

The Relationship between Perceived Competence and Perfectionism in Sport

By

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The Relationship between Perceived Competence and Perfectionism in Sport

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DEDICATION

This dissertation is dedicated to all those who have sculpted my life into what it has become. To my family, Lee, Gloria and Eric Watson, thank you! You have been my biggest fans both on the playing field and off. No matter what the challenge, no matter what the score, you were there to support me, encourage me, and teach me to be graceful, even in the face of failure. The subject of this dissertation is perfectionism, of which I am no stranger. The patience and understanding that my family has shown me over the years has allowed me to persevere even when I was unsure success was possible. Mom and Dad, you have taught me to chase my dreams no matter how large or how small. Now look at this dream I have accomplished. Eric, I will forever envy your contagious laughter, loyalty and ability to live life for the moment with no regrets. You are the best big brother a girl could imagine (most of the time).

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The purposes of this dissertation were two-fold: 1) to explore the trait and situational components of the perfectionism construct, and 2) to explore the relationship between perfectionism, perceived competence (PC), and the sport-related factors of sport type (team and individual) and level of competition (high school/community, state, and college).

The sample included 239 high school and collegiate athletes, all current participants in at least one sport. Participants completed a 35-item unidimensional sport perfectionism inventory as well as a PC rating scale. The PC scale consisted of a researcher generated item and a 6-item subscale of the Intrinsic Motivation Inventory (IMI; McAuley, Duncan, & Tammen, 1989). Both used a Likert-type scale. Rasch model analysis (Rasch, 1960) was used to create logit scores for all participants on perfectionism and PC to give scores an additive quality. Intraclass correlation (ICC), within-subjects multivariate general linear model (GLM), and linear regression were used to examine the data.

ICC yielded a positive and significant relationship ($r = .65$) between perfectionism scores high and low competence sport domains. However, PC did not yield a significant relationship based on ICC ($r = .29$).

Multivariate GLM analysis for the full interaction model yielded one significant interaction between PC and level of competition ($p = .002$). The full model was divided into high and low competence yielding a significant interaction in the low competence model, $p = .016$. Post hoc analysis in the form of linear regression revealed that perfectionism scores varied as a function of PC for high school/community ($p = .012$) athletes only. There was no

significant interaction in the high competence model, but main effects for the effect of level of competition ($p = .027$), and type of sport ($p = .020$) on perfectionism scores.

Interaction and main effects suggest that in certain sport situations, perfectionism scores may be affected by PC, level of competition and type of sport. Future research should continue to extend the literature on the trait and situational components of the construct to develop a more comprehensive model of perfectionism and performance. Athletes, coaches, and practitioners can learn from the influence of sport-related characteristics on perfectionist tendencies and use psychological skills training to overcome these effects.

TABLE OF CONTENTS

	Page
DEDICATION	i
ACKNOWLEDGEMENTS.....	iii
ABSTRACT.....	v
LIST OF TABLES	xi
LIST OF FIGURES.....	xii
CHAPTER	
I. INTRODUCTION.....	1
Statement of the Problem and	
Significance of the study.....	1
Purpose of the Study.....	7
Delimitations.....	7
Assumptions.....	8
Hypotheses.....	8
Operational Definitions.....	9
II. REVIEW OF LITERATURE.....	11
A Brief Overview of Personality:	
Trait and Interactional Theories	12
Coping in Performance Settings: An Examination	
of Trait and Situational Properties.....	16
Definitions of Perfectionism: An Overview.....	23

	Antecedents of Perfectionism in a General Context.....	29
	Measuring Perfectionism.....	33
	Perfectionism and the Gifted.....	40
	Perfectionism in Sport and Exercise Settings	41
	Perfectionism and Self-Worth: An Exploration of Self-Esteem, Self-Efficacy, and Perceived Competence	45
	Theories of Sport Motivation and Goal Orientation	51
	Self Determination Theory.....	51
	Achievement Goal Theory.....	52
III.	METHODOLOGY.....	57
	Participants.....	57
	Procedures.....	57
	Instrumentation	58
	Perfectionism.....	58
	Perceived Competence	60
	Data Analysis	60
	Power.....	61
	Experimental Design.....	61
	Preliminary Analysis.....	62
	General Linear Modeling.....	62
IV.	RESULTS.....	64
	Data Transformation.....	64

Validity of Instruments Used.....	65
Descriptive Statistics.....	66
Correlation Analysis.....	69
Perfectionism	69
Perceived Competence	70
Path Diagram.....	71
General Linear Models	73
The Interaction Model.....	74
The Perfectionism Model for the High Perceived Competence Sport Domain.....	76
The Perfectionism Model for the Low Perceived Competence Sport Domain.....	80
Chapter Summary	85
V. DISCUSSION.....	86
The Low Perceived Competence Sport Domain.....	88
The High Perceived Competence Sport Domain	91
Level of Competition	92
Type of Sport	94
Is Perfectionism a Trait or Situational Construct?.....	96
Limitations.....	99
Future Research.....	102
Conclusions.....	103

REFERENCES..... 105

APPENDICES..... 128

 Appendix A: Instructions and Instrumentation.....130

 Appendix B: Letters of Informed Consent.....137

 Appendix C: IRB Approval.....141

LIST OF TABLES

Table 1: Participant Characteristics	68
Table 2a: Multivariate Analysis of Variance Results for the Reduced Interaction of Perfectionism	75
Table 2b: Multivariate Analysis of Variance Results for the Final Parsimonious Model of Perfectionism	76
Table 3: Analysis of Variance Model of Perfectionism for the Sport Domain in Which Athletes Reported a Higher Level of Perceived Competence	78
Table 4: Summary of Hierarchical Regression Analysis for Variables Predicting Perfectionism in the Higher Perceived Competence Sport Domain	79
Table 5: Analysis of Variance Model of Perfectionism for the Sport Domain in Which Athletes Reported a Lower Level of Perceived Competence	81
Table 6: Summary of Hierarchical Regression Analysis for Variables Predicting Perfectionism in the Lower Perceived Competence Sport Domain	83
Table 7: Summary of Separate Hierarchical Regression Analyses for Perfectionism at Each Level of Competition	84

LIST OF FIGURES

Figure 1: Model Diagram of Hypothesized Interactions and Main Effects among Predictor and Indicator Variables	72
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CHAPTER I

INTRODUCTION

Statement of the Problem and Significance of the Study

Individuals characterized as perfectionists exhibit exaggerated expectations, higher fears of failure, and few coping abilities in challenging situations, in addition to other dysfunctional tendencies (Frost, Marten, Lahart, & Rosenblate, 1990) than those individuals who are not characterized as perfectionists. Perhaps not surprisingly, perfectionism has been traditionally perceived as negative, undesirable, abnormal, neurotic, maladaptive, or dysfunctional (Anshel & Mansouri, 2005; Blatt, 1995; Hamachek, 1978; Suddarth & Slaney, 2001). However, perfectionism has desirable, positive or adaptive properties (Enns & Cox, 2002; Hamachek, 1978). For instance, Enns and Cox acknowledged the positive aspects of perfectionism, such as high personal standards, high but achievable goals, a strong desire to excel, and enhanced levels of motivation.

Researchers have typically defined perfectionism as a trait rather than a state construct (Frost et al., 1990). A trait implies that perfectionism is a part of one's personality; it is stable over time and across different situations (Anshel & Seipel, 2006; Anshel & Eom, 2003). Despite the findings that support dispositional (trait) characteristics of perfectionism, some researchers argue that perfectionism manifests itself differently across various situations (Saboonchi & Lundh, 1999). Similar to the effect of anxiety on sport performance, perfectionism also can be both facilitative and debilitating to performance. It is possible that an individual may demonstrate a positive perception of perfectionism in some settings (e.g., academic settings), yet perceive the

same aspects of perfectionism as negative in other settings (e.g., sport). If perceptions of perfectionist tendencies and how those tendencies influence performance differ depending on the type of performance setting then perfectionism is not necessarily a global or dispositional characteristic. Rather, it may change as a function of the situation or context in which the event takes place. To date, there has been little research directed at differentiating dispositional from contextual characteristics of the perfectionism construct in competitive sport environments.

Competitive sport is one achievement setting which has not extensively explored dispositional versus contextual perfectionism. In a sport setting, McArdle and Duda (2004) explored the effects of different parental influences on perfectionism. They noted that perfectionism levels and sources varied as a function of perceived parental behaviors and attitudes. These findings provide partial evidence of the potential contextual correlates of the perfectionism construct. Through further exploration of the contextual components of perfectionism, McArdle and Duda's findings can be further substantiated. The researchers suggest that, "It would be interesting to examine the significant social contextual correlates of perfectionistic tendencies among youngsters who vary in their competence and/or investment in different achievement settings" (p. 784). Thus, based on the results of past studies supporting both the trait and state components of perfectionism (e.g., Anshel & Eom, 2003; Antony & Swinson, 1998; Schuler, 2000), further investigation into the dispositional and situational properties of the construct seems warranted.

There are potential implications if individuals are found to differ in perfectionism tendencies as a function of situational characteristics. It is possible that perfectionism

may be a function of situational properties, and not dispositional (Saboonchi & Lundh, 1999). If this is the case, examining the perfectionism-performance relationship on solely a global, or dispositional, level may not provide a full understanding of the influence of perfectionism on the physical and psychological performance of competitive athletes. Coaches, parents, sport psychology consultants and the athletes themselves can benefit from knowing how the psychological characteristics of athletes influence sport performance. Researchers need to determine the benefits and costs of perfectionists' thinking on sport satisfaction and the quality of sport performance. Thus, in the present study, perceived competence will be manipulated in order to assess the extent to which perfectionism consists of trait (dispositional) or contextual (situational) characteristics among adolescent athletes.

Over 20 million youth in the U.S. participate in organized sport at some level. However, throughout childhood and adolescence, the dropout rate for youth sport participation is substantial (Alderman, Beighle, & Pangrazi, 2006). Evidence of the negative components of perfectionism may well serve to explain this dilemma. Butcher, Lindner and Johns (2002) conducted a longitudinal study of youth sport participation patterns. Among their sample, over 90% of participants dropped out of at least one sport between grades 2 and 10. The attrition rate within youth sport is high and significantly related to the motivation, satisfaction and performance levels of the participants (Alderman et al.).

