved individual or ego-involved individuals with high perceived competence (Jagacinski & Nicholls, 1990). Moreover, this individual is not expected to experience performance improvement and, thus, is more likely to drop out.

In classroom studies, Nicholls and his colleagues (Nicholls, Chueng, Lauer, & Patashnick, 1989; Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990; Nicholls, Patashnick, & Nolen, 1985) found that the students' academic goal perspective impacted upon their beliefs about the causes of success in school. Nicholls et al. (1989) reported that students with high task orientation believe that gaining knowledge, trying hard, showing an interest, attempting to understand rather than memorize, and cooperating with others are the chief causes of success. In contrast, ego orientation is linked to the beliefs that superior ability and trying to perform better than classmates are the causes of success. Further, these students do

not emphasis cooperative learning or even wish to understand the academic task in order to judge themselves successful.

Nicholls (1989) proposed that an individual's goal orientation, or dispositional proneness to a specific goal perspective, is also associated with his or her views about the wider purpose of the achievement activity. Moreover, these views help determine what behaviors they consider acceptable within the achievement situation. Research has found that a task orientation is associated with the view that through education one should enhance one's commitment to society, one's understanding of the world, and one's desire to continue learning (Nicholls, et al., 1985; Thorkildsen, 1988). An ego orientation is linked to the view that school is the means to an end, such as wealth and social status.

Relationship Between Goal Perspectives and Beliefs in Sports

Recent research conducted in the sport domain indicates that consistent relationships between task and ego orientation and achievement beliefs (purpose of the activity and causes of success) found in the educational literature also exist in sport (Duda, 1989b; Duda & White, 1992; Hom, Duda, & Miller, 1993; Duda et al., 1991; Duda et al., 1992). Duda (1989b) replicated a study done by Nicholls et al. (1985), using high school athletes. Through factor analysis, seven purpose of sport subscales were examined. They were: mastery/cooperation, physically active lifestyle, good citizen, competitiveness, high status career, enhanced self-esteem, and

social status/getting ahead. A positive correlation was found between task orientation and each of the following purpose of sport subscales: mastery/cooperation, active physical lifestyle, good citizen, and enhanced self-esteem. The social status/ getting ahead subscale was negatively correlated with task orientation. Conversely, ego orientation was positively associated with enhancing self-esteem, social status, and competitiveness, while negatively linked with good citizen. A secondary purpose of the study was to determine if there were gender differences in the degree of task and ego orientation and the perceived purpose of sport. Gender differences were found; males tended to be more ego-oriented than females, while females tended to be more task-oriented than males. Specifically, females reported mastery/cooperation to be a more important purpose than males. Males, however, perceived that competitiveness, social status/getting ahead, and high status career subscales were the important purposes of sport compared to females. This study provides evidence that a task orientation is associated with more adaptive purposes for involvement in sport.

Similarly, sportspersonship attitudes and perceived legitimacy of injurious acts in relation to goal perspectives were examined (Duda et al., 1991). A canonical correlation analysis indicated that higher scores on unsportspersonlike play/cheating and lower scores on sportspersonship predicted a higher ego orientation and a lower task orientation. Athletes having a higher ego orientation reported that intentionally injuring an opponent, which resulted in the opponent missing the rest of the game or being out for the season, as

well as using nonphysical intimidation toward their opponents was legitimate. Additionally, significant gender differences were found. Unsportspersonlike play/cheating, strategic play and the intentional injuring of an opponent were deemed less acceptable by females.

Several studies have investigated the relationship between goal perspectives and perceived causes of success in sport (Duda et al., 1992; Duda & Hom, 1993; Duda & White, 1992; Hom, et al., 1993; Duda & Nicholls, 1992). Duda and Nicholls (1992) found that a task orientation was correlated with the belief that sport success is the result of greater motivational effort and not deception. In contrast, ego orientation was associated with the belief that superior ability leads to success. Hom and colleagues (1993) employed youth sport basketball players in their investigation of the relationship between goal perspectives and perceived causes of success in sport. Results revealed that a high task orientation was associated with greater motivation and a lack of emphasis on deception. A strong ego orientation was linked to the belief that superior ability, and to some extent deception, were the causes of success in basketball. Further, athletes who were high in both task and ego orientation reported that they enjoyed the sport, were satisfied with basketball, and had higher perceived competence in basketball.

Another study (Duda & White, 1992) examined this same relationship, using elite skiers. Task orientation was found to positively relate to the belief that skiing success was the result of hard work, practice, and superior ability. Ego-oriented skiers tended to believe that it is essential to have superior ability, acceptable to use illegal training methods such as blood doping, and necessary to

rely on external factors such as luck or using the right equipment in order to succeed. Interestingly, elite skiers perceived that superior ability is an important element for successful performance, regardless of their goal perspective.

Using a cross-cultural approach, Duda and her colleagues (1992) investigated this relationship with ten year old British children. In addition to questions regarding their perception of the causes of success, students were also asked about their degree of satisfaction with and interest in sport. Through factor analysis, the results revealed that motivation/effort belief, cooperation, and task orientation all loaded on a task dimension. The ego dimension was associated with ability belief, deception belief, ego orientation, and work avoidance. The enjoyment/interest variable had a strong positive correlation with the task dimension. The ego dimension was found to positively correlate with boredom while the task dimension had an inverse relationship with boredom.

In sum, the findings from this study would suggest that task-oriented sport participants perceive success as a result of effort and cooperation, demonstrating adaptive motivational patterns. The ego-oriented participants appear to display maladaptive motivational behaviors, reporting that success stems mainly from the possession of superior ability. As a result of this belief, these participants might be more likely to view deceptive methods and external factors as acceptable means to avoid failure. Sadly, these ego-oriented children also reported an endorsement of work avoidance, implying that they may define their success by not trying or by claiming a lack of interest in certain achievement activities.

Overall, there is ample evidence to suggest that athletes with a task orientation believe that the key to success is through hard work and maximal effort. Ego-oriented athletes assume that only superior ability will result in success and rely on other means such as deceptive tactics and/or external factors to be successful. Furthermore, findings suggest that athletes hold back on their effort or claim a lack of interest in order to avoid failure. These athletes are uncertain about their level of competence; and rather than try and possibly fail, they resort to unproductive motivational behaviors to save face. Clearly, a task orientation would provide more adaptive motivational patterns for sport participants at all competitive levels.

The relationship between goal perspectives and intrinsic motivation has also been examined. Nicholls (1989) predicted that task involvement would have a positive association with intrinsic motivation; whereas, ego involvement would have an inverse relationship with intrinsic motivation. Duda and her colleagues (Duda et al., in press) examined this relationship in a sport setting, finding that task-oriented participants enjoyed their sport more and were also more interested in their sport than ego-oriented participants. No significant relationship emerged between intrinsic interest and ego orientation. Previous sport research has also demonstrated a link between task orientation and intrinsic satisfaction with and interest in playing sport (Duda et al., 1991; Duda & Nicholls, 1992; Hom et al., 1993). However, no support for an inverse relationship between ego orientation and intrinsic motivation has been found.

Perceived Team Motivational Climate

Current research on goal perspectives suggests that the goal perspective state, which is predominate, is a function of dispositional differences and situational factors (Ames, 1984, 1992a; Duda, 1993; Nicholls, 1984, 1989). Achievement environments may vary in their degree of task- or ego-involvement depending on how situations are structured. Ames (1992a, 1992b) proposes that parents, teachers, and/or coaches create psychological climates that impact individuals in achievement situations. Adults structure the achievement environment, creating a motivational climate by the salient cues, rewards, and expectations they convey. This motivational climate influences the goals participants adopt as well as their perceptions, attitudes, and behaviors.

However, in any situation, individuals may differ in the degree to which they focus on certain cues and to how they interpret these cues (Ames & Archer, 1988). Maehr (1984) has argued that individuals differ in how they give meaning to their experience; therefore, it would be more appropriate to refer to the motivational climate as the psychological climate, emphasizing the role of individual experiences, meaning, and interpretation. From this line of research, it appears critical that a subjective measure of the motivational climate be examined rather than an actual observation when measuring the climate. The environment each individual experiences will differ, even within the same general context.

In the academic setting, Ames (1984, 1992a, 1992b) has been responsible for a majority of the motivational climate research. In her work, Ames has argued that classroom environments are generally more or less task- or ego-involving; she has labeled these climates mastery- and performance-oriented, respectively.

In an initial study conducted by Ames and Archer (1988), a strong relationship between high school students' perceptions of a mastery climate and motivation was found. Students who perceived their classroom to be mastery-oriented reported using more effective learning strategies, preferring more challenging tasks, enjoying their class more, and believing that effort leads to success. In this study, the subjects were academically advanced students; and one would assume that these elite students would be more knowledgeable about and use more effective learning strategies. However, the findings suggest that students' use of learning strategies was associated with the motivational climate they perceived in the classroom. Specifically, the more mastery-oriented the classroom was perceived to be, the more students chose to approach tasks and engage in learning. These authors argue that the mastery climate promotes "long-term use of learning strategies and a belief that success is related to one's effort" (p. 265).

Ames and Archer (1990; cited in Ames, 1992a) extended their initial study by tracking the same students one year later. The purpose of this study was to examine long-term consequences of involvement within mastery or performance climates. The authors were interested in determining if students who were involved in a mastery climate for two consecutive years would differ for those

students who were involved for only one year and whether these students would differ from students who had not been involved in a mastery climate either year. The findings revealed that there were significant differences between the groups. They found a significant positive relationship among the number of years involved in a mastery climate, the use of effective learning strategies, and positive attitudes toward their class. Findings from these studies provide supportive evidence for the premise that students' motivational behaviors are influenced by the motivational climate they experience and that involvement in a mastery climate leads to adaptive motivational behaviors even for academically advanced students.

The influence of the motivational climate on adaptive and maladaptive behaviors has also been examined with younger children. Powell (1990), employing 120 fourth grade students in math classes, found a significant positive relationship between students who viewed their math classes as mastery-oriented and their reported use of effective strategies and interest in learning math. Ames and her colleagues (Maehr & Ames, 1989; cited in Ames, 1992a) found similar results in their study with junior high science classes. Students who perceived their science classes to be more mastery-oriented indicated that they used more effective learning strategies and preferred more challenging tasks. In another study by these authors (Ames & Maehr, 1989; cited in Ames, 1992a), group differences between at-risk and non-at-risk elementary students on a wide range of motivational variables were examined. After determining that there were significant differences between the

two groups, the relationships among perceived motivational climate and several motivational variables were investigated. A strong positive relationship was found among a mastery climate, effective learning strategies, intrinsic motivation, and positive attitude toward class for both the at-risk and the non-at-risk students.

To summarize, the supportive research suggests that a mastery climate was strongly associated with the use of positive motivational strategies and results in adaptive achievement behavior. These findings appear to generalize to a large student population. Studies have ranged from elementary school to high school classrooms, from elite students to at-risk students, and also across a wide range of subject matter areas (Ames, 1992; Duda 1992, 1993; Nicholls, 1992; Roberts, 1992). Researchers have argued that the same relationship found between a motivational climate and motivation in the academic domain exists in sport as well. Although the majority of the research has been conducted in the classroom, there is limited research currently available involving the sport domain.

Drawing from and extending Ames and Archer's (1988) work, Seifriz and his colleagues (1992) developed a sport-specific measure of perceived motivational climate, the Perceived Motivational Climate in Sport Questionnaire (PMCSQ). This questionnaire was designed to measure athletes' perceptions of team motivational climate with mastery and performance climate as the two subscales. From this instrument, a mastery climate could be distinguished from a performance climate by the following item selections. Athletes who indicated that trying hard was rewarded,

that players were encouraged by the coach, and that every player had an important role on the team perceived a mastery team climate. A performance climate was marked by agreement with such items as the following: teammates try to outdo each other, players are punished for mistakes, and recognition is limited to only a few talented players.

The purpose of Seifriz et al.'s (1992) study was to examine the relationship of this sport-specific motivational climate to intrinsic motivation and beliefs about causes of success. Results indicated that male high school basketball players who perceived more of a mastery climate reported higher overall intrinsic motivation and specifically more enjoyment and interest in the sport. In terms of their beliefs about the causes of success, similar findings to classroom studies were demonstrated. Players with high perceptions of a mastery climate reported believing that high effort leads to success compared to players perceiving a lower mastery climate. Similarly, players who perceived a performance climate were more likely to believe that high ability would lead to success than those athletes who reported a lower performance climate. However, in a follow-up canonical correlation analysis, no significant functions emerged between motivational climate and beliefs about the causes of success.

In addition, the degree of relationship among the TEOSQ's task and ego orientation scales and the PMCSQ's mastery and performance scales was examined by Seifriz and colleagues (1992). Only the correlation between task orientation and performance climate revealed significance, demonstrating a negative relationship. The

other three relationships were correlated in the expected direction but were not found to be significant. Specifically, mastery climate was positively associated with task orientation and negatively related to ego orientation. Performance was positively correlated with ego orientation.

In a later study, Walling and her colleagues (1993) examined the construct and predictive validity for the PMCSQ. Employing confirmatory factor analysis, these authors confirmed PMCSQ's structure as two-dimensional and provided further support for the instrument's predictive validity. Predictive validity was determined by comparing the PMCSQ's subscales with performance worry and team satisfaction. Mastery team climate demonstrated a significant positive correlation with team satisfaction and a significant negative relationship with performance worry. Conversely, significant correlations were reported for performance team climate and the two variables of interest, a negative association with team satisfaction and a positive one with performance worry.

However, a moderate negative correlation between the mastery and performance climate scales was reported. This evidence suggests that the two scales are not orthogonal, as the TEOSQ's task and ego orientation scales have been found to be, but rather they are inversely related. These authors propose that it would be contradictory to be on a team where players, for example, are encouraged to work on weaknesses and are punished for making mistakes.

Results of the Walling et al. study (1993) in combination with those of Seifriz and colleagues (1992) indicate that a pattern has

emerged in sport. Perceptions of a mastery team climate are associated with greater reported exerted effort, greater enjoyment, greater satisfaction with one's team, lower performance worry, and the belief that success is achieved through hard work.

Clearly, two lines of research have been examined. One line has focused on individual differences in dispositional goal orientation. Research in this area has primarily investigated motivational and behavioral correlates of task and ego orientation (Duda, 1992, 1993; Nicholls, 1992). The second line has focused on situational influences such as the motivational climate perceived within the achievement environment (Ames, 1992a, 1992b; Seifriz et al., 1992; Walling et al., 1993). In concert with the second line of research, Ames (1992a, 1992b) has proposed using a systematic analysis of actual classroom structures to examine how certain structures within the classroom can make different goals salient. Specifically, she has emphasized using an approach that would identify: "(a) salient structures in the classroom environment that can contribute to a mastery goal orientation, (b) the ways in which these structures relate to each other and how they are experienced by individual students, and (c) interventions that focus on modifying or changing these structures" (1992b, p. 263).