One influential factor that predicts participation in sport and physical activity is the athlete's perception of physical competence (Craft, Pfeiffer, & Pivarnik, 2003; Hulya, Kosar, & Isler, 2001). Perceived competence (PC) is related to the individual's belief in

his/her ability to effectively complete a task (Harter, 1978). Alderman et al. (2006) state that, “The willingness to try new experiences and continue to participate in physical activity often depends on a youngster’s perception of her or his ability level, or perceived competence” (p. 42). There is a demonstrated relationship between perceived competence and sport participation patterns, levels of enjoyment, and performance quality among young athletes. One avenue in which the relationship between PC and sport performance has been demonstrated is through models of motivation such as the Achievement Goal Theory.

Perceived competence is a primary component of the Achievement Goal Theory (Nicholls, 1989), one of the most dominant frameworks in sport motivation research (Sit & Lindner, 2005). The results of studies in sport settings indicate that perceived competence mediates the relationship between goal orientation (ego or task) and levels of intrinsic motivation, both of which are predictive of performance quality (Losier & Vallerand, 1994; Reinboth, Duda, & Ntoumanis, 2004). Level of perceived competence may be more indicative of performance than any other component of motivational theory (Reinboth et al.). The prevalence of PC in explaining sport participation and enjoyment supports the argument that perceived competence, as it is related to goal orientation, influences levels of performance in a variety of competitive environments. As noted, goal orientation and PC are directly related. The relationship between goal orientation and perfectionism has also been studied.

As previously defined, perfectionism reflects a tendency to set excessively high standards for performance. Researchers have linked perfectionism to goal orientation. Because perfectionism and goal orientation and goal orientation and PC are each related,

it is plausible that perfectionism and PC also share a relationship. If, for instance, individuals perceive themselves as competent in a particular sport setting (e.g., basketball) they may be more likely to set high expectations for the quality of their performance in this sport. However, if the same individual perceives a low level of competence in another situation, for example participating in a sport in which they feel they are less skilled, it is possible that indicators of perfectionism would decrease due to the individual's reduced expectation for performance quality. The individual's ability to differentiate performance quality and alter expectations accordingly would suggest a situational perception of perfectionism. If the athlete is unable to discriminate between situations and conveys the same level of expectation regardless of perceived ability, however, perfectionism would be considered to possess trait-like properties.

Researchers who have explored PC and perfectionism in sport indicate the importance of discrepancy (Suddarth & Slaney, 2001). Discrepancy has been defined as the difference between perceptions of ability and actual performance ability (Rice & Slaney, 2002; Suddarth & Slaney). Researchers who have utilized the discrepancy dimension of perfectionism indicate that individuals who score high on this dimension are characterized as maladaptive perfectionists. Thus, by determining if PC and perfectionism are related it may be possible to help individuals reevaluate abilities and thus set more realistic and attainable goals, allowing for a lower level of discrepancy between perceived and actual competence.

In the past, perfectionism, when viewed as a trait, has been considered stable across all settings. The assumption that perfectionism is a trait may lead to inappropriate approaches to psychological skills training for athletes if levels of perfectionism do not

affect performance the same in all situations. To date, there is little research targeting the specific contextual effects perceived competence may have on perfectionism in motor performance settings, specifically with respect to sport. The research question for the present study explores the effect of perceived sport competence on perfectionism among competitive athletes.

The influence of perceived competence on motivation and enjoyment in sport participation is important for understanding how perceived competence may affect perfectionism and performance. Similar to perceived competence, both perfectionism and performance are important for improvement and maintenance of high levels of participation, satisfaction, and motivation among athletes. Further research is needed to improve the understanding of perfectionism in sport performance settings as a function of perceived competence. As a result, practitioners, parents, teachers, coaches, and sport psychologists will be better equipped to address perfectionism in the competitive sport environment and provide interventions and mentoring to assist athletes in using perfectionist thoughts more adaptively. Maladaptive thoughts and emotions that can hinder performance can, thus, be avoided. If perfectionism can be used to set challenging goals, improve the drive for success, increase feelings of satisfaction when goals are met or worked for, and in the end decrease the prevalence of discontinued participation, then the relationship between perceived competence, perfectionism and ultimate sport performance may be an essential component in the prolonged satisfaction and success of competitive athletes.

Purpose of the Study

The purposes of the present study are (1) to explore the trait and situational characteristics of perfectionism; that is, to determine the extent to which the characteristics of perfectionism vary as a function of perceived task competence, and (2) to explore the extent of the relationship between perceived competence, perfectionism, and the sport-related characteristics of sport type (team and individual) and level of competition (high school, state and college).

Delimitations

1. The participants for this study will be limited to competitive athletes. More specifically, all participants were current high school junior and senior athletes or current Division I collegiate athletes. All participants will be attending institutions located in the southeastern U.S. The focus on this particular demographic will allow results to be generalized to only this particular region.
2. The only independent variable being directly manipulated will be perceived competence.
3. Perfectionism will be assessed solely in the context of competitive sport. Thus, assuming that situational characteristics of the construct are found, results will not provide an exhaustive assessment of how perfectionism levels may demonstrate situational characteristics in other competitive settings.
4. Only one measure will be used to assess the dependent variable of situational perfectionism. The measure will be the Unidimensional Perfectionism in Sport Inventory (Anshel, Weatherby, Kang & Watson, in press).

Assumptions

The following assumptions will be understood in this study:

1. The measures administered in the present study will be self-report inventories. It is assumed that participants will respond to each item honestly.
2. The inventories administered in this study will be valid and reliable.
3. Participants will be able to accurately recall situations which may have occurred on previous sport teams or experiences over the course of time.

Hypotheses

The following hypotheses will be tested in the present study:

- 1) The relationship between perceived competence and sport perfectionism will be positive and significant.

Justification: Research has shown that perceived competence is a component of achievement motivation. As such, perceived competence is related to greater feelings of success and enjoyment and to strivings for personal accomplishment. It is expected that individuals who demonstrate greater perceived competence in a particular sport-related activity will also demonstrate higher personal expectations and strive to perform at a higher level than individuals with little efficacy, or lower perceived competence in a sport-task.

- 2) When controlling for type of sport, the effect of perceived competence on sport perfectionism will be different depending on the participant's level of competition.

- 3) When controlling for level of competition, the effect of perceived competence on perfectionism will be different for individual sport athletes than it will for team sport athletes.

Operational Definitions

Trait Perfectionism: Trait perfectionism is the tendency to set excessive, often unattainable performance goals and standards for oneself as well as for others. For the present study trait perfectionism is defined as the setting of excessively high goals and standards for oneself in a competitive setting.

Situational Perfectionism: Situational perfectionism is the tendency to set excessive, often unattainable performance goals and standards for oneself and for others in a specific competitive context. For the present study, situational perfectionism is defined as the tendency to set excessive goals and standards in situations of varying sport ability.

Perceived Competence: Perceived competence is the belief an individual has in his/her ability to effectively perform a task or skill. In the present study, perceived competence will be defined as an individual's belief in his/her ability to perform a particular sport skill.

Type of sport: Sport type is defined as the competitive characteristics of the sport environment. For the present study, athletes will indicate sport type as either individual or team.

Team Sport: A team sport is characterized as one which is interactive in nature. Performance is dependent on the interaction of a group rather than individuals.

Individual Sport: An individual sport is one which is co-active in nature.

Performance quality is dependent on the individual contributions to the group rather than the interaction of the group.

CHAPTER II

REVIEW OF LITERATURE

Perfectionism is the tendency to set excessively high expectations, often projecting those extreme expectations on others. Considered a trait, perfectionism has been examined in relation to performance in a variety of human performance settings. The study of perfectionism is a relatively new concept in sport psychology that has received increased attention in recent years. It has been studied in relation to goal orientation, self-esteem, coping, and performance quality. Unknown to date is the extent to which perfectionism in sport is more apparent in selected situations. One of these conditions is called perceived competence (PC).

Perceived competence, as it is defined in a sport setting, is the belief in one's ability to perform a particular task. Perceived competence may differ depending on the task or situation. For instance, an individual who is competing in two sports, basketball and badminton, may have different levels of PC; that is, different beliefs about his/her abilities in each of these two performance tasks. Due to its influence on sport and exercise performance, PC is frequently included in the sport pedagogy literature in addition to other achievement settings. Despite the prevalence of PC in sport settings, the relationship between PC and perfectionism has received limited attention by researchers.

In this chapter, the following concepts will be explored: (1) a brief overview of selected personality theories in relation to the conceptual framework of perfectionism, (2) the theoretical bases of trait and state based research, (3) evidence of perfectionism in the general psychology literature, (4) studies examining perfectionism in the sport

psychology literature, (5) how self esteem and PC relate to one another, to sport and to perfectionism and (6) to explore perfectionism, PC and theories of motivation.

A Brief Overview of Personality: Trait and Interactional Theories

A majority of psychological research is based on the attempt to explain, define, explore or predict personality correlates. Personality is a combination of all the characteristics which give a person a unique identity. Personality is usually defined as “the unique, relatively enduring internal and external aspects of a person’s character that influence behavior in different situations” (Schultz & Schultz, 2001). If perfectionism is a personality trait and the above definition is in fact true, it follows then that perfectionism does not change across situations, i.e., that it is a part of one’s personality. Theorists who believe the characteristics of personality are unchanging support the trait theory of personality.

The trait theory posits that individuals possess an unchanging set of personality traits which are stable across time and situation. Carlson and Buskist (1997), for example, define a personality trait as “an enduring personal characteristic that reveals itself in a particular pattern of behavior in different situations” (p. 450). Consistency (i.e., whether or not the characteristics are stable across time or situations) has traditionally been at the center of personality theory (Allport, 1937; Cattell, 1978). Allport contends that the consistency of thought and behavior patterns across situations, in addition to consistency within a given situation across time, has been explored in an attempt to fully examine evidence of personality traits. Evidence of consistency of these traits across time or in different situations would support the development of trait theories of personality.

Trait theories posit that an individual's personality is based solely on inherent, genetically determined characteristics and tendencies. The Big Five model, also called the Five-Factor model, is among the accepted trait-based theories of personality. The Big Five model posits that personality is characterized by the traits of openness, conscientiousness, extroversion, agreeableness, and neuroticism. High levels of openness suggest a tendency toward creativity, diverse interests, and curiosity. Conscientious individuals are trustworthy, diligent, committed, and have a strong work ethic. Extroverted individuals enjoy social situations, are talkative, and outgoing. Agreeableness suggests a tendency toward generosity, altruism, and good-natured behavior. The fifth dimension, neuroticism, reflects nervousness, emotional instability, and self-consciousness. The Big Five and other trait based theories are typically beneficial for descriptive purposes but can be used to predict behavior based on personality factors (Costa & McCrea, 1992; Hendriks, 1996). Researchers have examined the components of an individual's personality across situations and have determined that despite the changing surroundings certain traits remain stable. If personality is a trait, then environmental changes or events that occur during the early years of human development should not affect an individual's thought and behavior patterns, which are thought to make up personality. Despite the history of support for personality traits (e.g., Block, 1968; Goldberg, 1993), the person-situation debate still receives much attention by researchers and theorists.

Those who do not support the trait theory believe that there is a situational influence on the development of personality and thus the interactional model (e.g., Endler, 1993; Millon, 1969; Schultz & Schultz, 2001). Interactional theories explain

personality as a combination of inherent tendencies (person) and the influence of environmental characteristics (situation). Situational influences such as perceived threat (Endler, 1997), cultural experiences (Laher, 2007; Ward, Leong, & Low, 2004), and parenting style (Dadds & Salmon, 2003; Patterson, 1982) have all been found to affect personality and behavior outcomes. Observing individuals who share genetic predispositions and environmental experiences as compared to those who differ in one or both of these areas may reveal whether personal or situational factors are more predictive of evidence that certain traits exist.

One interesting approach to the situational factors associated with personality development is the idea of the *general consensual* versus *subjective* components of the situation (Saucier, Bel-Bahar, & Fernandez, 2007). In any given situation there are general facts that cannot be altered through subjective perception. If you were to assess an individual's personality traits as they existed in a sport setting, his/her perceptions about the details of the situation would not change the fact that it was a sport setting (consensual). However, if two different individuals were asked about the positive or negative atmosphere of the game, fans of the winning team would likely perceive a more positive situation than would an individual supporting the losing team (subjective). The positive and negative ratings are an example of "subjective situational knowledge" while the conclusion that the situation was related to a sport contest is defined as "general consensual knowledge" (Saucier et al).

Personal factors are those which are an innate part of the individual. These factors are expected to remain constant across situations, regardless of time, circumstance, age, or any other changing characteristic. On the other hand, situational factors are those that

are constantly changing and the changes provide an influence on the development of a person's feelings, tendencies and behaviors. Some researchers (e.g., Eley, Lichtenstein, & Moffatt, 2003) argue that genetics are a key factor in personality consistency while the influence of genetics on personality change is not as large. According to Loehlin (1992), both identical and fraternal twins as well as siblings provide opportunities to examine the personal (e.g., genetic) as well as situational elements (e.g., parenting style, social class, educational opportunities) which may reveal personality determinants.

In a study testing the genetic components of personality, Lensvelt-Mulders and Hetteema (2001) examined the person (P) by situation (S) interaction among fraternal and identical twins. They expected the influences of personal and situational components to alter the five dimensions of personality. The results showed that 69% of the variance in personality trait scores was explained by an interaction of personal and situational factors. The highest recorded variance accounted for by personal factors alone was 53%. This was for only the conscientiousness factor of the Big Five model. All other factors recorded a variance below 50% when considering personal factors alone. It would appear, based on the significant interaction, that both person and situation are components of personality. Exploring personality traits (e.g., perfectionism) in different situations, will promote further understanding of the relationship between personal dispositions and situational influences on behavior and sport performance.

In another study, Fleeson (2007) attempted to demonstrate the influence of state and situational perceptions on the personality traits of an individual. Though often considered to be either a result of the situational or the state, and not both, Fleeson argues that personality traits may be nothing more than an accumulation of personality states

occurring in different intensities across situations. Using hand-held electronic devices (a.k.a, palm pilots) college students recorded levels of extroversion, conscientiousness, and agreeableness several times a day for either 2 or 5 week intervals. Students were also asked to report on the situation accompanying their reported levels of the aforementioned personality traits. The situational ratings referred to characteristics of the previous half hour including the presence of others, the demands of the situation, how much control the individual had over the situation, and whether those around were pleasant. Changes in the three personality dimensions were assessed under different situational ratings. For instance, in the presence of more friendly company, levels of extroversion were an average of .67 points higher and the agreeableness ratings of participants also increased significantly ($p < .05$), though the exact point value of the increase was not reported. There was also a significant relationship between task orientation and agreeableness. If participants perceived the situation as more task-oriented, then agreeableness levels were lower on average. By contrast, conscientiousness levels increased as task orientation ratings increased. Based on these findings it can be concluded that the trait properties of the Big Five model may possess some state dependent qualities. As individuals encounter different situations, levels of the existing traits manifest themselves at different levels. It is important that researchers recognize the importance of not only the trait but situational and even state-like properties of personality characteristics.

Coping in Performance Settings: An Examination of Trait and Situational Properties

This section will review the concept of coping. This construct reflects both trait and situational properties in the general and sport psychology literature. Because the current study will explore the trait and situational characteristics of perfectionism, it is

important to show the process of studying such properties in other psychological constructs. Perfectionism and coping may share similarities in their trait and situational characteristics, as they already demonstrate similarities in the relationship with other psychological (e.g., self-esteem, depression) and behavioral (e.g., parenting style, performance quality) properties. Reviewing psychological concepts that have shown trait-situational properties, among other developmental similarities, in sport and exercise settings may provide evidence for the importance of the study as well as potential methods for assessing the trait and situational components in a sport setting.

Coping has been defined as “a process of constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands or conflicts appraised as taxing or exceeding one’s resources” (Lazarus & Folkman, 1984, p. 141). Coping has been studied from a variety of angles including the development of coping strategies (Skinner, Edge, Altman, & Sherwood, 2003), the use of problem or emotion-focused coping (Connor-Smith, Compas, Wadsworth, Thomsen, & Saltzman, 2000; Skinner et al.), and the dispositional (trait) and situational properties of the construct (Bouchard, Guillemette, & Landry-Leger, 2004; Carver & Scheier, 1994; Parkes, 1994).

Exploring the origins of the coping response in individuals is essential to the understanding of how coping resources develop as a part of cognitive and behavioral responses to stressful situations. Parental influence is of particular importance in the development of coping resources, as is also the case with the development of multiple personality constructs including perfectionism, which will be explored in later sections of this review. Ruchkin, Eisemann, and Hagglof (1999) studied coping style differences among delinquent and non-delinquent youth. Both groups of adolescents reported coping

styles and reflected upon perceived parenting style. The affect of parenting style and child rearing practices was significant in predicting youth coping style. Delinquent participants reported harsher discipline and higher levels of overprotective parenting. All participants, delinquent or not, reported a greater influence of maternal, as opposed to paternal, child rearing. The significant role of parenting style on both perfectionism and coping lends itself to a comparison of the two constructs, with respect to how they may affect the person's behavioral and psychological development.

Coping can be categorized on the basis of response characteristics, such as approach and avoidance coping mechanisms (Griffith, Dubow, & Ippolito, 2000; McCrea, 1992; Moos, 1984). An individual with an approach coping style confronts the stressor in an attempt to learn more about the situation and in turn alter the affect of the stressor on performance. By contrast, an avoidance style involves diverting efforts away from the stressor to avoid the negative consequences of the situation (poor performance, anxiety, uncertainty). Approach-avoidance coping has also been termed vigilant/non-vigilant, repression/sensitization, and denial/intrusion.

In addition to approach-avoidance characteristics, researchers have defined coping based on the nature of the response, for example, emotion or problem-focused (Compas, 1987; Lazarus & Folkman, 1984). Problem-focused coping directs efforts to the specific characteristics of the stressor or problem and attempts to reduce the negative effects of this problem. Emotion-focused coping, on the other hand, directs efforts at dealing with the emotional responses which result from the stressor. The effectiveness of problem-focused and emotion-focused coping is a function of the malleability of the situation; in other words, whether or not the individual perceives the situation as

changeable. If the individual perceives the event as susceptible to change, then a problem-focused technique may prove more beneficial. If the problem is not easily altered, the individual may be better served to focus on regulating the emotional response to the more permanent situation and make the most of it.

Coping research has focused primarily on the establishment of dispositional versus contextual (situational) aspects of the construct. The majority of research, until recently, considered coping style to be a trait construct. This dispositional characteristic of the coping construct is supported by the trait theory, meaning that regardless of the setting, an individual possessed a particular style with which they dealt with stressful circumstances (Averill & Rosenn, 1972; Leventhal, Suls, & Leventhal, 1993; Moos & Swindle, 1990). As research spread into other domains, including academics, social settings and more recently sport, the possibility that coping reactions may vary as a function of context has gained more attention (Anshel & Wells, 2000). Supporters of the dispositional and situational influences on coping style adopt a transactional viewpoint. The transactional theory posits that coping style is a function of both the person (e.g., trait, disposition, genetics) and the situation (e.g., environment, context, setting)

Research findings suggest that an individual may utilize different coping styles (e.g., approach or avoidance, emotional or problem-focused) depending on the characteristics of the situation (e.g., Folkman, 1992; McCrea, 1992). For example, Griffith, Dubow, and Ippolito (2000) studied the effects of different sources of stress on coping among adolescents in grades 7, 9, and 12. The importance of studying coping responses in adolescents has been demonstrated by a positive correlation between successful coping in childhood with successful coping in adulthood. Griffith et al.

explored responses to stressors from family, peers and school to determine if adolescents responded differently depending on the type of stressor. By examining subject responses across different types of stressors, a significant interaction of coping by situation was detected. Specifically, family stressors were dealt with by approach coping while peer stressors showed comparable use of approach and avoidance coping. Peer and school stressors were less indicative of avoidance coping than were family stressors. Thus, from these findings, one can suggest that adolescents may not have a dispositional coping response, but rather deal differently with situations depending on the origin of the stress and the perceived effectiveness of different coping responses.