According to Epstein (1988, 1989), after years of extensive research with various researchers, six school and classroom structures affecting students' academic and nonacademic outcomes have been identified. These structures are task, authority, reward, grouping, evaluation, and time, using the acronym, TARGET. These six structures will hence be referred to as TARGET structures. Both

Epstein and Ames (1992a, 1992b) have emphasized that the TARGET structures are overlapping and interdependent. Ames has questioned whether the structures have additive or multiplicative effects on the learning environment. In addition, Ames has proposed specific strategies that could be used in intervention programs promoting mastery goals within each structure.

Examination of TARGET Structures

The TARGET structures have been identified as structural features of any achievement environment and have been found to influence a wide range of motivational beliefs and behaviors that include task choice, perceived competence, interest in learning, and positive attitudes toward the activity (Epstein, 1988, 1989). A brief description of each TARGET structure and relevant strategies that would promote a mastery climate follow.

Task structure

In any achievement activity, the design and degree of difficulty of the task are critical elements. This would include such areas as the content and teaching progression of the program used, the level of difficulty needed to perform the work, the design of the work required, and materials demanded for completion of the work (Epstein, 1988). Varied and diverse tasks have been reported to enhance an interest in learning and a development of a task orientation (Marshall & Weinstein, 1984; Nicholls, 1989; Rosenholtz

& Simpson, 1984). Blumenfeld (1992) summarized the salient task dimensions to include variety, diversity, challenge, control, and meaningfulness.

Rosenholtz and Simpson (1984) demonstrated that the design of tasks impacts students' perceptions of their ability and that of others. The uniformity of tasks has been found to contribute to an unidimensional classroom; and consequently, in these classrooms, students tended to use the same materials and had the same assignments. Conversely, in multidimensional classrooms, students tended to work on different tasks and assignments, providing less opportunity for students to use social comparison in terms of their performance evaluations.

Authority structure

Participation, decision making, and autonomy on the part of the student are relevant dimensions of the authority structure (Ames, 1992b; Blumenfeld, 1992; Epstein, 1988). The kind and frequency of participation determine whether students are active or passive learners in the achievement situation. Active learners are those students who share in the decision making of which topics should be studied, when skills are to be evaluated, and when to ask for help on difficult subject matters. Essentially, student choice and autonomy should be encouraged and appropriate support be provided to those students who may necessitate more help. Ames has suggested that giving students opportunities to make choices may be viewed as supporting their decision making; however, students must perceive

that their choice is based on interest and not made to protect their perception of competence.

Reward structure

The procedures and methods employed to recognize students for their progress and achievement constitute the reward structure. The type of rewards used, both tangible and intangible ones, and their variations in purpose are generally determined by the values the educator or school deems salient (Epstein, 1988). Social comparison among students may be promoted or diminished depending on the type of rewards emphasized. Rewards that are public and based on ability will tend to encourage students to use more social comparison. If, however, rewards are given privately for individual accomplishment and progress or given fairly, then positive attitudes toward learning are more apt to develop. Obviously, some forms of recognition are necessary in order to encourage students to continue to learn and to work toward skill mastery.

Grouping structure

The criteria used to place students in instructional groups and the ease at which students may change groups are important concepts in defining the grouping structure (Ames, 1992a; Epstein, 1988). Groups are treated differently, generally, by the teacher, by giving more instructional time, opportunities, work, recognition, and

attention to the brighter or more advanced groups. When groups are assigned by ability or by other restrictive methods, students' academic and social experiences may be limited. By making assignment to groups and/or movement within groups flexible, teachers provide opportunities for students to broaden their interacts with others. Flexible grouping arrangements also allow students the opportunity to establish their own academic goals, increase classroom participation, and interact with different social peer groups. Group formation that pools different ability levels together and allows for movement between groups should limit students from comparing themselves to others in their group (Filby & Barnett, 1982; Marshall & Weinstein, 1984). This structure has been reported to have a strong connection with the task structure (Epstein, 1988).

Evaluation structure

Three important characteristics of the evaluation structure include the standards used to measure learning and behavior, the criteria for monitoring and judging the standards, and the reporting procedures used to assess performance with students (Epstein, 1988; Marshall & Weinstein, 1984). Low peer comparison results when private noncomparative standards of evaluation are used. Moreover, if evaluations are based on comparison with past performance and in line with students' goals, public comparison is minimized and students are more likely to associate effort with performance. Consequently, an effective evaluation structure is one

that involves challenging but attainable goals, fair and clear procedures for monitoring progress, and explicit and frequent information about progress (Epstein, 1988). According to Epstein, the evaluation structure is closely associated with the reward structure; this becomes apparent as rewards or punishments subsequently result from the standards and judgments that are made.

Time structure

Educational research has emphasized the pace of instruction and time allocated for task completion to identify important components of a time structure (Ames, 1992a; Epstein, 1988). Each student's work schedule needs to be flexible and individually established. Students must have time to learn or master the assigned task rather than have a more rigid schedule where the more skilled students become bored and those less skilled are not given enough time to learn. Ultimately, a flexible time structure will allow for differences in students' rates of learning. This structure has strong connections with task structure, authority structure, grouping structure, and evaluation structure.

In Ames' (1992b) latest review article, only three of the TARGET structures were identified: task, authority, and evaluation/recognition. Incorporating the six structures into three structures may result from the strong connections that Epstein (1988) reported among several of the TARGET structures.

Ames (1992b) has emphasized the need for clear identification of the salient environmental structures and subsequent systematic analysis of these structures. Once the structures have been defined, it then is possible to implement strategies and principles that promote a mastery climate within each structure. Ames has stressed that a comprehensive approach to classroom intervention must be employed; that is, that the approach must intervene and modify all the salient structures and not key on only one or two structures. By keying on individual structures rather than on all the structures, only short-term effects may result. Classroom research that has followed this approach has generally involved intervention and/or manipulation studies (Ames, 1992a; Brophy & Merrick, 1987; Treasure, 1993). In order to establish a cause and effect relationship, experimental designs are required which manipulate the environmental structures, thus determining how mastery goals can be created.

Few studies in the classroom or in the sport setting have taken this manipulation approach. Ames (1992a) utilized such a comprehensive intervention program, assigning elementary school teachers randomly to either intervention or control groups while controlling for grade level and school representation. Teachers in the experimental groups were provided with specific instructional practices aligned to the mastery-oriented strategies and principles defined for each structure. At-risk students were the central focus of this study. Assessment of at-risk students in the experimental group was compared to at-risk students in the control group on such measures as learning strategies, intrinsic motivation, perceived

competence, and attitudes. Results indicated that after one semester, students in the experimental group reported using more effective learning strategies, having greater intrinsic motivation, and having a more positive attitude than students in the control group. Moreover, Ames ascertained that the changes in teachers' strategies significantly influenced the motivational climate in the experimental classrooms.

Although Ames' work (1992a) was in the classroom, she emphasized that an intervention approach could easily be extended to a sport setting. Treasure (1993) adapted Ames' work employing a nine week intervention program using middle school physical education classes. Randomly selected classes were assigned to either a mastery or performance climate manipulation. In the initial stages of this study, strategies were identified that promoted task-involved goals and ego-involved goals. These strategies were then organized into Epstein's (1988) six TARGET structures and operationalized into a wide range of specific instructional practices so the teacher, in this case the investigator, could easily implement these strategies. Treasure hypothesized that by manipulating the six structures of a soccer activity, students' perceptions of the motivational climate would override their dispositional achievement goal orientation and be more predictive of such motivational variables as attitudes toward activity, beliefs about causes of success, level of interest and satisfaction toward the activity, and preference for challenging tasks. Consistent with previous educational research, the results demonstrated that by manipulating the motivational climate, the students who perceived a mastery

climate displayed more adaptive behaviors than students in a performance climate.

Direct Relationship Between Coaches' Behaviors and Achievement Goal Orientation

Previous research conducted in the sport domain has found that there is a relationship between coaches' behaviors and athletes' self-perceptions (Black & Weiss, 1992; Horn, 1985; Smith et al., 1978, 1979). A majority of this research has addressed the relationship in terms of leadership behaviors.

Smith, Smoll, and colleagues (1978, 1979) were among the first researchers to attempt to analyze coach-athlete relationships. With the development of the Coaching Behavior Assessment System (CBAS; Smith, Smoll, & Hunt, 1977), these researchers were able to observe and code actual coaching leadership behaviors in a natural sport setting. Twelve CBAS categories were developed which coded specific behaviors, and these categories were arranged into two classes, reactive behaviors and spontaneous behaviors. In their initial study, Smith et al. (1978) observed 51 male Little League Baseball coaches during baseball games over the course of a season. At the end of the season, coaches were asked to complete a self-report questionnaire, indicating their own perceptions of their behavior and determining how often they engaged in specified behaviors. Players also completed self-report questionnaires and were individually interviewed by the researchers at the end of the season. Specifically, players were asked about their perceptions and

recall of how their coach behaved and their attitude toward the coach. In sum, the information collected included actual coaching behaviors, coaches' perceptions of their behaviors, players' perceptions of the coaches' behaviors, and players' attitudes toward their coach. Results demonstrated that coaches who frequently used technical instruction, positive reinforcement, and mistake-contingent encouragement had players who enjoyed the sport more and reported higher self-esteem. Low self-esteem players differed the most in their attitudes toward coaches, responding positively to supportive or instructive coaches.

In follow-up study (Smith et al., 1979), 31 Little League Baseball coaches were randomly assigned to either a training program or to a control group. The training program consisted of a 3-hour intervention program, designed to help coaches relate more effectively with their players. All coaches were observed and coded for four games during the season and 325 players were interviewed at the end of the season. The trained coaches were evaluated more positively by their players and these players also reported liking their sport more than players of untrained coaches, indicating that effective behaviors could be taught to coaches. The results of these two studies demonstrated that coaches could be trained to improve their behaviors and, as a result of these changes, athletes would respond more positively to their coaches and enjoy the sport more.

Horn (1985) also investigated the relationship between coaching behaviors and changes in athletes' self-perceptions. She examined 72 female junior high school softball players and their coaches, using the CBAS to code coaches' behaviors during games and

practices. This study employed the individual player as the observational unit by recording coaches' behaviors directed toward individual athletes. The purpose of the study was "to determine to what extent the coaching evaluations that young female athletes received in response to their performance, in combination with the skill mastery they achieved, were related to changes over the season in their perceptions of competence, control, and success expectancy" (p. 175). One interesting finding revealed that coaches' behaviors differed from practices to games, and that players perceived coaches' practice behaviors to be more salient indicators of their ability than coaches' game behaviors. Horn reported that when coaches' gave reinforcement feedback or no feedback following athletes' successful performance, these responses negatively contributed to athletes' perception of competence. Conversely, coaches' criticism following athletes' unsuccessful performance was positively associated with higher perceived competence. Horn interpreted these findings to suggest that coaches' feedback should be contingent and appropriate according to the quality of the performance. When reinforcement was given for mediocre performance, the players may have perceived that the coach did not expect them to do any better. In contrast, when players were given mistake-contingent criticism for poor performance, they may have perceived that the coach expected them to perform better.

While Smith et al. (1978, 1979) and Horn (1985) focused on coding actual coaching leadership behaviors, Black and Weiss (1992) designed their study to measure athletes' perceptions of their coaches' behaviors. These behaviors were limited to praise,

instruction, and/or criticism. Specifically, these authors examined whether the perceived coaching behaviors were related to perceived competence, enjoyment, and effort in competitive swimmers. The overall finding indicated that coaching behaviors that were perceived to be contingent and appropriate to performance were significantly related to perceived competence, enjoyment, and effort. Players who perceived that their coaches used more frequent praise, instructional feedback, and encouragement tended to report that they used more positive motivational learning strategies, such as increased effort, preferred challenging tasks, enhanced perceived competence, and enjoyed the sport more.

Employing a different approach, Chelladurai (1984) investigated coaches' leadership behaviors and their effect on group performance and member satisfaction. Chelladurai emphasized that group performance and member satisfaction were determined by the degree of congruence among three states of leader behavior. The three states consisted of required leader behavior, preferred leader behavior, and actual leader behavior. Chelladurai and Saleh (1980) developed an instrument, the Leadership Scale for Sports (LSS), that measured five dimensions of leader behaviors. These leader behaviors were training and instruction, democratic behavior, autocratic behavior, social support, and positive feedback. Using the LSS, Chelladurai examined the relationship between leadership preferences and perceptions of over 200 male intercollegiate athletes in the sports of basketball, track and field, and wrestling. Results indicated that the discrepancy between athletes' preferred and perceived leadership behaviors was associated with athletes'

satisfaction with leadership, team performance, and overall involvement. Athletes who reported higher perceptions of training and instruction and positive feedback compared to their preference tended to be more satisfied with the leadership. In addition, Weiss and Friedrichs (1986) used the LSS questionnaire to examine the relationship between athletes' perceptions of coaching behaviors and various aspects of satisfaction. Positive feedback was the most predictive of team satisfaction while perceived democratic behavior and social support were most predictive of individual satisfaction.

Overall, both actual coaching behaviors and perceived coaching behaviors have been found to influence athletes' motivational outcomes and affect. From the work of Smith, Smoll, and associates (1977, 1978, 1979) and Chelladurai (1984, 1993), there is evidence to suggest that a direct relationship exists between perceived coaches' behaviors and athletes' self-perceptions and behaviors.

In conclusion, classroom and sport research that examined the relationship between goal perspectives and achievement-related behaviors have been reviewed. Task orientation was found to be associated with the use of more adaptive motivational strategies. Similarly, mastery team motivational climate, a situational state utilizing task-involved goals, was linked to these same positive motivational behaviors. Clearly, the research has shown that promotion and development of both a task orientation and a mastery team climate would benefit athletes at all levels of competition. In addition, supportive evidence was provided that indicated a relationship among coaches' behaviors, athletes' self-perceptions, and athletes' achievement-related behaviors.

CHAPTER 3
METHODS

This study was designed to examine the relationship among TARGET structures, team motivational climate, and achievement goal orientation in a sport setting. This chapter is subdivided into five areas: (a) description of subjects, (b) instrumentation, (c) TARGET pilot studies, (d) procedures, and (e) statistical analysis.