To further support the trait by situation properties of the coping responses, a study by Cantanzaro, Wasch, Kirsch, and Mearns (2000) explored the dispositional and situational coping responses of individuals in response to stressful life events. Participants reported expectancies in their ability to deal with a stressful situation. Expectancies were correlated with dispositional and situational coping responses. In support of a situational component of the coping response, stressful events were significantly related to situational coping but showed no relationship with dispositional patterns of coping. Although dispositional and situational coping demonstrated some noted differences, similar to previous researchers, Cantanzaro et al. did conclude that situational and dispositional coping are predictive of one another.

Supporting the transactional theory of coping, Anshel, Williams, and Williams (2000) studied coping in a sport-specific context. With a participant population of over 600 U.S. and Australian athletes, the researchers examined the consistency of coping styles over a variety of stressful situations in competitive sport. The purpose of the study

was to explore the consistency with which athletes employed certain coping styles in different situations. All the stress events were related to sport. The results indicated that depending on the type of stressor, athletes reacted with different types of coping mechanisms. For instance, “dealing with a coach’s reprimands” and “responses to cheating from an opponent” resulted in different usage of coping styles among participants. Reprimands were dealt with by an approach-emotion style of coping a majority of the time, and cheating was dealt with by primarily emotion-focused coping. Other stressors did not vary between coping styles or showed responses from each of the four coping style. From these findings, it becomes apparent that in certain performance settings (e.g., competitive sport), individuals can vary in type of coping style dependent on the individual (trait) and type of the stressor (situational). This supports the transactional theory of coping styles.

The transactional theory explores the combined effects of of the person and the situation in determining the coping response. For example, Bouchard et al. (2004) examined the situational and dispositional qualities of coping as they are affected by personality traits and distress. The researchers studied over 200 university students, assessing trait and situational coping strategies, personality traits, appraisals, and distress. Trait and situational coping did show notable differences in relationships with appraisals and psychological distress suggesting the existence of a situational and dispositional component of the construct. However, trait coping was a significant predictor of the situational specific coping style employed in the face of a stressful situation. As a result, “situational coping is also related to trait coping, which confirms that individuals do not approach each coping context anew, but rather bring to bear a preferred set of coping

strategies that remains relatively stable across time and situations” (Bouchard et al., p. 233).

Mirroring the relationship of perfectionism and self-esteem, researchers have demonstrated the relationship that coping style and self-esteem are related and can affect physical performance (Baumeister, 1993; Lane, Jones, & Stevens, 2002). Self-esteem is indicative of a more internalized focus and an unstable self-perception. When confronted with a challenging situation, low self-esteem individuals doubt their ability to respond to the demands of the situation (Dodgson & Wood, 1998). Individuals with high levels of self-esteem tend to adopt a more problem focused coping style. Among a sample of elite youth tennis players, research showed that participants with high self esteem reported higher scores on the coping scales of seeking instrumental social support, planning and increasing effort (Lane et al.). Those with lower levels of self-esteem rely on disengagement and wishful thinking to cope with stressors. It is apparent through the vast similarities of the coping and perfectionism constructs that similar methods may be used to investigate the situational and dispositional properties of perfectionism in a sport setting.

Coping and perfectionism share noted similarities in the origin of development (e.g., parenting style), evidence of both trait and situational properties and the relationship to measures of self-worth. Thus, it seems that perfectionism should be examined in a way similar to coping research. One of the most important research correlates is the indication of a transactional model of coping. This model includes both trait and situational influences on the coping response. It is the goal of the current study to demonstrate a similar response of the perfectionism construct such that, in competitive

sport, different situational characteristics may manifest different levels and types of perfectionism tendencies. In order to justify the possibility that perfectionism and coping share similar response characteristics (e.g., trait and situational variation), it is also essential to explore the common sources of development among the two constructs. The influence of parents as well as the influence of self-perception sheds light on the development of these psychological constructs. With similarities in developmental aspects, it is probable that the same factors will reveal differences in how the constructs manifest themselves within individuals. For instance, the influence of parenting styles, parental expectations and goal orientations, as well as the influence of perceptions of self-worth and perceived ability may all play a role in psychological development. This has been demonstrated in the coping research. The present study will attempt to mimic these findings in perfectionism.

Definitions of Perfectionism: An Overview

From its Latin roots, the word perfection means “to complete or to finish” (Schultz & Schultz, 2001). Adler (1930), often called one of the fathers of personality theory, proposed that among the strongest motivators of behavior is striving toward perfection, or a need to feel complete. In an effort to combat feelings of inferiority which plague most people, this innate desire to perfect oneself is not out of arrogance, but rather, a sense of personal pride. Striving for perfection is a future-oriented task, not one based on past events, as other theorists (e.g., Freud) may argue. Hollender (1978) and Burns (1980) contend that a perfectionist is an individual whose life is spent constantly striving toward goals that are out of reach or even unreasonable. Further, a perfectionist

measures his or her self-worth in terms of external rewards and accomplishment rather than an intrinsic satisfaction.

While early definitions reflect primarily self-directed expectations, contemporary researchers expanded the definition to include the tendency to set excessively high expectations for the self and for others (Frost et al., 1990). Often, the resulting expectations are unrealistic and lead to a decline in performance quality. Early researchers of perfectionism characterized individuals as either perfectionists or non-perfectionists rather than placing individuals on a continuum reflecting a degree of perfectionism.

Researchers have attempted to define and label perfectionism as the positive and negative. Hamachek (1978) suggested that perhaps perfectionism was a continuous measure ranging from normal to neurotic, or what has been termed adaptive and maladaptive (Frost et al., 1990). Adaptive perfectionism, also referred to as normal, healthy, or functional perfectionism, is characteristic of individuals who find energy and joy in striving for high personal standards (Hamachek). Perfectionists categorized as maladaptive, also referred to as neurotic, unhealthy, or dysfunctional perfectionism, are unable to move past failures, dwelling on mistakes, and attributing failures to personal inadequacies. Dunkley, Blankstein, Mashab, and Grilo (2006) labeled the adaptive and maladaptive dimensions of perfectionism as personal standards (PS) perfectionism and evaluative concerns (EC) perfectionism. Researchers tend to agree “the setting of and striving for high standards is certainly not in and of itself pathological...the psychological problems associated with perfectionism are probably more closely associated with these critical evaluation tendencies” (Frost et al., 1990, p. 450). Both adaptive and maladaptive

dimensions of perfectionism are supported through research, with neither dimension providing more conclusive evidence of its effect on performance. Thus, researchers should continue to consider that both dimensions may exist.

A majority of perfectionism research has focused on the negative properties of the construct (Ashby & Rice, 2002; Frost et al., 1990; Haase & Prapavessis, 2004; Hewitt & Flett, 1991). For example, in early perfectionism research Burns (1980) and Pacht (1984) contended that perfectionism was detrimental to performance. Maladaptive perfectionism levels are higher in individuals with psychological disorders, specifically those with social anxieties and depressive tendencies (Alden, Bieling, & Wallace, 1994). Individuals who suffer from psychological disorders such as depression and social anxiety are often overly focused on the self, and engage in frequent self-evaluation. As a result of negative self-evaluation, these individuals often discount abilities and doubt the potential to meet expected outcomes. Maladaptive perfectionists do not adjust expectations as perceived levels of competence changes with the situation. Rather, they continue to strive for unrealistic expectations though they lack the resources to reach them. This discrepancy leaves maladaptive perfectionists constantly searching for enjoyment, excitement, and satisfaction with performance quality (Hamachek, 1978).

In opposition to those who define perfectionism as detrimental to performance, other theorists argue that perfectionism includes positive aspects that may benefit performance (Adler, 1973; Maslow, 1970). Specifically, perfectionism instills a “drive for performance...attention to detail and a commitment to keep going” (Roedell, 1984, p. 127). The normal perfectionist is able to adjust expectations as the situation permits, and does not internalize weaknesses and failures. In a study of gifted middle school students,

for example, normal perfectionists displayed high levels of belief in their ability, and defined success as hard work and positive striving (Schuler, 2000).

High standards and personal strivings can be characterized not only by the positive and negative behavioral implications, but also by the direction of these expectations. For example, theorists have categorized perfectionism as interpersonal and intrapersonal (Hewitt & Flett, 1991; Hewitt, Flett, & Ediger, 1995). The expectations of intrapersonal perfectionists' originate with, and are directed at the self. Thus, the drive to reach perfection is both self-referenced and self-imposed. This may lead to a personal blaming and self-directed disappointments. Intrapersonal perfectionists are characterized by internal conversations and dialogue related to their concern over mistakes, performance expectations and self-directed criticisms. In contrast, interpersonal perfectionists use others either as the subject of the expectations (other-oriented) or the source of the expectation (socially-prescribed) (Flett, Hewitt, Shapiro, & Rayman, 2001).

Interpersonal perfectionism may refer to a tendency to project high expectations upon others or by the need to please and be positively judged by external sources (Dunn, Gotwals, & Causgrove Dunn, 2005). Hill, McIntire, and Bacharach (1997) stated "Socially-prescribed and other-oriented perfectionism have also been associated with diverse interpersonal problems..." (p. 261). The other-oriented and/or socially prescribed perfectionist (Hewitt & Flett, 1991) may face social challenges (e.g., loneliness) and unsatisfying personal relationships as others can rarely live up to the standards expected (Enns & Cox, 2002).

A study by Flett et al. (2001) explored the association between interpersonal components of perfectionism and relationship behaviors. University students in dating

relationships completed self-report measures of multidimensional and self-presentation perfectionism, relationship beliefs, and global liking and loving. Participants who scored high on socially-prescribed perfectionism also reported more maladaptive relationship behaviors including lack of trust, insensitivity, and destructive responses. These and other self-defeating behaviors make social interaction difficult and may create barriers in performance settings when significant others (e.g. coaches and teammates) serve as an essential performance factor.

Perfectionism has been studied as a trait construct in most previous research (e.g., Anshel & Seipel, 2006; Hewitt & Flett, 1991; Sherry, Hewitt, Flett, Lee-Baggely, & Hall, 2007). As a trait, perfectionism is assumed to be consistent across time and situations. Hill et al. (1997) examined perfectionism dimensions as they related to the Big Five personality factors, all of which are trait dimensions. Participants completed the Multidimensional Perfectionism Scale (MPS) as well as the Big Five model of personality. Analyses indicated a positive relationship between dimensions of perfectionism and agreeableness, conscientiousness and neuroticism. Interpersonal dimensions of perfectionism were associated with more maladaptive components of the Big Five model including anger, depressive symptoms and a lack of modesty and agreeableness. By comparing and finding significant relationships with the personality traits of the Big Five model, the researchers support trait-like properties of perfectionism.

Further evidence of the trait properties of perfectionism are reported in studies of individuals with eating disorders. For example, Jones, Leung, and Harris (2007) demonstrated the trait characteristics of perfectionism by studying females suffering from eating disorders both before and after recovery. Female participants reported whether

they were currently suffering from an eating disorder, had recently recovered from an eating disorder or had never suffered from an eating disorder (control). Females who currently had an eating disorder or who had recovered demonstrated similar levels of perfectionism. Both eating disorder groups, regardless of whether the symptoms were currently present, significantly differed from the control group. Thus, perfectionism may remain a stable characteristic among individuals with eating disorders even after they have recovered from the challenges of the disorder. Whether the individual is engaged in physical, cognitive or social interaction, trait perfectionists will likely strive for excessive standards of performance quality. Trait perfectionists are unable to distinguish between situations, resulting in the same level of expectations regardless of situation.

Researchers (e.g., Mitchelson & Burns, 1998; Saboonchi & Lundh, 1999) have also studied perfectionism as a state construct in which perfectionism is expected to differ as a function of the situation. For example, Saboonchi and Lundh explored the state characteristics of perfectionism in two different non-sport settings: social encounter and problem solving. In each situation, the degree of priming as well as the existence of an external evaluator was manipulated to create the state situations. The response pattern for participants in the social situation reflected state-like characteristics, while on the achievement task perfectionism displayed greater dispositional qualities. Thus, the researchers contend that perfectionism levels may be more transferable in some situations than they are in others. Relevant to a sport setting is the conclusion that trait perfectionism was more predictive of state perfectionism in the achievement (problem-solving) situation than it was in the social situation. The inconsistency in findings between the achievement and social-based tasks warrants further exploration in sport

performance settings (Flett & Hewitt, 2002). The indication that perfectionism levels may differ depending on the situation has led to a demand for further research exploring the situational or state aspects of this construct (Flett & Hewitt; Rice & Mirzadeh, 2000; Saboonchi & Lundh).

Antecedents of Perfectionism in a General Context

Researchers have examined several factors that help explain the development of perfectionism in non-sport settings. Perhaps the most prominent factor is the person's family environment (Schuler, 2000; Speirs Neumeister & Finch, 2006). In a study of undergraduate students, for example, Rice, Ashby, and Preusser (1996) explored the relationship between parental relationships, perfectionism and self-esteem. Participants were characterized as either normal or neurotic perfectionists and reported on parental support, expectations, and demands. Neurotic perfectionists perceived higher demand and parental criticism than normal perfectionists. One particularly interesting finding was that parental expectations were a significant factor for both normal and neurotic perfectionists. Perhaps, parents who demonstrate perfectionist tendencies themselves, project high goals and expectations for their children in performance settings (Ablard & Parker, 1997; Elkind, 1981). In addition to expectations and demanding behaviors, parents' goal orientation may strongly influence the child's perfectionist tendencies. Goal orientation relates to the type of goals and expectations set for a performance task.

Goal orientation is traditionally defined as task-oriented or outcome-oriented. Task oriented individuals are concerned with the learning process, measure success based on personal improvement, and are often motivated by their personal drive to achieve. The outcome oriented individual focuses on winning over learning, defines success based on

making social comparisons, and strives for external rewards. Perhaps most predictable for displaying perfectionist tendencies are children of parents who are outcome-oriented, who pressure their children to extreme achievement standards, and are less concerned with the child's learning than they are winning (Ablard & Parker, 1997). In moderation, parental goals as well as involvement and support by significant others in achievement settings is beneficial to performance (Stevenson & Baker, 1987). Often, however, the result of parental pressure and a parent's high goals for the child results in reduced performance quality, at least in non-sport settings. The extent to which this process occurs in competitive sport is unknown.

Ablard and Parker (1997) explored the influence of parental goal orientation on perfectionism in gifted adolescents. The purpose of the study was to determine whether an outcome or learning goal orientation among parents was predictive of adaptive or maladaptive components of perfectionism in the children of these parents. Parental levels of perfectionism, in addition to goal orientation, were assessed. Children of these parents were assessed for level of perfectionism and classified as healthy (adaptive), unhealthy (maladaptive) or non-perfectionists. Among the significant findings was that "children of parents who adopted a performance goal exhibited a greater propensity for dysfunctional perfectionism..." (p. 662). Upon analysis of the children and their parent, it became apparent that parental goal orientation and types of goal setting was predictive of perfectionism among the children of these individuals. Almost twice as many of the children characterized as unhealthy perfectionists were the children of performance-focused parents. Thus, parents should become aware of the salient influence their goals

have on the development of adaptive and/or maladaptive perfectionism among their children.

How children *perceive* parental goal orientation may be of equal importance to the actual parental goal orientation (Schuler, 2000). For example, McArdle and Duda (2004) defined clusters of adolescents based on the child's *perception* of parental behaviors and motives. Group membership was predictive of perfectionism dimensions. A task-oriented, relaxed home environment was positively correlated with adaptive perfectionism dimensions such as high personal standards. These same environmental properties (task-oriented and relaxed) yielded a negative correlation with concern over mistakes and doubts about actions scales of the FMPS. On the other hand, the three groups of individuals who reported a perceived outcome/performance orientation demonstrated more maladaptive tendencies. If children perceive their parents' focus to be on winning (i.e., outcome-oriented), while the parents indicate a learning orientation, then the child's perception may influence performance striving, attributions of success, and satisfaction with performance.

In addition to goal orientation, parenting style may also affect the competitive behavioral and cognitive performance of adolescents. Baumrind (1971) developed a model of parenting styles, though it has since been amended (Maccoby & Martin, 1983). Parenting style is differentiated by level of demand and responsiveness of the parent. A parent with high levels of demand is characterized by high control, pressure to mature, and supervision. Responsiveness level refers to warmth and affection, acceptance, and involvement with the child's interests. Through a combination of these two factors, three parenting styles were defined: authoritarian, authoritative, and permissive. The

differences in each style lies in the varying levels of each of the components, demandingness and responsiveness.

To further demonstrate the likely role of parents in the development of perfectionism, several studies have explored the role of parenting style on the development of perfectionism (e.g., Kawamura, Frost, & Harmatz, 2002; Flett, Hewitt, & Singer, 1995; Speirs Neumeister & Finch, 2006). For instance, Flett et al. examined the relationship between parenting styles and negative perfectionism. Authoritarian and permissive styles were categorized as more detrimental to a child's development, while authoritative was characterized as adaptive. The researchers assessed perfectionism based on socially prescribed expectations stemming from parents. They found that male college students who reported harsh parenting styles, such as authoritarian, also demonstrated higher levels of negative perfectionism. Kawamura et al. measured perfectionism scores through internal application of expectations (e.g. self-oriented). They found that perceptions of authoritarian parenting correlated with higher doubts about actions and concern over mistakes perfectionism. Both of these studies were concerned with different sources of perfectionist tendencies though each study indicated a significant relationship between parenting style and perfectionism. These findings support the contention that parental expectations can manifest themselves in higher levels of perfectionism in children.

Some studies have shown differences in the effect of maternal and paternal parenting on perfectionism of their children. In one study, for instance, Speirs Neumeister and Finch (2006) found maternal parenting has a stronger influence on the attachment security of children than paternal parenting. Because perfectionism is affected by feelings

of security, maternal parenting is more indirectly related to perfectionism levels than is paternal parenting. Children who were more insecure in their attachment were more likely to display high levels of other-oriented and socially prescribed perfectionism. Boys and girls experienced different effects of parenting styles on feelings of security and perfectionism. Girls were more concerned with winning the approval of their parents than were boys. Girls were more concerned with meeting expectations and making mistakes which further affected parental approval (Speirs Neumeister et al.). The gender of the child and how same sex versus opposite sex parent-child interactions may alter the perfectionism-parenting relationship become apparent. Further examining the role of gender in the development of perfectionism among adolescents is warranted.

It is apparent that the development of perfectionism is strongly associated with childhood and adolescent experiences. Perfectionistic tendencies cultivated in childhood lead to changes in goal orientation, the person's criteria for defining success, and other motivational properties. It is feasible for parents to be instrumental in manifesting the adaptive dimensions of perfectionism (e.g., high standards, intrinsic motivation) by maintaining a task-focused goal orientation and providing high standards for success, yet portraying a supportive and affectionate parenting style. Accurately identifying children at risk for developing the maladaptive perfectionism can lead to less likelihood of depression and other mental illnesses and improve one's quality of life.

Measuring Perfectionism

Burns (1980), in early attempts to measure perfectionism considered it a one-dimensional construct. More recently, however, perfectionism has come to be accepted as multidimensional in nature. Research on perfectionism as a multidimensional construct

led to the development of two inventories, both called the Multidimensional Perfectionism Scale (MPS; Frost et al., 1990; Hewitt & Flett, 1991).

Frost et al.'s (1990) scale initially focused on the belief that perfectionistic thinking consists primarily of constantly striving for high standards of achievement. The authors also found, however, that individuals characterized as perfectionists also had a tendency to be overly concerned with mistakes, being evaluated in social setting by parents and significant others, being self-critical, and having a need for neatness and organization. Based on these findings, Frost and his colleagues defined the following six dimensions of perfectionism: concern over mistakes (CM), personal standards (PS), doubts about actions (DA), parental criticism (PC), parental expectation (PE), and organization (O). These six dimensions comprise the Frost's multidimensional perfectionism scale (FMPS).