Description of Subjects

For this study, 186 high school (junior varsity and varsity) softball players and 171 high school (junior varsity and varsity) baseball players, ranging in age from 14 to 18 years, were selected. Athletes from the selected high schools who were members of the junior varsity and/or varsity baseball or softball teams were potential subjects for this study. The mean age for the overall sample was 16.2 years, while the mean ages for males and females were 16.3 years and 16.0 years, respectively. The ethnic breakdown for the overall sample was 91.6% White, Non-Hispanic; 3.1% Hispanic; 2.5% American Indian or Alaskan Native; 1.4% Asian or Pacific Islander; 0.5% Black, Non-Hispanic; and 1.1% Other, which in general represents the population sample of this geographic region.

Ten high schools located within a 40 mile radius of the Corvallis, Oregon area were selected by the principal investigator. These schools were chosen due to their location and school classification. Four schools were classified by the Oregon School

Activities Association (OSAA) as 4A schools, the largest high school classification in Oregon; three schools were 3A; and three schools were 2A. The baseball and softball teams at each school were comprised in the subject pool. None of the baseball teams had girls on their roster; and, conversely, no boys were members of any of the softball teams. The baseball teams (10 junior varsity and 10 varsity) were coached by males while 10 of the 20 softball teams (6 junior varsity and 4 varsity) had male coaches. The number of years coaches had coached their respective sport at their current school ranged from 1 to 19 years. Eight coaches reported being first year coaches, 15 coaches ranged between 2 to 5 years of local coaching experience, and 14 coaches had coached for 6 or more years at their school. Finally, at the time subjects answered the questionnaires, approximately 50% of the teams had over a .500 win/loss season record.

Initial contact was made with the principals and varsity coaches from each high school, obtaining their consent for the involvement of their student-athletes in this study. One high school principal elected not to be involved in the study; and therefore, another high school with the OSAA classification was included. Approval for the study by Oregon State University's Committee for the Protection of Human Subjects was also obtained (Appendix A).

Instrumentation

A packet containing subject's informed consent form, demographic information, the Task and Ego Orientation in Sport

Questionnaire, the Perceived Motivational Climate in Sport Questionnaire, and the TARGET Questionnaire was administered to all subjects. The three questionnaires were randomly ordered within each packet. Coaches were also requested to complete an information form that asked for the gender of the coach, years of coaching experience, win/loss season record, and number of players on their roster (Appendix B).

Team motivational climate (Appendix C) was measured using the Perceived Motivational Climate in Sport Questionnaire (PMCSQ; Seifriz et al., 1992). The PMCSQ assesses the subject's perception of the motivational climate on his or her sport team. Two subscales are generated for 21, 5-point Likert scale (1=strongly disagree, 5=strongly agree) items. The mastery (task-involving) climate subscale consists of nine items while the performance (ego-involving) climate involved 12 items. Acceptable internal reliability has been demonstrated with alpha reliability coefficients of .80 for mastery and .84 for performance climate reported (Seifriz et al., 1992).

Each subject was asked to think about his or her specific team when responding to this questionnaire. For example, if the subject was a member of the junior varsity baseball team, then he was to think in terms of his junior varsity teammates and coach as he answered each item. This questionnaire was titled "What My Baseball (Softball) Team Is Like."

The Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda & Nicholls, 1991) was the instrument used to measure the subject's achievement goal orientation in her or his sport (Appendix

D). The TEOSQ, which assesses an individual's achievement goal orientation in sport, is composed of 13, 5-point Likert scale (1=strongly disagree, 5=strongly agree) items. Two independent subscales, task orientation and ego orientation, are scored separately. Seven items produce a score for the task orientation subscale, while six items assess the ego orientation subscale. In this study, the subject was asked to think of when he or she felt most successful in baseball/softball and then rate his or her degree of agreement with the 13 items. One item was modified to reflect a baseball/softball skill. Originally it read "I score the most points/goals etc." but was changed to "I get the most hits." This questionnaire has a stem that is read before each of the 13 items and this stem was also modified to refer specifically to baseball or softball. Although the original stem read "I feel most successful in sport when," for this study, the stem read "I feel most successful in softball when" for female subjects and "I feel most successful in baseball when" for male subjects.

Although the TEOSQ has not been published, it has been used in several published studies (Duda, 1989b; Duda et al., 1992; Duda et al., 1991; Hom, et al., 1993). Duda (1992) reported internal consistencies for the task orientation subscale as ranging from .81 to .86 and for the ego orientation subscale from .79 to .90.

The TARGET structures within the team environment were measured by a self-report questionnaire developed by the principal investigator especially for this study (Appendix E). Development of the TARGET questionnaire was based on strategies Ames (1992a) formulated for promoting mastery goals within each TARGET

structure. The TARGET structures produce six subscales: task, authority, reward, grouping, evaluation, and time.

The TARGET questionnaire was reviewed by a panel of five experts; they included a high school softball coach, a high school baseball coach, two sport psychology professors, and a psychology professor. These experts were asked to respond with their suggestions regarding face validity, readability, and content appropriateness. In addition, they were asked to help in the final item selection of the grouping subscale. Six items were submitted to these experts from which they were asked to select the four items that would produce the best combination for the grouping subscale. Four items were identified by the majority of the panel as the items that would best represent the grouping subscale; therefore, these items were retained.

This 24-item questionnaire assesses the degree to which specific instructional strategies and coaching behaviors identified for each structure reflect a mastery orientation as perceived by the subject. Each subscale is scored separately, with four items per subscale, employed in a 5-point Likert scale (1=strongly disagree, 5=strongly agree). The higher the score, the more mastery-oriented the TARGET structure is perceived to be. The item breakdown for each subscale can be found in Appendix E.

TARGET Pilot Studies

The TARGET questionnaire was developed and modified through three separate pilot studies. All three pilot studies employed high

school baseball or softball players from a local high school; these subjects were not included in the main study.

The first pilot study (Appendix F) was administered to 16 varsity baseball players. Cronbach (1951) alpha reliabilities were found to be below an acceptable standard (.70); however, these low results were due to the small sample size and the small standard deviations reported in the analysis. This group of baseball players was asked to point out any problems or ambiguous wording they found when reading the 24-item questionnaire. Minor wording changes were made as a result of their suggestions.

In addition, after closer examination of the evaluation subscale, a decision was made to include additional items in this subscale. The original items did not adequately describe the concepts that differentiate between a mastery climate and a non-mastery climate. One item was also rewritten for the time subscale.

The subjects for the second pilot study were 13 junior varsity softball players. This draft of the TARGET questionnaire (Appendix G) consisted of 28 items; all of the subscales except the evaluation subscale had four items. The evaluation subscale had a total of eight items, three from the first pilot study and five newly developed items. Cronbach (1951) alpha reliabilities were again run, initially on the 13 cases, and then on all 29 cases from both pilot studies. For the items that were answered by both groups, acceptable reliabilities were found for most of the subscales. The grouping subscale was low, while the reward subscale was borderline acceptable. The alpha reliabilities were as follows: task

(.85), authority (.76), reward (.65), grouping (.48), and time (.70). These reliabilities, except for grouping, were considered adequate for the sample size employed and for the exploratory nature of the questionnaire.

The subjects from the second pilot study had several concerns regarding the vocabulary used in certain statements. These specific terms were reworded based on the concerns voiced. For example, these athletes questioned such words as "allocated" and "evaluations." The term "allocated" was changed to read "Time was spent on mastering new skills." Another important point was questioned by this group, that being whether the statements were about the coach or about the team. As a result in the final draft, the following statement was put in the directions "think in terms of your coach when answering each statement."

A third pilot study, involving nine junior varsity baseball players, was undertaken to check the validity and reliability of the items added to the grouping subscale. This draft of the TARGET questionnaire (Appendix H) employed 27 items, 4 items for each of the subscales except the grouping subscale. This subscale retained one item from the second pilot study and six new items were added. From this pilot study, one grouping item was deleted because it caused confusion with many of the subjects. It read "You could be in any group and still be challenged by the coach." Several of the athletes in this pilot study did not understand the concept of a player being challenged by the coach; for this reason, it was deleted from the final draft. In selecting the four best items, inter-item correlations were initially compared. However, the results did not

clearly indicate which four items would be the best combination. The panel of experts was thus asked to help make this decision.

Procedures

Contacts were made with the Oregon State University's Committee for the Protection of Human Subjects, each school district, and the varsity coaches for the approval of this study. Once approval was received from the OSU Committee for the Protection of Human Subjects, high school principals were contacted by telephone. The study was briefly explained to each principal along with the methods and procedures that would be used. Several principals requested a copy of the questionnaires before they would consent to the study. The proposed questionnaires were faxed to these individuals. Eleven high school principals were contacted, ten agreed to be a part of the study. After the principals gave their consent, the 20 varsity coaches, 10 softball coaches and 10 baseball coaches at these schools, were telephoned. The same description of the study was presented to the coaches. The coach was informed that he or she was responsible for distributing the parental informed consent forms to his or her players and collecting the signed forms upon return.

Data collection took five weeks to complete and was conducted near the end of the baseball or softball season. The questionnaire administration took approximately 20 minutes and was scheduled for the beginning of a practice. Arrangements with each coach were made in advance for a convenient day to come into the practice and

administer the questionnaires. Coaches were called at least a day before the scheduled time to confirm the time and place. Participation was completely voluntary; however, only those subjects who returned signed parental informed consents (Appendix I) and signed subject informed consents (Appendix J) were allowed to complete the questionnaires. Athletes who were 18 years of age were not required to have parental informed consents.

A majority of the questionnaire administration was supervised by the principal investigator but other investigators were required due to scheduling conflicts. These additional investigators were individually trained by the principal investigator prior to any questionnaire administration they supervised. Investigators gave specific instructions regarding each questionnaire and also answered any questions athletes had while they completed the questionnaires.

The questionnaires were arranged in packets, one packet for baseball and another for softball. The two packets were nearly identical, the only changes involved replacing baseball for softball and he for she throughout the packet of softball questionnaires. The cover page was color-coded, a lilac color for softball and a salmon color for baseball. The packet of questionnaires was ordered in one of three arrangements. One group of questionnaires was ordered as follows: (a) TEOSQ, (b) TARGET, and (c) PCMSQ. The second group was ordered: (a) TARGET, (b) TEOSQ, and (c) PCMSQ and the third order was: (a) PCMSQ, (b) TEOSQ, and (c) TARGET. Since these three questionnaires were so similar in content, it was thought that some athletes might not completely read the later pages as well as

the first pages; therefore, by randomizing the questionnaires, no one questionnaire was directly affected.

In the directions the investigators gave, athletes were asked to read the directions at the top of the page of each questionnaire. They were also reminded that their answers were confidential and would only be seen by the investigator. Finally, the athletes were asked to double check that each statement was answered. The investigator also checked each subject's packet for incomplete or unanswered items once the packet was handed in.

Statistical Analysis

Structural equation modeling using LISREL8: Structural Equations Modeling with the SIMPLEX Command Language (Jöreskog & Sörbom, 1993) program was the statistical analysis employed in the present study. LISREL8 is a computer program that tests models for linear structural relationships among quantitative variables. The exogenous or independent variables in this study were task, authority, reward, grouping, evaluation, and time structures. The endogenous or dependent variables included mastery climate, performance climate, task orientation, and ego orientation.

Prior to conducting the statistical analyses, all questionnaires were thoroughly checked. Thirteen questionnaires were deleted either because instructions were not followed or items were answered in a careless manner. However, if only one item from a subscale was left unanswered, then a mean substitute based on the individual's answers was used.

Due to the large number of parameters (58) involved in the study, separate rather than concurrent measurement and structural models were analyzed. Three measurement models were conducted, one for each questionnaire (TARGET, PMCSQ, TEOSQ). Results from the measurement models determined how well the observed variables measure the latent variables they were constructed to measure. Additionally, two structural models were analyzed. The primary model examined a directional relationship leading from the TARGET structures to team motivational climate to achievement goal orientation. The secondary model specified a direct path from TARGET structures to achievement goal orientation, in addition to specifying the same paths as in the primary model. Results from these structural models indicated that the relationships that existed among the set of latent variables.

CHAPTER 4
RESULTS

The results chapter is comprised of two sections. Section one includes the preliminary analyses consisting of the three LISREL8 measurement models: (a) TARGET measurement model, (b) PMCSQ measurement model, and (c) TEOSQ measurement model. These analyses demonstrate support for the validity and reliability of the questionnaires employed. Section two involves the main analysis with the results of the structural equation models being reported. These results provide evidence for the direction and strength of the relationship among each variable of interest.

Measurement Models

Three measurement models were conducted, one for the exogenous or independent variables (TARGET structures), and two separate ones for the endogenous or dependent variables (PMCSQ & TEOSQ questionnaires). Validity and reliability were assessed from the results of the measurement models for each instrument.

A brief overview of the terminology used in LISREL8 follows. The exogenous and endogenous latent constructs are represented by the Greek letters ksi (ξ) and eta (η), respectively. The letters lambda-x (Λ_X) and lambda-y (Λ_Y) designate the matrices of regression coefficients; these coefficients indicate the degree to which the observed variables or questionnaire items are valid indicators of the latent construct. The letters delta (δ) and epsilon

(ε) reflect the measurement errors in the observed variables of the exogenous and endogenous latent constructs, respectively.

Generally, product-moment correlations based on raw scores of the observed variables are used as estimates in a LISREL8 measurement model. According to Jöreskog and Sörbom (1993), when the observed variables are all ordinal as in this study, then this type of correlation matrix is not recommended. These authors suggest instead that estimates of polychoric correlations be used and the polychoric matrix be analyzed by the weighted least square (WLS) method. As a result of employing this correlation matrix, the lambda values or factor loadings are strengthened. A PreLis2 (Jöreskog & Sörbom, 1993) program was employed to compute the polychoric correlation matrix as well as the asymptotic covariance matrix; both matrices were required to conduct the measurement models.

In order to determine the goodness of fit of the models, researchers (Bollen, 1989; Jöreskog & Sörbom, 1993) suggest that more than one goodness of fit measure be used. The chi-square (χ^2) statistic is a measure of overall fit of the model to the data. A small χ^2 indicates that the model holds exactly in the population; however, this assumption may not be realistic; and, as a consequence, models that hold approximately in the population will be rejected in large samples (Jöreskog & Sörbom, 1993). Thus, several other goodness of fit measures have been proposed in an attempt to reduce or eliminate a dependence on sample size. The Adjusted Goodness of Fit Index (AGFI; Jöreskog & Sörbom, 1993) compares the model to no model at all and determines how much

better the hypothesized model fits. This index is not directly dependent on sample size, but its sampling distribution depends on the sample size. Two other indices, the Non-Normed Fit Index (NNFI; Tucker & Lewis, 1993) and the Incremental Fit Index (IFI; Bollen, 1989) also referred to as Δ_2, measure how much better the model fits in comparison to a baseline model, usually the model in which all the observed variables are uncorrelated. The AGFI and IFI measures should have values of between 0 and 1 with values closer to 1 indicating a better fit. The IFI is standardized and is expressed as a proportion of total fit. Since the NNFI is a nonnormed index, this measure may range above 1.

In the first measurement model, the exogenous latent constructs (ξ) were the six TARGET structures: task, authority, reward, grouping, evaluation, and time. Each ksi had four observed variables (lambda-x) that measured the latent construct. The goodness of fit statistics indicated a good fit of the model. The chi-square statistic of exact fit suggested rejecting the model, χ^2 (237, N=357) = 471.525, p<.01. However, the other measures revealed the following: AGFI =.946; NNFI = .958; and IFI = .965.

Since the purpose of the measurement model was to assess the validity and reliability of the TARGET questionnaire, examination of the parameter estimates was also necessary. LISREL8 estimates of the standardized factor loadings, standard errors, t-values, and squared multiple correlations for each lambda-x variable are shown in Table 1. The factor loadings of three of the lambda-x variables were found to be low. Authority item #2, Evaluation item #4, and Task item #2 had factor loadings of .325, .313, and .424,

TABLE 1

TARGET Structure Parameter Estimates

Construct and Variables	Standardized Loading	Standard Error	t-value	Squared Multiple Correlation
TASK				
Ta1	.833	.023	36.868	.694
Ta2*	.424	.037	11.449	.180
Ta3	.909	.037	55.311	.827
Ta4	.870	.018	49.697	.756
AUTHORITY				
A1	.903	.203	39.199	.816
A2*	.325	.038	8.443	.105
A3	.667	.029	22.891	.446
A4	.792	.023	33.929	.628
REWARD				
R1	.818	.023	35.483	.669
R2	.817	.022	37.949	.667
R3	.811	.023	35.063	.657
R4	.813	.025	33.022	.660
GROUPING				
G1	.841	.023	36.435	.708
G2	.879	.018	49.260	.773
G3	.887	.021	41.912	.786
G4	.875	.019	45.526	.766
EVALUATION				
E1	.792	.023	35.153	.628
E2	.763	.024	32.134	.581
E3	.622	.030	38.000	.387
E4*	.313	.039	8.098	.098
TIME				
Ti1	.788	.021	38.000	.620
Ti2	.849	.022	38.046	.721
Ti3	.587	.029	20.093	.345
Ti4	.891	.020	45.570	.794

*Note: A2, E4, and TA2 were deleted from subsequent analyses. All t-values were significant, $t > 1.96$, $p < .05$.

respectively. Authority item #2 explained only 10.5% of the variance in the Authority structure, while Evaluation item #4 explained even less, only 9.8% of the variance in Evaluation latent construct. Task item #2 explained 18% of the variance in the Task construct. Furthermore, all three items had low convergent validity and were thus deleted from subsequent analyses.

The TARGET measurement model was re-analyzed after deleting these three observed variables. The ensuing LISREL8 parameter estimates for each of the lambda-x variables are displayed in Table 2. The phi (Φ) correlation, the correlation matrix of the six TARGET structures was examined. This matrix indicated that the six structures were moderately to highly correlated with one another. Correlations among the six TARGET structures are illustrated in Table 3. Multicollinearity was found between reward structure and evaluation structure (r=.989); and as a result, these two structures were collapsed, forming a composite variable, reward/evaluation structure.

Once the three items were deleted and the new composite variable was formed, the results of the model demonstrated that the TARGET measure was a valid and reliable instrument in this study. The LISREL8 estimates of the standardized factor loadings, standard errors, t-values, and squared multiple correlations for the revised TARGET measurement model are presented in Table 4. The goodness of fit measures indicated a good fit to the model, $\chi 2(179, \underline{N}=357) = 583.532$, $p<.01$.; AGFI = .942; NNFI = .923; and IFI = .935. Cronbach's (1951) alpha reliabilities were calculated using the polychoric

TABLE 2

TARGET Structure Parameter Estimates
After Deletion of Three Items

Construct and Variables	Standardized Loading	Standard Error	t-value	Squared Multiple Correlation
TASK				
Ta1	.683	.048	14.119	.466
Ta3	.905	.043	21.197	.819
Ta4	.853	.044	19.346	.727
AUTHORITY				
A1	.871	.045	19.229	.759
A3	.676	.050	13.643	.457
A4	.726	.049	14.987	.527
REWARD				
R1	.667	.049	13.594	.446
R2	.741	.047	15.629	.549
R3	.729	.048	15.274	.531
R4	.713	.048	14.825	.508
GROUPING				
G1	.700	.048	14.575	.490
G2	.790	.046	17.288	.625
G3	.808	.045	17.842	.652
G4	.823	.045	18.343	.677
EVALUATION				
E1	.743	.048	15.611	.553
E2	.718	.048	14.948	.516
E3	.477	.052	9.268	.228
TIME				
Ti1	.714	.048	14.933	.509
Ti2	.711	.048	14.853	.505
Ti3	.489	.052	9.382	.239
Ti4	.800	.046	17.498	.641

Note: All t-values were significant, $t > 1.96$, $p < .05$.

TABLE 3

Correlation Matrix for Six
TARGET Structures

Construct	Task	Authority	Reward	Grouping	Evaluation	Time
Task	1.000					
Authority	.635	1.000				
Reward	.725	.799	1.000			
Grouping	.746	.726	.802	1.000		
Evaluation	.852	.837	.989	.883	1.000	
Time	.823	.789	.875	.885	.930	1.000

N=357. Note: Correlations were based on polychoric correlation matrix.

TABLE 4

TARGET Structure Parameter Estimates
After Formation of Composite Variable

Construct and Variables	Standardized Loading	Standard Error	t-value	Squared Multiple Correlation
TASK				
Ta1	.805	.019	46.210	.647
Ta3	.929	.014	64.741	.863
Ta4	.848	.014	62.836	.719
AUTHORITY				
A1	.826	.020	41.419	.682
A3	.703	.027	26.085	.495
A4	.757	.019	40.786	.573
REWARD/ EVALUATION				
R1	.749	.021	35.104	.561
R2	.812	.016	51.306	.659
R3	.815	.018	44.562	.665
R4	.809	.022	36.635	.655
E1	.807	.019	43.427	.651
E2	.747	.019	40.192	.558
E3	.649	.027	23.876	.421
GROUPING				
G1	.868	.018	49.196	.754
G2	.899	.012	72.265	.808
G3	.872	.021	42.387	.760
G4	.871	.016	53.364	.759
TIME				
Ti1	.744	.016	47.908	.553
Ti2	.789	.020	39.276	.623
Ti3	.589	.026	22.343	.346
Ti4	.882	.016	55.250	.777

Note: All t-values were significant, $t > 1.96$, $p < .05$.

correlations. The formula employed was: $\alpha = N\ p/[1+p(N-1)]$, where N = number of observed items and p = mean of the inter-item correlations. Reliabilities for the TARGET structures were as follows: task structure (.85); authority structure (.81); reward/evaluation structure (.86); grouping structure (.86); and time structure (.78).

The second measurement model involved the PMCSQ instrument, the eta (η) represented mastery climate and performance climate. Nine observed variables measured mastery climate and twelve items measured performance climate. These observed variables were the lambda-y variables. Fit indices revealed an adequate fit, with the exception of the chi-square test of exact fit, $\chi^2(188, \underline{N}=357) = 896.142$, $p<.01$. The other fit indices were: AGFI = .887, NNFI = .864, and IFI = .878. All of the factor loadings were found to be reliable indicators of the construct they were designed to measure. LISREL8 estimates of the standardized factor loadings, standard errors, t-values, and squared multiple correlations for the lambda-y variables are shown in Table 5. Cronbach (1951) alpha reliabilities were mastery climate (.86) and performance climate (.86). The correlation between mastery climate and performance climate was -.82, revealing a strong inverse relationship. Results indicated that the PMCSQ instrument was a valid and reliable measure for this sample.

The third measurement model assessed the validity and reliability of the TEOSQ questionnaire. Task orientation and ego orientation were labeled as eta1 and eta2; they were measured by

TABLE 5

PMCSQ Parameter Estimates

Construct and Variables	Standardized Loading	Standard Error	t-value	Squared Multiple Correlations
Mastery Climate				
M1	.786	.018	44.696	.618
M2	.884	.018	50.559	.782
M3	.626	.024	26.641	.392
M4	.845	.018	45.986	.713
M5	.858	.017	49.357	.737
M6	.790	.021	36.915	.624
M7	.832	.019	44.388	.692
M8	.640	.024	25.827	.372
M9	.520	.024	21.330	.270
Performance Climate				
P1	.761	.022	35.408	.578
P2	.630	.024	26.341	.397
P3	.461	.026	17.789	.213
P4	.787	.015	53.307	.619
P5	.807	.016	51.124	.652
P6	.816	.016	51.748	.667
P7	.761	.017	44.777	.579
P8	.743	.020	37.327	.551
P9	.655	.025	26.298	.429
P10	.858	.014	59.504	.737
P11	.677	.020	33.285	.459
P12	.804	.019	43.512	.647

Note: All t-values are significant, $t > 1.96$, $p < .05$.

seven observed variables and six observed variables, respectively. The goodness of fit measures indicated a good fit for the model, $\chi 2(64, \underline{N}=357) = 189.595$, $p<.01$; AGFI = .946; NNFI = .941; and IFI = .952. The factor loadings suggested that all of the observed variables were reliable indicators of the corresponding latent variable. LISREL8 estimates of the standardized factor loadings, standard errors, and t-values for each lambda-y variable are found in Table 6. Cronbach (1951) alpha reliabilities were as follows: task orientation (.86) and ego orientation (.89). The correlation between the two latent variables was .20, revealing a weak positive relationship.

Structural Equation Models

Initially, the structural equation model was to be conducted using a polychoric matrix and the associated asymptotic covariance matrix with multiple indicators; however, PreLis2 failed to produce these matrices due to the large number of parameters. Consequently, a product-moment correlation matrix with standard deviations involving multiple indicators was inputted from an external file. Due to the large input matrix (56 x 56 matrix), LISREL8 analysis also failed to provide a converged solution. By inputting a correlation matrix and standard deviations from an external file and using a single indicator for each construct, LISREL8 produced a covariance matrix that was the matrix analyzed in the structural model. For this reason, a single-indicator model using maximum likelihood estimates was employed. Descriptive

TABLE 6

TEOSQ Parameter Estimates

Construct and Variables	Standardized Loading	Standard Error	t-value	Squared Multiple Correlations
Task Orientation				
T1	.632	.041	15.375	.400
T2	.597	.041	14.714	.356
T3	.827	.032	25.474	.683
T4	.756	.030	25.002	.572
T5	.905	.022	41.544	.818
T6	.933	.023	39.876	.870
T7	.785	.034	22.824	.616
Ego Orientation				
E1	.727	.031	23.340	.529
E2	.829	.024	34.674	.688
E3	.806	.035	23.078	.649
E4	.726	.029	25.262	.527
E5	.803	.025	32.618	.645
E6	.869	.021	41.925	.755

Note: All t-values were significant, $t > 1.96$, $p < .05$.

TABLE 7

Descriptive Statistics for the Variables
in the Structural Equation Model

Construct	Task Orient.	Ego Orient.	Mastery Climate	Perform. Climate	Task Struct.	Auth. Struct.	R/E Struct.	Group. Struct.	Time Struct.
Task Orient.	1.000								
Ego Orient.	.065	1.000							
Mastery Climate	.331	-.134	1.000						
Perform. Climate	-.202	.344	-.450	1.000					
Task Structure	.263	-.146	.679	-.311	1.000				
Authority Structure	.321	-.175	.559	-.448	.478	1.000			
Rew./Eval. Structure	.333	-.102	.749	-.484	.638	.633	1.000		
Grouping Structure	.282	-.147	.688	-.498	.599	.531	.702	1.000	
Time Structure	.252	-.102	.699	-.452	.631	.561	.703	.672	1.000
Mean	4.221	2.816	3.677	2.768	3.503	3.137	3.565	3.587	3.334
SD	.520	.971	.655	.684	.888	.914	.695	.808	.759
Kurtosis	1.221	-.587	.179	-.397	.304	-.404	.877	.005	.003
Skewness	-.797	.087	-.546	.203	-.753	-.355	-.743	-.520	-.342

N = 357. Note: Covariance matrix was analyzed using maximum likelihood estimates.

statistics for the latent constructs in the structural model are illustrated in Table 7. Overall, the values of kurtosis and skewness demonstrated a normal distribution.

In the single indicator model (Anderson & Gerbing, 1988), all the latent constructs were operationalized through their summed scaled indexes, resulting in one indicator per latent construct. Although the factor loadings from indicator to latent construct were estimated by LISREL8, the associated error terms were fixed to 1 minus alpha times the variance of the latent construct. The error variance for each latent variable was calculated based on the formula: $(1 - \alpha) \times SD^2$ Jöreskog & Sörbom, 1993). By default, the error variance would be set to zero, implying that there was no measurement error, when in fact the reliability coefficient indicated that measurement error did exist. Subsequently, by fixing the error variance, the factor loadings were considered to be more accurate.

In the original structural equation model, the error variance between mastery climate and performance climate was set free since results from the PMCSQ measurement model suggested that the two latent variables were moderately correlated. LISREL8 did not have the capability to analyze the correlation between the eta; therefore, the correlation between the error terms, zeta (ζ), for the two latent variables was estimated.

The goodness of fit measures indicated an extremely good fit, $\chi 2(11, 357) = 27.52$ $p<.004$; AGFI = .93; NNFI = .97; and IFI = .99. However, these values were inflated due to the use of a single-indicator model. Fewer chi-squares were estimated in the ksi

(TARGET structures) which allowed LISREL8 to produce a more accurate estimation of the relationship among the ksi, thereby revealing better index values than would a multiple-indicator model.

Although the goodness of fit measures determine how well the model fits the data, relevant analyses for this study were found in the factor loadings and squared multiple correlations of the parameter estimates. Investigation of the model's parameter estimates began with the ksi (TARGET structures) estimates. The factor loadings for the path between each single indicator and the corresponding latent variable revealed a strong relationship for each path. All five of the single indicators explained at least 74% of the variance of the corresponding latent construct, thus demonstrating that each summed score single-indicator was a reliable measure of the corresponding latent construct. The factor loadings, standard errors, t-values, and squared multiple correlations for the lambda-x variables are displayed in Table 8.