Though it began as a 36-item scale (Frost et al., 1990), preliminary testing with the measure eliminated one item as unrelated to the construct of perfectionism. Thus, the final inventory now includes 35-items. The items are scored on a Likert-type scale in which participants indicate their level of agreement with each statement ranging from *strongly agree (1)* to *strongly disagree (5)*. Sample items include, "I hate being less than best at things", "My parents set very high standards for me", and "I set higher goals than most people." Internal consistencies for the subscales of the FMPS range from .77 (DA) to .88 (CM). Construct validity has been established in comparison to Burn's (1980) Perfectionism Scale ($r = .85$) and the perfectionism subscale of the Eating Disorders Scale ($r = .59$) (Garner, Olmstead & Polivy, 1983).

The FMPS has become a widely used measure of perfectionism among personality researchers. The FMPS has been used to assess perfectionism in a variety of research studies ranging from academic success in college students (Bieling, Israeli, Smith, & Antony, 2003) to individuals struggling with social phobias (Juster et al., 1996). Numerous studies using Frost et al.'s (1990) scale have consistently categorized perfectionism according to two factors: personal strivings and critical evaluations. Typically, the personal strivings dimension, including PS and O, is considered the positive dimension of the construct (Stoeber, 1998) while the dimensions of PE, PC, CM, and DA are associated with the negative aspects of perfectionism and comprise the critical evaluations dimension of the construct.

In order to validate the structure and components of the measure, an exploration of the factor structure and the psychometric properties of the scale is essential. Several researchers have attempted to explore the factor structure of the FMPS (Frost et al., 1990; Harvey, Pallant, & Harvey, 2004; Parker & Adkins, 1995). In one such study, Stoeber (1998) found that the FMPS may be utilizing too many factors. Using a process called parallel analysis, Stoeber compared the actual findings of the factor analysis to a criterion referenced value for the factor structure. Results indicated that in most previous cases, the six factor structure may be more effective as a four or five factor scale. Other researchers (e.g., Purdon, Antony, & Swinson, 1999) have supported the conclusion of over-extraction, in some cases including as few as three factors from the original six-factor FMPS. The lack of explained variance on the last three factors resulted in a three-factor structure. Purdon et al. labeled these three factors, based on the nature of the items

loading on each of the factors, *fear of mistakes*, *perceived parental pressures*, and *goal achievement orientation*.

A more recent evaluation of the factor structure was consistent with Stoeber (1998), yielding a four factor model (Harvey et al., 2004). The resulting factors showed significant intercorrelations. Only the organization dimension yielded a coefficient value less than .4. The lower correlation coefficient for organization was not surprising, as similar conclusions were suggested in previous studies (Frost et al., 1990; Stoeber). The four factors in Harvey et al.'s study were labeled *negative projections*, *organization*, *parental influence*, and *achievement expectations*. Not only did the resulting factors correlate well with one another, they also yielded significant correlations with the original subscales of the FMPS. With the exception of a limited number of items, all the original inventory items, as well as the subscales, were strong measures of the dimensions of perfectionism.

A second scale used to measure perfectionism is the Multidimensional Perfectionism Scale (MPS; Hewitt & Flett, 1991). The MPS employs only three subscales in measuring perfectionism. These scales include self-oriented (SOP), other-oriented (OOP) and socially prescribed perfectionism (SPP). Self-oriented perfectionism describes individuals who set high expectations for themselves. Other-oriented perfectionism examines the projection of excessively high expectations upon others. Socially prescribed perfectionism explores the effect of others setting excessive expectations for the individual. The three subscales of the MPS reflect the source and direction of expectations (e.g., self or others) rather than the type of expectation (e.g., doubt, concern or personal expectation), as is the case with Frost et al.'s (1990) scale.

Self-oriented perfectionism is the only dimension characterized as intrapersonal. Some researchers would characterize SOP as a basic human striving. Demanding perfection and avoiding inferiority is a common desire among individuals with strong social needs. Unfortunately the innate desire to achieve self-prescribed demands may have both positive and negative components. Among the positive is a striving for success, the setting of goals, and strong intrinsic motivation. Negative components of intrapersonal perfectionism (e.g., self-oriented) include fear of failure, neuroticism and other pathologies. A study by Hewitt, Flett, and Ediger (1995) found that individuals characterized as SOP are more prone to depression following a stressful life event than were those who did not score high on SOP. Kobori and Tanno (2005) explored the positive and negative aspects of SOP and found that SOP was associated with both positive and negative affect. The relationship was mediated by concern over mistakes, personal standards, and types of goals. Thus, under certain circumstances it is possible that self oriented perfectionism and its intrapersonal properties can be positive for behavior or negative.

Some researchers (e.g., Hewitt & Flett, 1991; Hewitt et al., 1995) define OOP and SPP as interpersonal factors. Individuals who are overly concerned with acquiring personal perfection (SOP), often project these same expectations upon those around them (OOP). This is a form of social dysfunction and has been associated with perfectionism, narcissism, and feelings of entitlement (Hewitt & Flett). Those who score high on SPP tend to be concerned with the judgment and expectations of others. This interpersonal dimension of perfectionism has been positively correlated with social disorders such as borderline personality and schizophrenia (Hewitt & Flett).

Though the FMPS and MPS are commonly used measurement inventories, other measures have been developed and used to measure perfectionism. These include the Almost Perfect Scale (APS) and several revised versions (APS-R; Slaney, Mobley, Trippi, Ashby, & Johnson, 1996; Slaney, Rice, Mobley, Trippi, & Ashby, 2001). Order, discrepancy, and high standards comprise the three subscales of the Slaney et al. inventory. The discrepancy dimension of the APS-R has been shown to be important in the categorization of perfectionists as adaptive or maladaptive (LoCicero & Ashby, 2000). For example, in a cluster analysis of a sample of university students, discrepancy scores were the most telling in characterizing participants as adaptive or maladaptive in their levels of perfectionism (Rice & Slaney, 2002). Maladaptive perfectionists displayed excessively high standards despite their perception that they lacked the ability to meet such standards. For adaptive perfectionists, prescribed expectations by themselves and others were high, yet they avoided self-criticism when ability did not match these expectations. For high perfectionists, not meeting expectations is admitting that there is a discrepancy between their perceived level of ability (consistent with expectations) and their actual ability (Schuler, 2000).

Suddarth and Slaney (2001) found that all three inventories, the MPS, FMPS and APS, yielded high correlations between their respective subscales. Specifically, the personal standards scales from the FMPS, the self and other oriented scales from the MPS, and the high standards scale of the APS-revised are all categorized as adaptive dimensions. Within the same analysis, Frost et al's (1990) concern over mistakes, doubts about actions, parental expectations, and parental criticisms, Hewitt and Flett's (1991) socially prescribed dimension, and the discrepancy scales of the APS-R each reflect a

maladaptive factor. The final factor included organization (FMPS) and the order scale of the APS-R.

Athletes' in many sports have concerns over body image and weight as well as a tendency toward disordered eating. These concerns among competitive athletes may have helped to promote the development of the Perfectionistic Self-Presentation Scale (Hewitt et al, 2003). Before the development of this scale a good deal of research concerning self-presentation in sport was evaluated using the perfectionism subscale of the Eating Disorder Inventory (EDI; Garner et al., 1983). The Self-Presentation Scale evaluates one's tendency toward a drive for perfection of the physical self. Individual's scoring high on this scale attempt to reach standards of social physique and body image that are perceived by the person as flawless. Continuously striving to meet these standards of physical perfection, which are often unrealistic, increases the risk for eating disorders and overtraining, especially among female competitors (McLauren, Gauvin, & White, 2001). Self-presentation perfectionism is especially prevalent in sports such as gymnastics, swimming, diving, dance, and running. These sports have an aesthetic component and leave participants striving to maintain a certain body type and weight standard. The emphasis of these sports on social approval (e.g., judging) and physical perfection (e.g., points awarded for style and technique) suggests a possible strong relationship between perfectionism and self-presentation (Flett & Hewitt, 2005).

In recent years, researchers have attempted to validate a sport perfectionism inventory. For example, Dunn et al. (2006) generated the Sport Multidimensional Sport (Sport-MPS). This inventory was based on the already established multidimensional inventories of Frost et al. (1990) and Hewitt and Flett (1991). Based on factor analysis,

the Sport-MPS includes subscales called personal standards, concern over mistakes, perceived parental pressure, and perceived coach pressure. One subscale which was omitted from the Sport- MPS but was included in one exercise study, is order and organization. In their study of college student exercisers, Anshel and Seipel (2006) found that the organization subscale of the MPS was a significant contributor in predicting exercise behavior and adherence. Specifically, those who planned and set a regular exercise schedule were more likely to adhere to their routine. This may be an important dimension in the future assessment of perfectionism, at least in an exercise setting.

Perfectionism and the Gifted

Perfectionism among academically gifted students has received considerable attention among researchers (Ablard & Parker, 1997; Schuler, 2000; Spiers Neumeister & Finch, 2006). Early non-sport perfectionism studies assessed academically gifted individuals (Hollingsworth, 1923). Roberts and Lovett (1994) and Orange (1997) found that gifted students displayed higher levels of perfectionism than non-gifted peers. Junior high school students who were characterized as perfectionists in academic settings often transferred these tendencies to other areas of their lives (Roberts & Lovett).

Academic settings share many performance characteristics with competitive sport. Perfectionism is typically considered to be a construct indicative of individuals in highly competitive performance settings. Among these similarities is the pressure to succeed, the prevalence of social comparison, as well as the motivation to achieve a certain performance standard set by others (e.g., parents, teachers, coaches). For these reasons, academic research has helped drive the current trend of research on perfectionism on sport. According to Cassidy and Conroy (2006), 25% of adolescents' time is spent

performing either academic or sport-related tasks. Academics and sports are domains in which children are focused on skill development, levels of competence and both intra- and interpersonal evaluation (Grusec, 2002). Given the common performance-related and developmentally significant characteristics of academic and sport settings, results of the influence of perfectionism in academic settings has implications for exploring perfectionism in sport.

Perfectionism in Sport and Exercise Settings

Until recently, the study of perfectionism in sport and exercise has been relatively scant. Flett and Hewitt (2005), in a review of perfectionism in sport and exercise, argue that perfectionism in sport is a paradoxical issue. By this, the authors contend that in order to succeed, competitive athletes are often pressured and required to be virtually “perfect,” yet continued striving for success at unattainable levels often leads to self-defeat, frustration, and pessimism.