In order to investigate the first hypothesis, that each TARGET structure would have a significant positive relationship with mastery climate, the factor loadings of the gamma matrix were examined. Partial support for this hypothesis was found. All five of the TARGET structures had a positive relationship with mastery climate but only two of the paths were significant at the .05 significance level. These were: the path linking task structure and mastery climate (.22) and the path linking reward/evaluation structure and mastery climate (.48). Those athletes who perceived that their practice drills were varied and physically challenging and

TABLE 8

Parameter Estimates for Path From
Single-Indicator to TARGET Structure

Construct and Single Indicator	Standardized Loading	Standard Error	t-value	Squared Multiple Correlation
Task Structure				
Task	.80	.04	21.64	.81
Authority Structure				
Auth.	.81	.04	20.84	.78
Reward/ Evaluation Structure				
Rew./Eval.	.63	.03	22.21	.83
Grouping Structure				
Group.	.74	.03	22.18	.79
Time Structure				
Time	.65	.03	19.79	.74

Note: All t-values are significant, $t > 1.96$, $p < .05$.

that their coach employed task-involved rewards and evaluations reported a mastery team motivational climate. The factor loadings,standard errors, and t-values for the paths between each of the TARGET structures and mastery climate are found in Table 9.

A second hypothesis that stated that each TARGET structure would have a significant inverse relationship with performance climate was partially supported. Four of the five factor loadings revealed an inverse relationship, with the exception of task structure (.28).

Three of the relationships were significant; the path linking task structure to performance climate (.28), the path linking authority structure to performance climate (-.25), and the path linking grouping structure to performance climate (-.39). Specifically, athletes who viewed practice drills to be full of variety and physically challenging indicated a performance team climate. Athletes who felt that they did not have a share in the decision-making process or did not have opportunities for choice within the team also reported a performance climate. In addition, those athletes who perceived that the coach only worked with certain groups of players reported a performance team motivational climate. The factor loadings, standard errors, and t-values for the paths between each TARGET structure and performance climate can be found in Table 10.

Due to the strong correlations found among the TARGET structures, several diagnostic models were conducted to determine whether the five TARGET structures' factor loadings were stable and reliable (A. C. Acock, personal communication, June 28, 1994). Each

TABLE 9

Parameter Estimates for Path From
TARGET Structures to Mastery Climate

TARGET Structures	Standardized Loading	Standard Error	t-value
Task Structure	.22	.09	2.52*
Authority Structure	-.03	.08	-.43
Reward/ Evaluation Structure	.48	.18	2.73*
Grouping Structure	.09	.11	.86
Time Structure	.22	.18	1.22

Note: *t-values are significant, t >1.96, p<.05.

TABLE 10

Parameter Estimates for Path From
TARGET Structures to Performance Climate

TARGET Structures	Standardized Loading	Standard Error	t-value
Task Structure	.28	.13	2.17*
Authority Structure	-.25	.12	-2.17*
Reward/ Evaluation Structure	-.09	.23	-0.38
Grouping Structure	-.39	.16	-2.45*
Time Structure	-.21	.26	-0.79

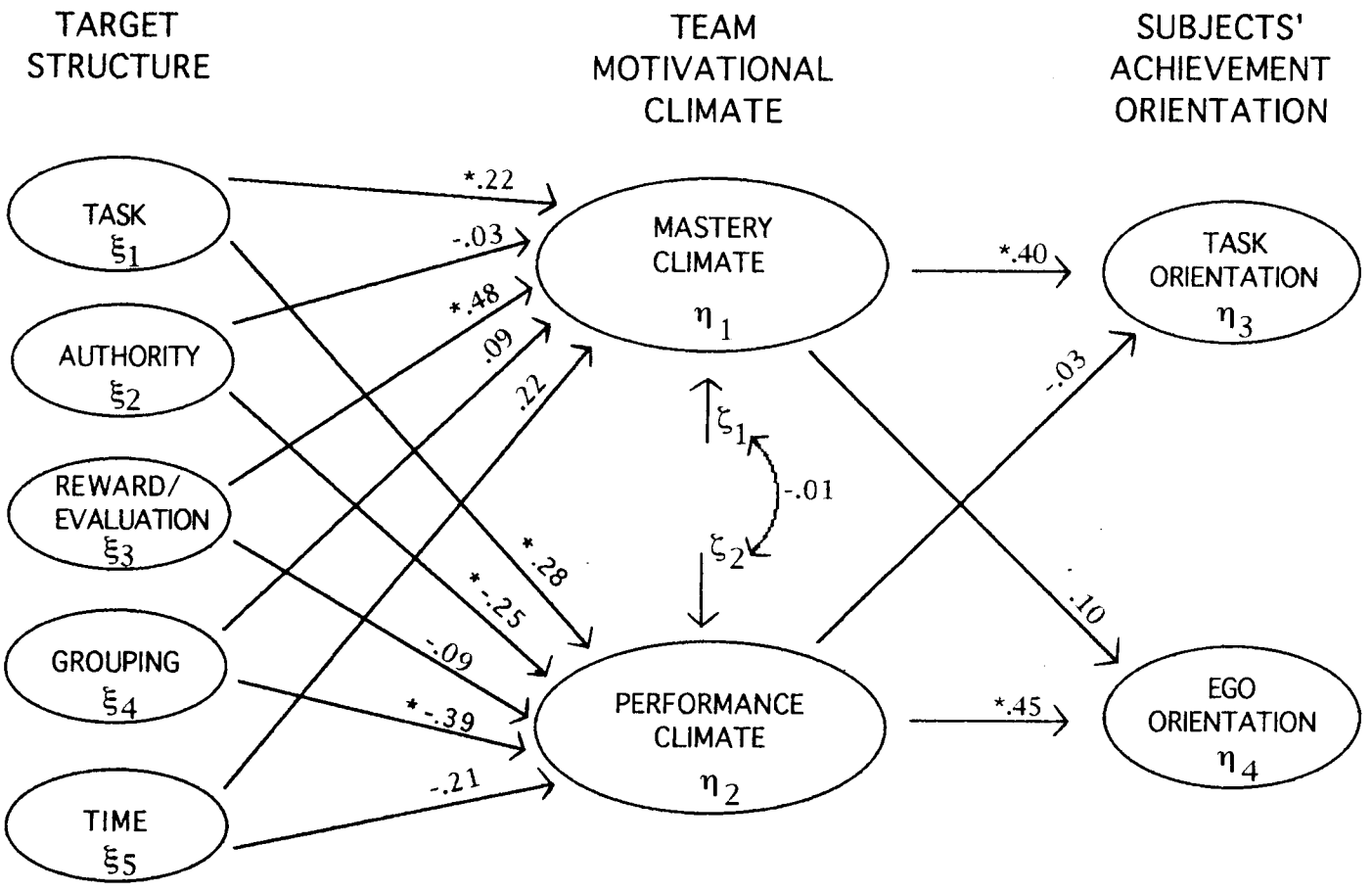
Note: *t-value is significant, $t > 1.96$, $p < .05$.

TARGET structure was systematically deleted, and the model was then re-analyzed. From these diagnostic checks, the TARGET structures' factor loadings were deemed stable and reliable. Discussion and tables of these diagnostic models appear in Appendix K.

The third and fourth hypotheses involved the analysis of the beta matrix, the matrix which analyzed the relationship among the four eta. The third hypothesis, which stated that mastery climate would have a significant positive relationship with task orientation, was supported. The relationship between the two constructs demonstrated a factor loading of .40 (SE = .09; t-value = 4.55). This significant factor loading indicated that mastery climate was an important indicator of task orientation. In addition, the fourth hypothesis was also supported. This hypothesis predicted a positive relationship between performance climate and ego orientation, and in fact a significant positive relationship was found between performance climate and ego orientation (.45; SE = 08; t-value = 5.59). Again, this significant factor loading demonstrated that performance climate was significant measure of ego orientation. The structural equation model with all the parameter factor loadings are illustrated in Figure 1.

Results from the squared multiple correlations indicated that 86% of the variance within mastery climate and 43% of the variance within performance climate were explained by the TARGET structures. These high percentages suggested that the TARGET measure was a strong indicator of both mastery and performance climate. Additionally, the model explained 17% of the variance in

FIGURE 1 ACHIEVEMENT GOAL PERSPECTIVE MODEL



*Factor loading is significant at .05 level

task orientation and 16% in ego orientation. These squared multiple correlations explained a substantial amount of variance within the model, further supporting the validity and reliability of the measures employed. Moreover, although mastery climate and performance climate were moderately correlated (r=-.54), there was virtually no residual relationship (-.01) between mastery climate and performance climate that was not explained by the TARGET structures.

From the modification indices output, results suggested that there was a correlation between task orientation and ego orientation, although theoretically these two constructs are orthogonal. Reduction of the chi-square (7.46) was indicated if the path between the error terms (zeta) of the two latent variables was allowed to correlate. This reduction of 7.46 was a significant change in chi-square; consequently, the model was respecified to set the error covariance between task orientation and ego orientation free. After model respecification, a moderate residual relationship (.15) that was not explained by mastery climate or performance climate was found between task orientation and ego orientation. However, although the model respecification was statistically significant, which produced a better fitting model, the goodness of fit indices did not change. Therefore, for theoretical reasons, in the final model the error covariance between task and ego orientation was not set free.

Two additional research questions were formulated since there was insufficient theoretical and empirical research upon which to base hypotheses. The first question was: Which TARGET

structures would contribute most strongly to a mastery climate? The factor loadings from the structural equation model indicated that reward/evaluation structure (.48; SE = .18; t-value = 2.73) and task structure (.22; SE = .09; t-value = 2.73) contributed most to a mastery climate in this study.

The second question deviated from the main hypothesis of the study. This question addressed a possible direct relationship between TARGET structures and athletes' achievement goal orientation. Critical to the main hypothesis that the TARGET structures would affect the achievement goal orientation only through the intervening motivational climate variables, an alternative model was tested. The alternative model specified a saturated model with paths from TARGET structures leading directly to task and ego orientation and indirectly through mastery and performance climate to task and ego orientation. This model was significantly different ($p<.05$) from the constrained model ($\chi 2 = 8.87$ df = 1; $\Delta\chi 2 = 18.65$; $\Delta df = 10$). Inspection of the goodness of fit measures indicated that AGFI = .79; NNFI = .85; and IFI = 1.00. Both the AGFI and the NNFI indices were substantially lower than those indices found in the constrained model (AGFI = .93; NNFI = .97; and IFI = .99). Furthermore, none of the direct paths except for the path linking task structure and ego orientation (-.36) was significant in the alternative model, and the path leading from mastery climate to task orientation was not significant in this model. Thus, the results suggested that the more parsimonious model with no direct links between the TARGET structures and achievement goal orientation was a more acceptable fit of the data.

CHAPTER 5
DISCUSSION

Current research involving achievement goal perspectives has examined either individual or situational factors and the impact achievement goal orientations have on these factors. Most of the research concerning situational factors, such as the motivational climate, has been conducted primarily in the academic domain. Furthermore, examination of the environmental (TARGET) structures within the achievement situation has only recently been undertaken in sport motivational research.

To date, only Treasure (1993) has investigated the effect of these environmental structures on sport participants' perceived motivational climate. However, Treasure's study was designed to manipulate the structures in order to determine whether participants would perceive their motivational climate differently based on the selected strategies employed by the physical education teacher. Currently no studies have attempted to measure the TARGET structures specifically within an existing sport setting or to investigate the relationship between athletes' perceptions of these structures and their perceived team motivational climate. Thus, the purpose of the present study was to examine the relationship among TARGET structures, team motivational climate, and achievement goal orientation in a sport setting.

The discussion chapter follows the outline of the results section. The chapter begins with an assessment of the three measurement models. It is followed by a discussion of the

structural equation models in terms of the four research hypotheses, two research questions, and supportive theoretical and empirical research. The chapter concludes with an examination of the practical implications of this study and future directions for theoretical and empirical research.

Measurement Models

The primary analysis employed to evaluate the measurement and structural equation models was Jöreskog and Sörbom's (1993) LISREL8: Structural Equation Modeling with the Simplis Command Language program. Separate measurement and structural equation models were conducted due to the large number of parameters involved. Results of the three measurement models involving the TARGET, PMCSQ, and TEOSQ questionnaires provided further support for the scales' validity and reliability.

The first measurement model involved the TARGET questionnaire developed specifically for this study. Initial parameter estimates indicated that item #2 of the authority structure, evaluation structure item #4, and task structure item #2 were unreliable; hence, they were deleted from subsequent analyses. Multicollinearity was also discovered between reward structure and evaluation structure. This finding was not totally unexpected. Epstein (1988) reported that these two structures were closely connected and, in fact, that all of the structures were interdependent and overlapping. Additionally, Ames (1992b), in her most recent review article, discussed only three salient structures

in achievement situations. She elected to combine evaluation and reward structures, labeling this structure as evaluation and recognition, and deleting grouping structure and time structure from her discussion. With no clear explanation for these changes, one would assume the changes were related to the close association between these structures as was reported by Epstein. Based on Epstein's and Ames' work, a composite structure, reward/evaluation structure, was formulated in the present study.

High correlations were found among many of the TARGET structures; however, one of the advantages of using the LISREL8 program was that it was programmed to deal with this type of problem. Epstein (1988) explained that the six TARGET structures were interdependent, and many were closely tied to each other. Consequently, the reported strong correlations were expected. Several diagnostic checks were conducted to provide additional support for the stability of the reported TARGET structures' factor loadings. Clearly, the factor loadings were found to be consistent throughout all of the diagnostic checks. Deletion of one structure did not significantly change the factor loadings of the other four structures, indicating that these loadings were reliable estimates.

The PMCSQ measurement model revealed the PMCSQ questionnaire to be a valid and reliable instrument for this study. Parameter estimates showed support for a two factor structure: mastery climate and performance climate. To date, few published articles have used this instrument; therefore, it was essential to determine the scale's reliability and validity for the present sample. The model's fit was adequate; however, more testing and further

refinement would seem necessary to enhance the instrument's usefulness.

The present study found a moderate inverse relationship between mastery climate and performance climate, supporting the findings of Walling et al. (1993). These authors argued that athletes perceive the climate to be either mastery- or performance-oriented, thus implying that the two subscales are bipolar.