An early study in the sport perfectionism research literature by Frost and Henderson (1991) focused on how athletes dealt with mistakes during sport performance. High levels of concern over mistakes (CM) perfectionism yielded a positive relationship with social concerns about making mistakes. Athletes who were high CM perfectionists worried about not meeting the expectations of others and letting the team down. Athletes who reported high levels of this dimension of perfectionism were plagued by pressures to overcome past mistakes and images of the mistake throughout the competition. Frost and Henderson also found that athletes who were overly concerned with mistakes had higher levels of competitive anxiety. In the same study, perfectionism characterized by doubts about actions was negatively related to confidence.

Zinsser, Bunker, and Williams (2001) examined the ways in which perfectionism affects an athlete's response to failure and overall enjoyment of sport participation. The researchers concluded that the effects of blame, self-critical attitudes and inability to feel satisfied with performance quality can lead to a decrease in sport enjoyment and eventual discontinuation of participation. By dwelling on past mistakes, a persistent fear of failure may take the focus off the immediate task and distract the athlete resulting in decreased performance.

The prevalence of self-critical evaluations among perfectionist athletes was examined by Anshel and Mansouri (2005). In their study of male college athletes, the researchers found that higher levels of perfectionism, specifically doubts about actions, concern over mistakes, and personal standards, were predictive of lower quality of motor performance after receiving negative feedback. Apparently, athletes who displayed a tendency to dwell on mistakes and doubted actions were more likely to internalize criticism and assume lack of ability and personal shortcomings. The athlete's attributed the negative feedback to these factors. One implication of this study is that perfectionists who are self-critical and doubt the ability to perform may suffer more from negative feedback than those who are not as perfectionistic.

While self-criticism may be a detrimental component of the perfectionism-performance relationship, a study conducted by Stoll, Lau, and Stoeber (in press) suggest that there is a dimension of perfectionism which benefits performance. This dimension is called striving for perfection. The study included 122 young adults who were instructed and trained to perform a novel basketball task. Prior to performing the task the participants completed a measure of perfectionism during sport training. Participants

were measured on levels of *striving for perfection* as well as *negative reactions to imperfection*. There was a strong correlation between scores on the two subscales such that participants who strive for perfection in performance are also more likely to be upset when they do not reach expected performance standards. Results indicated that individuals who scored higher on measures of *striving for perfection* were more likely to show improvements in performance over the task trials. Though negative reactions to imperfection alone did not result in performance decrements, results did indicate an interaction with striving for perfection. When an individual both strives for perfection and responds negatively to imperfection, performance shows the most significant increase. From these results it becomes apparent that the relationship between perfectionism and performance is complex, in some cases perfectionism may increase performance quality while in the presence of other factors (e.g., avoiding imperfection) may lead to a decline in performance.

Similar to findings in academic settings, perfectionism in sport has also been linked to athletes' goal orientation. Hall, Kerr, and Matthews (1998) were among the first researchers to assess the relationship between goal orientation and perfectionism among athletes. They found that high school athletes with a high ego orientation, characterized by perception of success as determined by outperforming others, had higher perfectionism scores. In a more recent study that expanded upon Hall et al.'s findings, McArdle and Duda (2004) examined the relationship between parental goal orientation and children's levels of perfectionism. The researchers clustered youth athletes based on self-reported perceptions of parental goal orientations. Clusters were defined by the athlete's perceived parental emphasis on ego or task orientation, and also on the family

environment categorized as structured or flexible. Cluster membership was found to be positively correlated with levels of perfectionism. Specifically, perceptions of parental task orientation were correlated with higher concerns over mistakes and doubts about actions for both maladaptive perfectionism dimensions. One implication of these results is that parents should be aware of the effects of their expectations and goal setting tendencies as they may affect the child's performance and levels of perfectionistic tendencies.

Parents and coaches have been identified as significant sources of perfectionism among athletes (Gotwals, Dunn, & Wayment, 2003; McArdle & Duda, 2004; Ommundsen, Roberts, Lemyre, & Miller, 2005). For example, parental expectations and criticisms have been related to lower self-esteem of their children, more difficulty for children to develop peer relationships among teammates, and less satisfaction in assessing the quality of their own performance (Gotwals et al.). For coaches, Dunn, Gotwals, Causgrove Dunn, and Syrotuik (2006) found a strong, positive correlation between the perceived coach pressure subscale and the well-established socially prescribed perfectionism subscale of Hewitt and Flett's (1991) MPS. Dunn et al. contend that coach pressure may be more important in developing perfectionism among athletes than parents because, in sport, the coach may have a more direct influence than parents in the performance environment.

Similar to the influence of coaches and parents on sport performance, peer relationships provide another social factor that help to explain sport performance, continued participation, and enjoyment of the competitive experience among adolescents (Craft et al., 2003; Wu, Pender, & Nouredine, 2003). Perfectionism may play a role in

the quality of peer relationships in adolescent athletes. For example, Ommundsen et al. (2005) found that goal orientations, achievement behavior, and perfectionism were strong predictors of peer relationships in youth soccer for girls and boys. Specifically, both boys and girls with a strong mastery and moderate task orientation, and low levels of maladaptive perfectionism demonstrated stronger peer relationships. Perhaps lower levels of maladaptive perfectionism contributes to less concern with making mistakes, lower parental expectations and pressure, and thus attention toward developing relationships and communication ability may become easier. The resulting increase in effective peer relationships directly affects the overall interest and enjoyment of young athletes on participating in sport, which may in turn improve performance.

Perfectionism and Self-Worth: An Exploration of Self-Esteem, Self-Efficacy, and Perceived Competence

This section reviews the correlates and predictors of self-esteem and how they relate to perfectionism, self efficacy and perceived competence in non-sport and sport settings. To explore self-esteem without exploring the concept of self-efficacy would be to ignore the potential dispositional and situational components of self-worth concepts. The present study is aimed at determining the dispositional and situational aspects of the perfectionism construct making this component of the self-worth an essential topic for this review. Further, the similarities between perceived competence and self-esteem warrant the investigation into the relationship between self-esteem and perfectionism in the general and sport psychology literature. In doing so it is possible to draw upon past research in an attempt to study the relationship of perfectionism to perceived competence

in sport. Perhaps different levels of perceived competence will provide a situation in which perfectionism levels may differ.

Self-esteem has been defined in previous research as an “evaluation which the individual makes and customarily maintains with regard to him/herself that expresses an attitude of approval or disapproval and indicates the extent to which the individual believes himself to be capable, successful, significant and worthy” (Furnham & Cheng, 2000). Researchers have considered self-esteem to be a global, trait-like measure of self worth (Cassidy & Conroy, 2006). Individuals with high self-esteem have historically been linked to higher quality of life, greater happiness, and more adaptive psychological functioning (Furnham & Cheng). In addition, individuals with high self-esteem tend to possess more effective coping strategies for dealing with failure and are more likely to maintain positive self-perceptions than those with low levels of self-esteem (DiPaula & Campbell, 2002). Self-esteem may develop from several sources, none of which is as influential as the parents.

External sources are among the most influential as to the development of self-esteem among adolescents. The most prevalent role model(s) for a child during early developmental years are parents. Children draw upon the actions and evaluations of significant others in their physical environment, and no one component is more salient for a young child than his/her parent(s) (Mead, 1934). Often a child’s self-evaluation of his or her ability is based not on actual performance outcomes, but rather the resulting evaluation of a parent (Eccles-Parsons, Adler, & Kaczala, 1982). This is true for both athletic and academic abilities (Manis, 1958). In addition to evaluation and parental perceptions, the level of interaction and support of parents yields positive correlations

with children's self esteem. In a study of youth athletes, Cassidy and Conroy (2006) found maternal involvement was a significant predictor of self-esteem. Children rely on parents' actions for reassurance and confidence building. If a parent is involved and interested in the child's sport experience this may provide an indication to the child that the parent believes in their ability and feels that sport participation is worthwhile.

As self-esteem develops in early childhood, perceptions of self-worth and ability affect other aspects of the child's psychological and physical functioning. When confronted with stressful or difficult situations, individuals with higher levels of self esteem tend to view the situation as controllable, and externalize failures (Lane, et al., 2002). These individuals tend to embrace the positive effects of the challenge, while dismissing the potential negative consequences of the potential failure (Brown & Dutton, 1995; Brown & Mankowski, 1993).

Though parents and significant others are a vital factor in the prediction of perfectionism among individuals, there is no greater influence on behavior than the athlete's personal beliefs and expectations. Self-esteem is a widely accepted measure of belief in one's ability and levels of self-worth. Because perfectionism is directly related to personal expectations and beliefs in the ability to meet high standards, the study of the relationship between self-esteem and perfectionism has received attention by researchers (e.g., Ashby & Rice, 2002; Burns, 1980; Sorotzkin, 1985). The results of these studies have indicated a strong negative correlation between self-esteem and perfectionism. In particular, higher levels of perfectionism have been related to lower levels of self esteem. In one study, for example, Ashby and Rice examined a sample of undergraduate university students and found that both discrepancy and self-standards measures of

perfectionism significantly predicted self-esteem. Consistent with previous evidence, both discrepancy and self criticism forms of maladaptive perfectionism were correlated with lower self esteem. In the same study, adaptive measures of perfectionism (high standards) showed a positive relationship with self-esteem. Thus, regardless of the adaptive or maladaptive direction of perfectionism, the relationship between the construct and individual levels of self-esteem suggests that levels of perfectionism is a significant factor in determining perceptions of self-worth in the form of self-esteem.

In order to protect self esteem, perfectionists may engage in what researchers have termed self-handicapping. Through this process, standards are set lower in order to avoid failure. Other sources of self-handicapping include acquired and claimed self handicaps to which they can attribute possible performance failures. Men and women tend to differ in the types and levels of self-handicaps they employ during performance situations. Men who scored high on measures of self-oriented perfectionism (SOP) were more likely to choose music that would interfere with performance (acquired self handicap) than were low SOP men (Doebler, Schick, Beck, & Astor-Stetson, 2000). Women's use of self-handicaps are more inconsistent. In some studies, women scoring high on perfectionism were more likely to employ a claimed self handicap (mood or distraction) (Baumgardner, Lake, & Arkin, 1985), while other research shows no difference between high and low SOP women (Doebler et al.).