The TEOSQ measurement model demonstrated reliabilities of .86 for task orientation and .89 for ego orientation. These reliabilities are similar to previous research findings using the TEOSQ questionnaire, a strong indication that the instrument was a reliable measure for this sample. Each indicator loaded significantly on it's respective subscale, and the squared multiple correlations also demonstrated a strong association between each path. These results further support the validity of the TEOSQ questionnaire. Contrary to previous work by Duda and her colleagues (Duda, 1988, 1992, 1993; Seifriz et al., 1992), the correlation between task orientation and ego orientation revealed a low positive relationship ($r = .20$). Nicholls (1984, 1989) theorized that these constructs were orthogonal; however, results from the present study indicated that a positive relationship did exist. Dweck and colleagues (1986; Dweck & Leggett, 1988) argued that the two constructs were bipolar but this point would suggest an inverse relationship that was not found.

One possible explanation may be due to the complex multivariate analysis employed. The LISREL8 program produced the best fitting model possible, computed multivariately, and therefore

provided parameter estimates that determined the direction and strength of association for each path link. Previous research have employed analyses that determine only a bivariate relationship. Another reason might lie within the specific instrument. Subjects generally answered the task subscale items in a positive manner regardless of how they responded to the ego subscale items. Refinement and further psychometric development of the TEOSQ might alleviate this issue.

Structural Equation Models

Research findings from the present study are discussed in terms of the four research hypotheses. The first hypothesis proposed that each TARGET structure would have a significant positive relationship with mastery climate. The results revealed partial support, that is, all of the TARGET structures had a positive relationship with mastery climate. However, only task structure and reward/evaluation structure were significantly related to mastery climate. An initial research question addressed the relative importance of the TARGET structures toward a mastery climate. In the present study, reward/evaluation structure contributed most strongly to a mastery climate, followed by task structure. The relationship among mastery climate and authority, grouping, and time structure did not achieve significance. Reward/evaluation structure and task structure were two of the three structures Ames (1992b) identified as being the most salient. Further research is warranted to determine if reward/evaluation

structure and task structure are indeed the most salient structures; and consequently, should be the central focus.

No previous empirical studies have investigated the relationships among the TARGET structures and mastery climate. Further item development and empirical testing would be warranted to strengthen the instrument. The TARGET questionnaire was designed so that high scores on each item indicated that mastery-oriented goals were perceived to be promoted. For this reason, a positive relationship was expected between mastery climate and each of the TARGET structures. However, the questionnaire was specifically developed for the present study; and consequently, the items might not have thoroughly measured each of the corresponding structure.

Additionally, the lack of significance found among several of the TARGET structures and mastery climate suggested that the TARGET structures may not be the most salient structures within sport. The TARGET structures were reported as salient structures in the classroom; and thus, they were assumed to be appropriate for the sport setting. However, there may be more salient structures specific to sport that still need to be identified.

Lastly, another reason for the lack of significance found among three of the TARGET structures may be due to the high correlations reported among the TARGET structures. Several of the structures may have measured the same latent construct.

The second hypothesis, that each TARGET structure would have a significant inverse relationship with performance climate, was also partially supported. Since the two climates were reported to

be bipolar (Ames, 1992b; Ames & Archer, 1989; Walling et al., 1993) and mastery climate was expected to have a positive relationship with each of the TARGET structures, the expectation was that performance climate would have an inverse relationship with each of the TARGET structures. Additionally, Walling et al. reported a moderate inverse relationship between mastery and performance climate that was supported in the present study. One would deduct then, as a result, that performance climate would negatively relate to each of the TARGET structures. In the present study, four of the five structures were inversely associated with performance climate, with three of the paths being significant. Grouping structure contributed the most to the inverse relationship with performance climate, followed by task structure and authority structure. Athletes who believed that the coach gave differential instruction and attention to athletes based on the group they were assigned to perceived a more performance climate. Likewise, athletes who felt that the coach made all the decisions and did not ask for input from players also perceived a performance climate. The relationship between task structure and performance climate was found to be in a positive direction. This finding was not expected; however, it would appear possible that practice drills may be physically challenging and the climate still be perceived to be a performance climate.

Quite possibly, the questionnaire design may have been partially responsible for the lack of significance found in two of the paths between TARGET structures and mastery climate. The slant of the questionnaire was directed toward measuring a mastery climate.

A high score on each item implied that mastery-oriented goals and strategies were being employed; and that was predicted to create a mastery climate.. In contrast, a low score was assumed to measure a performance climate. It is possible that reward/evaluation and time structure were not salient indicators of performance climate. Additionally, the high correlations among some of the TARGET structures may have resulted in the lack of significance found among two of the structures and performance climate. In general, the TARGET questionnaire appeared to measure both mastery-oriented and performance-oriented goals reasonably well.

The third hypothesis, in which mastery climate was predicted to have a significant positive relationship with task orientation, was supported in the present study. Mastery climate and task orientation demonstrated a moderate significant positive relationship, which indicated that mastery climate contributed significantly to a task orientation. Nicholls (1984,1989) theoretically proposed that situational factors could influence one's achievement goal orientation. Additionally, Ames (1992a, 1992b) argued that the motivational climate would be a significant situational factor; thus, a relationship would be expected between these two constructs. The results from the present study provide additional support for Nicholls' and Ames' argument. Athletes who perceived themselves to be involved in a mastery climate tended to report having a task orientation.

Finally, a moderately strong positive relationship was reported between performance climate and ego orientation. These constructs were found to be positively associated, thereby

suggesting that performance climate strongly contributed to an ego orientation. A performance climate was described as a perceived environment where ego-involved goals were the norm. In contrast, an ego orientation referred to the individual's proneness or tendency to be ego-involved. These results clearly suggest that involvement in a performance climate is linked to an ego orientation.

The second research question dealt with a possible direct relationship between TARGET structures and athletes' achievement goal orientation. More specifically, the direct influence of coaches' behaviors on athletes' achievement goal orientation were examined. Research has demonstrated that there is a relationship among coaches' behaviors, athletes' self-perceptions, and motivation (Black & Weiss, 1992; Horn, 1985; Smith, Smoll, & Curtis, 1978, 1979). Smith et al. (1979) found that coaches who demonstrated more frequent use of technical instruction, positive reinforcement, and mistake-contingent encouragement had players who enjoyed the sport more and had higher self-esteem. Black and Weiss (1992) reported coaches' behaviors also influenced their athletes' perceptions of success, preferences for optimal challenging tasks, and effort. Additionally, Horn (1985) found a relationship between certain coaches' behaviors and athletes' perceived competence. Specifically, she reported that athletes who received contingent and appropriate feedback regarding successful and unsuccessful performances from their coach indicated higher perceived competence over the season.

In the present study, the model that specified that the achievement goal orientation would be affected by the TARGET

structures only through the intervening motivational climate was found to be more parsimonious. The alternative model specified a direct relationship leading from TARGET structures to task and ego orientation in addition to the indirect relationship specified in the original model. Only one path, the path linking task structure and ego orientation, was significant in the direct relationship model. From the findings of this study, team motivational climate appeared to be a critical component between coaches' behaviors and athletes' achievement goal orientation.

In sum, the structural equation model demonstrated a positive linear relationship linking TARGET structures to mastery climate to task orientation. Although the TARGET structures did not contribute as strongly as had been predicted, this linear relationship is still an exciting finding. The present study was only a first step, using an exploratory approach to investigate the role of the TARGET structures. However, the confirmation of this relationship empirically was a goal of the present study.

Practical Implications

Congruent with previous experimental studies in both academic and sport settings (Ames, 1992a; Ames & Archer, 1988; Duda et al., 1993; Seifriz et al., 1993), the findings from this study empirically supported a positive relationship between mastery climate and task orientation. A positive relationship was also found between performance climate and ego orientation. Both relationships indicated a directional influence, leading from team

motivational climate to achievement goal orientation. Realistically, the relationships are most likely bi-directional. Findings from the present study suggest that the team motivational climate influences the athlete's achievement goal orientation; however, the athlete's achievement goal orientation may also influence the perceived team motivational climate.

Additionally, the central focus of the present study provides evidence to support prior educational research (Ames, 1992a, 1992b; Epstein, 1988, 1989) that claimed a positive association existed between a perceived mastery climate and the use of task-involved goals within the TARGET structures. From a practical standpoint, this finding suggests there is a positive association between coaches' promotion and employment of task-involved goals in their practices and athletes' perception of a mastery-oriented team motivational climate. Previous research (Ames, 1992b) had already determined that individuals exhibit more adaptive motivational behaviors when they are involved in a mastery climate. Therefore, when task-involved goals are emphasized, athletes are more likely to perceive a mastery climate and ultimately take on more positive motivational strategies, such as a preference for more challenging tasks, the use of effective learning strategies, and persistence in the sport.

Perceptions of a performance climate were found to be inversely related to the use of task-involved goals within the TARGET structures. Athletes who perceived that their coach used ego-involved goals in practice tended to perceive a performance climate. The influence of a performance climate has not thoroughly

been examined by others, nor was it the intent of the present study. Research has determined that involvement in a mastery climate promotes more adaptive motivational behaviors compared to involvement in a performance climate.

Further research is warranted to investigate the relationship between mastery and performance climate. Are these two climates bipolar or are they only inversely related? Is it possible that athletes may perceive the motivational climate to be a mastery climate and also a performance climate within the same achievement situation? Current research (Fox, Goudas, Biddle, Duda, & Armstrong, 1994) suggests that a task orientation is the more adaptive orientation; however, if a strong ego orientation is accompanied by a strong task orientation, there does not appear to be any detrimental motivational affects. Perhaps it is possible that mastery and performance climate have a similar relationship.

The relative influence of the TARGET structures on the team motivational climate was also examined. Reward/evaluation structure and task structure were found to contribute most strongly to a mastery climate in the present study. As a result, these two structures may be the most salient structures in the sport domain. By emphasizing task-involved goals within the reward/evaluation structure and task structure, the perception of a mastery climate should be ensured. It is unclear how important other structures are in developing a mastery climate, but from this study, reward/evaluation structure and task structure were found to be significantly more important. If these two structures are indeed the

more salient structures, then coaches should concentrate on promoting task-involved goals within these structures.

Specifically, coaches should provide evaluations that are private and meaningful to the athlete. Rewards should be based on individual improvement, effort, and performance rather than based on social comparison. In addition, drills should be designed so they are physically challenging for all athletes and drills should be varied. Organized practices where drills are frequently changed and/or lead into more complex drills should be effective.

The TARGET structures were predicted to be inversely related to performance climate. Three of the structures were found to be significantly related to performance climate. Two of the relationships were negative as expected, while one path indicated a positive relationship. Grouping structure contributed most, while authority structure also demonstrated a significant inverse relationship. Unexpectedly, task structure was found to be positively related to performance climate. Results revealed that task structure had a significant positive relationship with both mastery climate and performance climate. As a result of these associations, the contributions task structure makes are not understood at this time.

The findings from the present study suggest that grouping structure and authority structure were salient indicators of performance climate. The coach may actually influence their athletes' perception of the motivational climate by encouraging flexible grouping arrangements and providing athletes the opportunity to be a part of the decision-making process. If groups

are routinely changed so that athletes work with a variety of teammates, then social comparisons between group members should also be restricted. Further, the perception of a performance climate may be reduced if athletes believe that their coach listens to them. Communication would appear to be a factor.

It is important to remember that the motivational climate is determined by each athlete based on his or her perceptions of the coach's and teammates' behaviors. The coach should not assume that his or her behaviors are being interpreted in the same way by all athletes. Rather the coach needs to communicate with his or her athletes to determine how his or her actions are being perceived. It is the athletes' perceptions that will ultimately influence their behaviors.

Investigation of the relative influence of the TARGET structures on the perceived team motivational climate was an approach that had not been previously explored in sport. Treasure's study (1993) involved an intervention program, in which he manipulated the motivational climate through emphasis of either task- or ego-involved goals by the teacher/coach.

Finally, after synthesizing previous research with the present study, the motivational climate appears to be a dominate factor. According to Ames (1992a), involvement in a mastery climate encourages athletes to use more adaptive motivational strategies; and thus a mastery climate is a more productive and positive motivational climate. From the present study, a mastery climate was also found to lead to a task orientation. Together, these findings support the central role of a mastery climate on athletes'

perceptions and behaviors. Therefore, a task involvement emphasis specifically within the reward/evaluation structure and the task structure should encourage and promote the creation of a mastery climate.

From a practical perspective, coaches have been identified as a central figure in athletes' sport experiences (Gould, 1988; Greendorfer, 1992; Martens, 1990). Although coaches have been so identified, relatively few empirical studies have been conducted concerning the influence of the coach within a sport setting. The present study examined the influence of the coach through the strategies and behaviors exhibited by the coach during team practices as perceived by the athlete.

The initial confirmation that the TARGET structures were salient structures within a sport setting was an important first step. While extensive research in the educational literature had identified these structures to be important in the academic domain, these same structures were only assumed to be important in sport. The rationale held that most achievement situations, regardless of domain, would be similar in nature; thus, sport achievement situations were expected to have coinciding structures. Once the TARGET structures were deemed to be relevant to this study, investigation of an existing relationship among TARGET structures, team motivational climate, and achievement goal orientation was possible.

Future Directions

In future research, there are a number of conceptual and practical issues that need to be addressed. A possible concern is the limited number of operational and reliable instruments to measure such constructs as the motivational climate, TARGET structures, achievement goal orientation, and motivational behavior assessments. Although the TEOSQ questionnaire has been used in several published studies to assess task and ego dispositional goal orientations in sport and has demonstrated sound reliabilities, the TEOSQ measurement model indicated that further refinement would strengthen the scale's usefulness. The PMCSQ questionnaire has only recently been developed, and further testing and item revision appear necessary. The results of this study suggest that further development of the scale is recommended since the perceived motivational climate was found to be an important dimension in sport achievement motivation. The instrument employed to measure coaches' strategies within the TARGET structures was developed specifically for the present study and certainly requires additional refinement and testing.

Although the TARGET structure questionnaire was an extension of the work of Ames (1992a) and Epstein (1988), future sport research must examine whether the TARGET variables accurately define the sport environment. Identification of salient sport environmental structures is critical if our knowledge base is to be advanced to a higher level. A concerted effort on the part of sport researchers and practitioners to identify and define the key

structures within the sport context would be helpful. Once key structures are defined, strategies that enhance task involvement could be developed and eventually implemented systematically.

Another avenue that would expand knowledge concerns the effects and benefits of long-term athletic involvement in a mastery climate. Examination of the athletes' experiences within a mastery climate across time would be a legitimate research question. If future research determines that long-term accomplishments are directly related to the time athletes spend in a mastery climate, then there would be reason to warrant additional training for all coaches. Although Smith, Smoll, and associates (1977, 1978) have developed the Coach Effectiveness Training Program, to date a systematic educational training program for coaches has not been adopted by the sport community in this country.

Extension of the structural model employed in the present study to include athletes' motivational behaviors and outcomes would appear to be a logical next step. Examination of a linear relationship involving environmental structures, perceived motivational climate, achievement goal orientation, and motivated outcomes would provide a more comprehensive picture of the influence coaches have on athletes' self-perceptions and behaviors.

Finally, a current research trend has incorporated intervention programs in which the motivational climate is manipulated by the emphasis of specific strategies. Longitudinal studies are necessary to determine if intervention programs really do modify athletes' motivational behaviors and whether these behaviors continue over time.

Conclusion

The purpose of the present study was to examine the relationship among TARGET structures, team motivational climate, and achievement goal orientation in a sport setting. The results indicated that there was a positive relationship linking two TARGET structures to a mastery climate to a task orientation. A key finding demonstrated that reward/evaluation structure and task structure significantly contributed to a mastery climate. These two structures may be the most salient structures within a sport setting. Through the promotion of task-involved goals within these structures, a mastery climate should result. Specifically, when task-involved goals were emphasized, athletes were more likely to perceive that a mastery climate existed. Direct relationships linking three TARGET structures to performance climate to ego orientation were also reported. Grouping structure and authority structure were found to have a significant inverse relationship with performance climate, while the relationship between task structure and performance climate was a significant positive one. Additionally, the results confirmed that there was a significant positive relationship between mastery climate and task orientation and between performance climate and ego orientation.

Practical implications that resulted from the present study were discussed. Coaches have historically been identified as central figures in sport and have been found to play an influential role in athletes' self-perceptions and behaviors. The present study indicated that the coach impacts athletes' perceptions by the

strategies and behaviors the coach chooses to encourage and promote during practices. The strategies employed and behaviors exhibited are observed by the athlete. From these observations, the athlete determines what motivational climate exists. The practitioner as well as the researcher must be aware of the importance of creating a mastery climate for all athletes in a sport setting.

Finally, several theoretical and empirical research directions were addressed. Specifically, suggestions for future research include: (a) further development and refinement of existing instruments to measure motivational climate, TARGET structures, achievement goal orientation, and motivational outcomes; (b) identification of salient environmental structures that exist in sport; (c) examination of long-term motivational accomplishments resulting from involvement in a mastery climate over time; (d) extension of the present study to include athletes' motivational behaviors and outcomes; and (e) incorporation of longitudinal studies involving intervention or manipulation approaches to determine if these programs are successful across time.

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APPENDICES

APPENDIX A

APPROVAL FROM OSU'S COMMITTEE FOR THE PROTECTION OF HUMAN SUBJECTS

OFFICE OF DEAN OF RESEARCH

OREGON STATE UNIVERSITY

March 4, 1994

Principal Investigator:

The following project has been approved for exemption under the guidelines of Oregon State University's Committee for the Protection of Human Subjects and the U.S. Department of Health and Human Services:

Principal Investigator: Sandra Suttie

Student's Name (if any): Sue Becker

Department: Exercise and Sport Science

Source of Funding:

Project Title: Relationship Among TARGET Structures, Team Motivational Climate, and Achievement Orientation

Comments:

A copy of this information will be provided to the Chair of the Committee for the Protection of Human Subjects. If questions arise, you may be contacted further.

Redacted for privacy

Mary E. Nunn
Sponsored Programs Officer

cc: CPHS Chair

APPENDIX B

COACH AND TEAM
DEMOGRAPHIC INFORMATION

COACH AND TEAM DEMOGRAPHIC INFORMATION

Date: _____

Team: _____ Sport: Baseball/Softball

Coach: _____ Level: Varsity/Junior Varsity

Gender of Coach: Male/Female Yrs. coached at school: _____

Win/Loss Record: _____
(as of today)

Number of players on roster: _____

Number of players at practice: _____

Number of players who turned in forms: _____

Number of players who completed questionnaire: _____

Number of players who did not want to take questionnaires: _____

Number of players whose parents did not want their child to take questionnaire: _____

Comments:

APPENDIX C

PERCEIVED MOTIVATIONAL CLIMATE IN SPORT QUESTIONNAIRE

WHAT MY BASEBALL TEAM IS LIKE

Please read each of the following statements carefully and respond to each in terms of how you see your baseball team.

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1.	On this team, players feel good when they do better than their teammates in a competition.	1	2	3	4	5
2.	On this team, trying hard is rewarded.	1	2	3	4	5
3.	On this team, players are punished when they make a mistake.	1	2	3	4	5
4.	On this team, the coach makes sure players improve on skills they're not good at.	1	2	3	4	5
5.	On this team, the focus is to improve each performance.	1	2	3	4	5
6.	On this team, players are taken out of the competition for mistakes.	1	2	3	4	5
7.	On this team, playing better than teammates is important.	1	2	3	4	5
8.	On this team, coach gives most of his/ her attention to the "stars".	1	2	3	4	5
9.	On this team, doing better than others is important.	1	2	3	4	5
10.	On this team, players work hard because they want to learn new things about the sport.	1	2	3	4	5
11.	On this team, the coach favors some players more than others.	1	2	3	4	5
12.	On this team, players are encouraged to outplay their own teammates.	1	2	3	4	5

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
13. On this team, players are encouraged to work on their weaknesses.	1	2	3	4	5
14. On this team, everyone wants to be the high scorer/most valuable player, etc.	1	2	3	4	5
15. On this team, everyone feels like he/she has an important role on the team.	1	2	3	4	5
16. On this team, the coach wants us to try new skills.	1	2	3	4	5
17. On this team, players like playing against good teams.	1	2	3	4	5
18. On this team, only the top players "get noticed" by the coach.	1	2	3	4	5
19. On this team, most of the players get to play in the competitions.	1	2	3	4	5
20. On this team, players are afraid to make mistakes.	1	2	3	4	5
21. On this team, only a few players can be "stars".	1	2	3	4	5

WHAT MY SOFTBALL TEAM IS LIKE

Please read each of the following statements carefully and respond to each in terms of how you see your softball team.

		Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
1.	On this team, players feel good when they do better than their teammates in a competition.	1	2	3	4	5
2.	On this team, trying hard is rewarded.	1	2	3	4	5
3.	On this team, players are punished when they make a mistake.	1	2	3	4	5
4.	On this team, the coach makes sure players improve on skills they're not good at.	1	2	3	4	5
5.	On this team, the focus is to improve each performance.	1	2	3	4	5
6.	On this team, players are taken out of the competition for mistakes.	1	2	3	4	5
7.	On this team, playing better than teammates is important.	1	2	3	4	5
8.	On this team, coach gives most of his/ her attention to the "stars".	1	2	3	4	5
9.	On this team, doing better than others is important.	1	2	3	4	5
10.	On this team, players work hard because they want to learn new things about the sport.	1	2	3	4	5
11.	On this team, the coach favors some players more than others.	1	2	3	4	5
12.	On this team, players are encouraged to outplay their own teammates.	1	2	3	4	5

	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
13. On this team, players are encouraged to work on their weaknesses.	1	2	3	4	5
14. On this team, everyone wants to be the high scorer/most valuable player, etc.	1	2	3	4	5
15. On this team, everyone feels like he/she has an important role on the team.	1	2	3	4	5
16. On this team, the coach wants us to try new skills.	1	2	3	4	5
17. On this team, players like playing against good teams.	1	2	3	4	5
18. On this team, only the top players "get noticed" by the coach.	1	2	3	4	5
19. On this team, most of the players get to play in the competitions.	1	2	3	4	5
20. On this team, players are afraid to make mistakes.	1	2	3	4	5
21. On this team, only a few players can be "stars".	1	2	3	4	5

APPENDIX D

TASK AND EGO ORIENTATION IN SPORT QUESTIONNAIRE

WHEN I FEEL SUCCESSFUL IN BASEBALL

Directions: A number of statements which athletes have used to describe times when they have felt successful in sports are listed below. Read each statement and then circle the appropriate number to the right of the statement to indicate whether you have felt most successful in baseball when each of these things happen. There are no right or wrong answers. Do not spend too m much time on any one statement, but choose the answer which describes how you usually feel.

I feel most successful in baseball when...

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. I learn a new skill and it makes me want to practice more.	1	2	3	4	5
2. I'm the only one who can do the play or skill.	1	2	3	4	5
3. I learn something that is fun to do.	1	2	3	4	5
4. I can do better than my friends.	1	2	3	4	5
5. I learn a new skill by trying hard.	1	2	3	4	5
6. The others can't do as well as me.	1	2	3	4	5
7. I work really hard.	1	2	3	4	5
8. Others mess up and I don't.	1	2	3	4	5
9. Something I learn really feels right.	1	2	3	4	5
10. I get the most hits.	1	2	3	4	5
11. A skill I learn really feels right.	1	2	3	4	5
12. I'm the best.	1	2	3	4	5
13. I do my very best.	1	2	3	4	5

WHEN I FEEL SUCCESSFUL IN SOFTBALL

Directions: A number of statements which athletes have used to describe times when they have felt successful in sports are listed below. Read each statement and then circle the appropriate number to the right of the statement to indicate whether you have felt most successful in softball when each of these things happen. There are no right or wrong answers. Do not spend too much time on any one statement, but choose the answer which describes how you usually feel.

I feel most successful in softball when...

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	I learn a new skill and it makes me want to practice more.	1	2	3	4	5
2.	I'm the only one who can do the play or skill.	1	2	3	4	5
3.	I learn something that is fun to do.	1	2	3	4	5
4.	I can do better than my friends.	1	2	3	4	5
5.	I learn a new skill by trying hard.	1	2	3	4	5
6.	The others can't do as well as me.	1	2	3	4	5
7.	I work really hard.	1	2	3	4	5
8.	Others mess up and I don't.	1	2	3	4	5
9.	Something I learn really feels right.	1	2	3	4	5
10.	I get the most hits.	1	2	3	4	5
11.	A skill I learn really feels right.	1	2	3	4	5
12.	I'm the best.	1	2	3	4	5
13.	I do my very best.	1	2	3	4	5

APPENDIX E

TARGET QUESTIONNAIRE AND SCORING PROCEDURES

WHAT I THINK PRACTICES ARE LIKE

Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. Respond to each statement by describing what you think your baseball practices are like. Think in terms of your coach when answering each statement.

During baseball practices:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	The coach values players' input.	1	2	3	4	5
2.	Players are given useful feedback on how to correct their mistakes.	1	2	3	4	5
3.	Rewards are based on how hard players try.	1	2	3	4	5
4.	Players who try hard receive positive feedback.	1	2	3	4	5
5.	Players practicing in different groups all have the opportunity to learn from the coach.	1	2	3	4	5
6.	Time is spent on mastering skills.	1	2	3	4	5
7.	Players are praised when they show improvement.	1	2	3	4	5
8.	Players who need more time to learn a new skill are given additional time.	1	2	3	4	5
9.	Most drills require players to work hard.	1	2	3	4	5
10.	Players practicing in different groups all get help from the coach.	1	2	3	4	5
11.	Players are evaluated in terms of learning.	1	2	3	4	5
12.	Individual effort is recognized.	1	2	3	4	5
13.	Most drills are not physically challenging.	1	2	3	4	5

During baseball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. The coach makes all of the decisions.	1	2	3	4	5
15. There is not enough time in practices to get better at a new skill.	1	2	3	4	5
16. Players feel they have a say in what the coach decides.	1	2	3	4	5
17. Every group of players has the opportunity to develop their skills.	1	2	3	4	5
18. Players are not judged by their rate of improvement.	1	2	3	4	5
19. Players get to work on a variety of drills.	1	2	3	4	5
20. Players are given time to learn new skills.	1	2	3	4	5
21. Many different drills are used in practice.	1	2	3	4	5
22. Players improvement often goes unnoticed.	1	2	3	4	5
23. The coach asks for suggestions from the players.	1	2	3	4	5
24. Players have the opportunity to improve their skills no matter what group they work in.	1	2	3	4	5

WHAT I THINK PRACTICES ARE LIKE

Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. Respond to each statement by describing what you think your softball practices are like. Think in terms of your coach when answering each statement.

During softball practices:

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.	The coach values players' input.	1	2	3	4	5
2.	Players are given useful feedback on how to correct their mistakes.	1	2	3	4	5
3.	Rewards are based on how hard players try.	1	2	3	4	5
4.	Players who try hard receive positive feedback.	1	2	3	4	5
5.	Players practicing in different groups all have the opportunity to learn from the coach.	1	2	3	4	5
6.	Time is spent on mastering skills.	1	2	3	4	5
7.	Players are praised when they show improvement.	1	2	3	4	5
8.	Players who need more time to learn a new skill are given additional time.	1	2	3	4	5
9.	Most drills require players to work hard.	1	2	3	4	5
10.	Players practicing in different groups all get help from the coach.	1	2	3	4	5
11.	Players are evaluated in terms of learning.	1	2	3	4	5
12.	Individual effort is recognized.	1	2	3	4	5
13.	Most drills are not physically challenging.	1	2	3	4	5

During softball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. The coach makes all of the decisions.	1	2	3	4	5
15. There is not enough time in practices to get better at a new skill.	1	2	3	4	5
16. Players feel they have a say in what the coach decides.	1	2	3	4	5
17. Every group of players has the opportunity to develop their skills.	1	2	3	4	5
18. Players are not judged by their rate of improvement.	1	2	3	4	5
19. Players get to work on a variety of drills.	1	2	3	4	5
20. Players are given time to learn new skills.	1	2	3	4	5
21. Many different drills are used in practice.	1	2	3	4	5
22. Players improvement often goes unnoticed.	1	2	3	4	5
23. The coach asks for suggestions from the players.	1	2	3	4	5
24. Players have the opportunity to improve their skills no matter what group they work in.	1	2	3	4	5

TARGET Questionnaire
Scoring Procedures

The TARGET structures produce six subscales: task, authority, reward, grouping, evaluation, and time. Each subscale is scored separately, with four items per subscale, employed in a 5-point Likert scale. The item breakdown for each subscale is as follows. For the task subscale, items 9, 13, 19, and 21 were employed. Items 1, 14, 16, and 23 produced the authority subscale, while the reward subscale consisted of items 3, 7, 12, and 22. The following items produced the grouping subscale, evaluation subscale, and time subscale: items 5, 10, 17, and 24; items 2, 4, 11, and 18; items 6, 8, 15, 20, respectively. Items 13, 14, 15, 18, and 22 were scored in reverse order.

APPENDIX F

FIRST TARGET QUESTIONNAIRE

PILOT STUDY

WHAT I THINK PRACTICES ARE LIKE

Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. Respond to each statement by describing what you think your baseball practices are like.

<u>During baseball practices:</u>

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The coach spends time with those players who need help learning a new skill.	1	2	3	4	5
Players know what standards the coach uses to evaluate their performance..	1	2	3	4	5
Most drills are physically challenging.	1	2	3	4	5
The coach asks for suggestions from the players.	1	2	3	4	5
Players who need more time to learn a new skill are given additional time.	1	2	3	4	5
The coach frequently works with only certain groups of players.	1	2	3	4	5
Many different drills are used in practice.	1	2	3	4	5
Players are praised when they show improvement.	1	2	3	4	5
Players feel they have a say in what the team does.	1	2	3	4	5
Players talk individually with the coach about their performances.	1	2	3	4	5
Player work with a variety of different teammates when they practice in groups.	1	2	3	4	5
Rewards are based on how hard players try.	1	2	3	4	5
The coach value players' input.	1	2	3	4	5

During baseball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
There is not enough time in practices to get better at a new skill.	1	2	3	4	5
Individual effort is recognized.	1	2	3	4	5
Most drills require players to work hard.	1	2	3	4	5
Players rotate often to different practice groups.	1	2	3	4	5
When evaluating players' performance, the coach uses unrealistic expectations.	1	2	3	4	5
The coach makes all of the decisions.	1	2	3	4	5
The coach tries to work with each group of players.	1	2	3	4	5
Players are given time to learn new skills.	1	2	3	4	5
Players get to work on a variety of drills.	1	2	3	4	5
Player improvement often goes unnoticed.	1	2	3	4	5
The standards the coach uses to evaluate players' performance are fair.	1	2	3	4	5

APPENDIX G

SECOND TARGET QUESTIONNAIRE
PILOT STUDY

WHAT I THINK PRACTICES ARE LIKE

Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. Respond to each statement by describing

During softball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The coach tries to work with each group of players.	1	2	3	4	5
Players are given useful feedback on how to correct their mistakes.	1	2	3	4	5
Players are judged by their rate of improvement.	1	2	3	4	5
The coach frequently works with only certain groups of players.	1	2	3	4	5
Players are given time to learn new skills.	1	2	3	4	5
The coach makes all of the decisions.	1	2	3	4	5
Rewards are based on how hard players try.	1	2	3	4	5
Many different drills are used in practice.	1	2	3	4	5
Players who need more time to learn a new skill are given additional time.	1	2	3	4	5
Individual effort is recognized.	1	2	3	4	5
Player improvement is seldom used in evaluations.	1	2	3	4	5
The coach asks for suggestions from the players.	1	2	3	4	5
Players who try hard receive positive evaluations.	1	2	3	4	5
Players get to work on a variety of drills.	1	2	3	4	5

During softball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Players talk individually with the coach about their performances.	1	2	3	4	5
When evaluating players' performance, the coach has unrealistic expectations.	1	2	3	4	5
There is not enough time in practices to get better at a new skill.	1	2	3	4	5
Player improvement often goes unnoticed.	1	2	3	4	5
Players work with a variety of different teammates when they practice in groups.	1	2	3	4	5
Players are praised when they show improvement.	1	2	3	4	5
Most drills require players to work hard.	1	2	3	4	5
Players are evaluated in terms of learning.	1	2	3	4	5
Most drills are physically challenging.	1	2	3	4	5
Players rotate often to different practice groups.	1	2	3	4	5
Time is allocated to mastering skills.	1	2	3	4	5
Players feel they have a say in what the coach does.	1	2	3	4	5
Players know what standards the coach uses to evaluate their performance.	1	2	3	4	5
The coach values players' input.	1	2	3	4	5

APPENDIX H

THIRD TARGET QUESTIONNAIRE

PILOT STUDY

WHAT I THINK PRACTICES ARE LIKE

Please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response. Respond to each statement by describing what you think your baseball practices are like. Think in terms of your coach when answering each statement.

During baseball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. The coach values players' input.	1	2	3	4	5
2. Players are given useful feedback on how to correct their mistakes.	1	2	3	4	5
3. Rewards are based on how hard players try.	1	2	3	4	5
4. Players who try hard receive positive feedback.	1	2	3	4	5
5. The coach gives more attention to certain groups of players.	1	2	3	4	5
6. Time is spent on mastering skills.	1	2	3	4	5
7. Players are praised when they show improvement.	1	2	3	4	5
8. Players who need more time to learn a new skill are given additional time.	1	2	3	4	5
9. Most drills require players to work hard.	1	2	3	4	5
10. The coach frequently works with only certain groups of players.	1	2	3	4	5
11. Players are evaluated in terms of learning.	1	2	3	4	5
12. Individual effort is recognized.	1	2	3	4	5
13. Most drills are physically challenging.	1	2	3	4	5

During baseball practices:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
14. The coach makes all of the decisions.	1	2	3	4	5
15. Players practicing in different groups all get help from the coach.	1	2	3	4	5
16. There is not enough time in practices to get better at a new skill.	1	2	3	4	5
17. Players feel they have a say in what the coach decides.	1	2	3	4	5
18. Every group of players has the opportunity to develop their skills.	1	2	3	4	5
19. Players are judged by their rate of improvement.	1	2	3	4	5
20. Players get to work on a variety of drills.	1	2	3	4	5
21. Players are given time to learn new skills.	1	2	3	4	5
22. Players practicing in different groups all have the opportunity to learn from the coach.	1	2	3	4	5
23. Many different drills are used in practice.	1	2	3	4	5
24. Players improvement often goes unnoticed.	1	2	3	4	5
25. You could be in any group and still be challenged by the coach.	1	2	3	4	5
26. The coach asks for suggestions from the players.	1	2	3	4	5
27. Players have the opportunity to improve their skills no matter what group they work in.	1	2	3	4	5

APPENDIX I

PARENTAL INFORMED CONSENTS

INFORMED CONSENT

Players' Perceptions of their Sport Experiences

Your child is invited to participate in a research study which will examine how factors within the team environment may influence how he determines if he is successful in sport. The principal researcher is Sue Becker, a doctoral student is Sport Studies at Oregon State University. The school principal and your child's coach has given their approval and support for this research project. Your child was selected as a possible participant because he is a member of the baseball team at a selected high school.

If you decide to allow your child to participate in this study, he will be asked to complete a questionnaire along with the rest of his team. The questionnaire will take about 20 minutes to administer and will be completed at the start of a team practice. It is very important to get as many athletes as possible involved in the study in order to have an adequate sample size for analyzing the questionnaire responses. Any information that is obtained in connection with this study will remain confidential. All subject entries in the computer data files will be identified by a number because there is no need for your child's name to be associated with the completed questionnaire. Your child's participation is entirely voluntary and he is free to discontinue participation at any time.

The proposed research will contribute to the body of scientific knowledge on player's perceptions of their team environment, providing insight into how best to structure teaching and activity environments for the benefit of the athlete. It is possible that some athletes may feel anxious if they are unable to answer certain questions. In order to minimize the chances of this occurring, the researcher will initially develop rapport with the athletes, answer any questions, provide ample time for responses, and allow them to refuse to answer any question that they find difficult or confusing.

If you have any questions about the research at any time, please contact Sue Becker, 737-6267. If you have questions about your rights as a participant in a research project, please contact the Research Office, Oregon State University, 737-3437. You may request a copy of this form to keep.

Your signature below indicates that you have read and understand the information provided above, that you agree to allow your child to participate in the research study, and that you may withdraw your consent at any time without penalty or loss of benefits to which you are otherwise entitled.

Parent/Guardian Signature: _____ Date: _____

Child's Name: _____

INFORMED CONSENT

Players' Perceptions of their Sport Experiences

Your child is invited to participate in a research study which will examine how factors within the team environment may influence how she determines if she is successful in sport. The principal researcher is Sue Becker, a doctoral student is Sport Studies at Oregon State University. The school principal and your child's coach has given their approval and support for this research project. Your child was selected as a possible participant because she is a member of the softball team at a selected high school.

If you decide to allow your child to participate in this study, she will be asked to complete a questionnaire along with the rest of her team. The questionnaire will take about 20 minutes to administer and will be completed at the start of a team practice. It is very important to get as many athletes as possible involved in the study in order to have an adequate sample size for analyzing the questionnaire responses. Any information that is obtained in connection with this study will remain confidential. All subject entries in the computer data files will be identified by a number because there is no need for your child's name to be associated with the completed questionnaire. Your child's participation is entirely voluntary and she is free to discontinue participation at any time.

The proposed research will contribute to the body of scientific knowledge on player's perceptions of their team environment, providing insight into how best to structure teaching and activity environments for the benefit of the athlete. It is possible that some athletes may feel anxious if they are unable to answer certain questions. In order to minimize the chances of this occurring, the researcher will initially develop rapport with the athletes, answer any questions, provide ample time for responses, and allow them to refuse to answer any question that they find difficult or confusing.

If you have any questions about the research at any time, please contact Sue Becker, 737-6267. If you have questions about your rights as a participant in a research project, please contact the Research Office, Oregon State University, 737-3437. You may request a copy of this form to keep.

Your signature below indicates that you have read and understand the information provided above, that you agree to allow your child to participate in the research study, and that you may withdraw your consent at any time without penalty or loss of benefits to which you are otherwise entitled.

Parent/Guardian Signature: _____ Date: _____

Child's Name: _____

APPENDIX J

SUBJECT INFORMED CONSENTS

Dear Baseball Player:

You have been selected to participate in a special project. In this project, we are interested in how you think about yourself as well as things that happen in baseball. This is so we can try to make sport more enjoyable for all athletes.

We would like you to read and answer the questions on the following pages. It will take about 20 minutes. This is a survey, not a test. There are no right or wrong answers to the questions. Since people are very different from one another, each of you will be putting down something different. Only we will see your answers, not your parents or your coach, or anybody else. We are interested in how you feel about sports, so all your answers to these questions are important.

If you want to go ahead and answer the questions, please sign your name on the line below and write the date. There will be no penalties to you if decide not to answer the questions. Your parent(s) have already told us that it is all right with them if you want to do it. If you want to stop at any time, just tell us. Also, if you have any questions about what you will be doing or any questions at all, just ask us.

Thank you so much for your time.

Signature: _____ Date: _____

Age: _____ Grade: _____

I am a member of the (check (√) one):
Junior varsity team [ ] Varsity team [ ]

My status on this team is (check (√) one):
Starter [ ] Nonstarter [ ]

Number of years that you have played for your current coach _____

Ethnic Group (check (√) one):

[ ] Asian or Pacific Islander
[ ] Hispanic
[ ] Other _____
[ ] American Indian or Alaskan Native
[ ] Black, Non-Hispanic
[ ] White, Non-Hispanic

STOP AND WAIT FOR MORE INSTRUCTIONS

Dear Softball Player:

You have been selected to participate in a special project. In this project, we are interested in how you think about yourself as well as things that happen in softball. This is so we can try to make sport more enjoyable for all athletes.

We would like you to read and answer the questions on the following pages. It will take about 20 minutes. This is a survey, not a test. There are no right or wrong answers to the questions. Since people are very different from one another, each of you will be putting down something different. Only we will see your answers, not your parents or your coach, or anybody else. We are interested in how you feel about sports, so all your answers to these questions are important.

If you want to go ahead and answer the questions, please sign your name on the line below and write the date. There will be no penalties to you if decide not to answer the questions. Your parent(s) have already told us that it is all right with them if you want to do it. If you want to stop at any time, just tell us. Also, if you have any questions about what you will be doing or any questions at all, just ask us.

Thank you so much for your time.

Signature: _____ Date: _____

Age: _____ Grade: _____

I am a member of the (check (√) one):
Junior varsity team [ ] Varsity team [ ]

My status on this team is (check (√) one):
Starter [ ] Nonstarter [ ]

Number of years that you have played for your current coach _____

Ethnic Group (check (√) one):

[ ] Asian or Pacific Islander
[ ] Hispanic
[ ] Other _____
[ ] American Indian or Alaskan Native
[ ] Black, Non-Hispanic
[ ] White, Non-Hispanic

STOP AND WAIT FOR MORE INSTRUCTIONS

APPENDIX K

DIAGNOSTIC MODELS

DIAGNOSTIC MODELS

Five separate structural models were conducted to determine if the TARGET structures' factor loadings were stable and reliable. Each TARGET structure was systematically deleted, and a new model analyzed. The first model excluded task structure; thus, the four TARGET structures were authority structure, reward/evaluation structure, grouping structure, and time structure. The four subsequent models deleted each of the above TARGET structures, respectively, resulting in only four of the five TARGET structures being analyzed in each model.

These diagnostic checks were necessary, in light of the high intercorrelations found among the TARGET structures. Results from these diagnostic models provided evidence that indicated that the factor loadings were indeed stable and reliable. Factor loadings for the path from each TARGET structure to mastery climate for the five models are displayed in Table 1. In Table 2, the factor loadings for the path linking each TARGET structure to performance climate from the five models are illustrated.

Additionally, the relationships between the eta (mastery climate, performance climate, task orientation, ego orientation) did not change. In all five analyses, mastery climate and task orientation revealed a significant positive relationship. The relationship between performance climate and ego orientation also maintained a significant positive one. Neither the path linking mastery climate to ego orientation or the path between performance climate and task orientation reached significance at the .05 level.

TABLE 1

Path Between TARGET Structures and Mastery Climate When One TARGET Structure is Deleted from Model

Construct Deleted	Task Structure	Authority Structure	Rew/Eval Structure	Grouping Structure	Time Structure
Task Structure		-.05	*.54	.10	*.35
Authority Structure	*.23		*.45	.09	.21
Reward/ Evaluation Structure	*.28	.09		*.21	*.41
Grouping Structure	*.23	-.04	*.52		.27
Time Structure	*.28	-.01	*56	.16	

*denotes significance at .05 level.

TABLE 2

Path Between TARGET Structures and Performance Climate When One TARGET Structure is Deleted from Model

Construct Deleted	Task Structure	Authority Structure	Rew/Eval Structure	Grouping Structure	Time Structure
Task Structure		*-.27	-.01	*.37	-.04
Authority Structure	.31		-.26	*-.37	-.28
Reward/ Evaluation Structure	*.27	*-.27		*-.41	-.24
Grouping Structure	*.27	*-.23	-.25		-.40
Time Structure	*23	*-.27	-.17	*-.45	

*denotes significance at .05 level.

The factor loadings between the eta were similar in each diagnostic check, and were consistent with those reported in the main structural model.