Self-esteem has also been examined as it reflects performance quality in sport. Gotwals et al. (2003) showed a significant relationship between self-esteem levels and perfectionism among collegiate athletes. They measured not only global self-esteem (the dispositional feelings of self-worth and ability), but also self-esteem in a sport-specific

setting. In both cases, dimensions of perfectionism were related to higher self-esteem scores (Gotwals et al.). Self-esteem is related to an individual's perception of skill and ability to achieve success in a particular setting. For some, success is based on the ability to present to others a flawless self.

Self-esteem is related to an individual's feelings of self-worth on a more global level while other measures of self-worth may demonstrate a more situational component. According to Bandura's (1997) social cognitive theory, one of the key components in predicting a person's behavior in a variety of performance and motivational settings is his/her level of confidence in performing a situation-specific task. A person's perceived level of ability is traditionally defined as self-efficacy. Self-efficacy is the perception or belief in one's ability to perform a task successfully; in other words, a person's perceived competence to complete a task. While self-esteem and self-conception are more global measures of ability, self-efficacy is a more task-specific measure of confidence. Self-efficacy has been measured as to its effect on coping, enjoyment and adherence in sport and exercise settings (Tenenbaum et al., 2005). In all cases, self-efficacy has demonstrated significant relationships with these variables such that higher self-efficacy is a facilitative psychological component. Similar to self-efficacy, perceived competence is a more situational measure of self-worth related to the perception of ability on a given task.

Sonstroem, Harlow, Gemma, and Osborne (1991) have defined perceived competence as a person's sense of control over and ability to master the self and environment. The concept of perceived competence has been used interchangeably with self-esteem (Gotwals et al., 2003), self-efficacy (Tenenbaum et al., 2005), and self-

confidence. Nicholls (1989) identifies the importance of perceived competence in mediating the effect of goal orientation on performance. Within sport, perceived competence has been found to directly affect the type of goal orientation an individual adopts (Ntoumanis, 2001; Standage, Duda, & Ntoumanis, 2003). Specifically, the researchers found that higher levels of PC were correlated with a task orientation.

One of the most consistent research findings regarding perceived competence is the effect on motivational behaviors in the goal achievement and self determination frameworks (Deci & Ryan, 1985; Nicholls, 1989; Ntoumanis, 2001). Studies in sport settings show that perceived competence mediates the relationship between goal orientation (ego or task) and general self-evaluation all of which are instrumental in predicting motivation. For example, Treasure (1997) studied the relationship between goal orientation and self-worth and how the relationship differed as a result of perceived ability. They found that perceived ability was a strong mediator in the relationship between ego oriented individuals and feelings of self worth. In another study, Hein and Haggart (2007) examined the relationship between goal orientation and self-esteem among adolescent physical education students. The researchers found that both ego and task goal orientations accounted for 60% of the variance in global self-esteem. They further concluded that motivation, specifically the drive for autonomy, serves as a mediator in the relationship between goal orientation and self-worth in a physical activity environment. The results of both studies support the contention that achievement goals are important in the development of self-worth, perceived ability and overall behavior motivation in sport and exercise environments.

Theories of Sport Motivation and Goal Orientation

Self-determination theory. In their self-determination theory, Deci and Ryan (1985) attempted to explain the motivational patterns of individuals in performance settings. According to the theory, behaviors are driven by a person's need to feel autonomy (i.e., feelings of personal control/determination), relatedness (i.e., feelings of connection with others) and competency (i.e., feelings of ability and skill) in performing a task. A coach's philosophy, the characteristics of the activity or the climate may all lead to higher levels of autonomy. In a performance setting, teammates, peers and opponents may serve to satisfy this need. The third factor is competence. Competence is the extent to which an individual feels they can effectively complete a task. In a non-sport setting, Leonardi and Gialamas (2002) demonstrated that a child's perception of ability was predictive of academic achievement. Competence is defined as meeting a self-determined standard, outperforming an opponent, or simply winning the contest. How the individual defines, or perceives competence will ultimately determine if the experience satisfied this need. Self-determination theory has implications for task adherence.

If the behavior or task does not satisfy any of these three innate needs, the individual is less likely to be motivated to maintain performing the task. If, however, the task is successful in leading to greater feelings of autonomy, relatedness, and competence, the individual will more than likely continue to engage in the activity. An individual who has a high sense of control over activity choice, has a strong social network related to the activity and has perceived high ability will likely enjoy the activity and want to continue performing the task. Thus, the components of self-determination theory are essential to defining an individual's motivation to adhere to a sport behavior.

Deci and Ryan (1985) defined motivation as a continuous construct. On one end of the spectrum is amotivation, a state in which the individual is not at all interested in the task. On the opposing end of the continuum is intrinsic motivation, which is characterized by the highest level of self-determination and internal drive. Between these two extremes lies extrinsic motivation, which can be further divided into integrated, identified, introjected and external components based on the level of internal regulation and reward-driven focus. Extrinsically motivated individuals are more likely to feel entrapped and controlled by their activity. In addition, they compete for the end result rather than for the love of competition (Ntoumanis, 2001).

Achievement goal theory. A more complex categorization of achievement goal orientations is to consider both approach and avoidance goals (Atkinson, 1957). Approach goals can be further divided into *task* or *performance* dispositions. A *task* orientation, also called mastery or learning, is considered to be solely an approach goal orientation. A *task* orientation is defined as striving to develop or approach one's highest performance potential. A *performance-approach* orientation, also termed ego or outcome, is one in which an individual strives to prove ability or to *approach* victory over an opponent (Speirs Neumeister, & Finch, 2006). A *performance-avoidance* orientation refers to an attempt by the individual to avoid not meeting expectations in a competitive setting (Leondari & Gialamas, 2002). *Performance-avoidance* is characterized by a motivation to avoid negative assessment and negative perceptions of one's ability to perform a task.

Research on goal orientation and motivation relies of the theoretical framework of the achievement goal theory (Nicholls, 1989), an extension of the self-determination

theory (Deci & Ryan, 1985) to explain motivation. Achievement goals define the purpose for which an individual participates in a task. According to achievement goal theory, individuals adopt either a mastery or ego goal orientation. A mastery orientation focuses on personal improvement, learning and development of skills. An ego orientation, on the other hand, is more concerned with performance levels in comparison with others. An ego oriented climate emphasizes winning and outperforming others, regardless of personal improvement. Ego oriented persons typically set outcome focused goals.

The results of research on goal orientation suggest that an individual may possess levels of both mastery and ego orientations, not simply one or the other (Middleton & Midgely, 1997). In one sport study, Harwood, Cumming, and Hall (2003) categorized elite youth athletes according to their reported levels of ego and mastery orientations. They labeled individuals as *higher task/higher ego*, *moderate task/lower ego* and *lower task/moderate ego*. Hence it appears that goal orientation is more complex than merely a dichotomy, but may be a multidimensional construct.

Researchers in the achievement orientation literature related task goals with adaptive psychological processes and greater performance quality (Ames, 1992; Leondari & Gialamas, 2002; Pintrich & De Groot, 1990; Pollio & Beck, 2000). When the competitive environment is characterized as task-oriented then the focus of the individuals directly involved in the environment (e.g., coaches, teachers, students, athletes) is on the development of the individual and on learning rather than winning. In an academic setting, Meece, Blumenfield, and Hoyle (1988) found that students who adopted a mastery goal orientation and whose teachers created learning climates rather than outcome based climates, demonstrated higher levels of achievement than students in

an outcome oriented climate. In another study, students involved in an elementary running program performed highest when the motivational climate was perceived as mastery focused (Xiang, Bruene, & McBride, 2004). Thus, the influence of goal orientation on a person's adherence to sport and exercise programs is essential in promoting physical activity among youth, adolescence, and into adulthood. When the influence of the instructor on motivational climate is not consistent over time, effects on performance and attitude are altered, as well. The relationship between instructor influence and perceived climate supports the influence of teachers on motivational goal orientations. Results of studies in this area vary as a function of the type of orientation. Mastery climates that emphasize learning have been shown to promote success, satisfaction, and continued participation among youth sport participants (Pappaioannou, Bebetos, Theodorakis, Christodoulidis, & Kouli, 2006). Pappaioannou et al. showed that an ego orientation was unrelated to sport and exercise involvement.

Several factors may influence the nature of the motivational climate such as league structure, parents, coaches and others who possess a leadership role serve to mold the motivational climate (Ames, 1992; Deemer & Hanich, 2005). Ryska and Yin (1999) studied the role of goal orientations and motivational climates on self-handicapping and self-evaluation. They found that motivational climate and the use of comparison-based assessment practices, which are characteristic of ego-orientations, led to negative self-evaluation and self-handicapping among youth athletes. It is not uncommon for individuals to perceive the same setting as having a different motivational climate. Often a coaches' perception and an athlete's perception of the climate may differ. For example, Rasclé, Coulomb-Cabagno, and Delsarte (2005) examined how the perceived

motivational climate of players and coaches differed as level of competition became more intense. Among low level competitors, athletes tended to perceive a more performance-oriented climate than did their coaches. Coaches, parents and other significant evaluators (e.g., judges, spectators, scouts) should define expectations and assessment practices so athletes know what is required for success on a particular task.

As the effects of mental functioning on sport performance become apparent, the need for further investigation into the specific effects of psychological constructs and sport seems warranted. In particular, the influence of athlete's feelings of personal self-worth, especially in sport specific situations may lead to performance enhancement, or perhaps decline. Understanding the situational properties and the resulting mental components leading to such performance affects is essential for improving the sport psychology literature and thus the application of psychological skills training among athlete populations. If, through research, it can be revealed what may lead to perfectionistic thinking, the situations in which perfectionism tend to manifest themselves, and the dimensions of perfectionism which have a positive and negative performance affect, then athletes, coaches and practicing sport psychology professionals may be able to combat the negative influences, and accentuate the positive performance effects.

Perceived competence, the situational measure of self-worth to be manipulated in the present study, will provide a component of self worth by which to measure the differing effects of perceived ability on perfectionism tendencies. Through this situational manipulation, it will become apparent how perfectionism may change, or remain constant in different types of sport settings, and whether an individual's self-worth has an effect

on the types of standards, expectations and strivings for perfection result. Until we can pinpoint the correlates by which psychological constructs increase and become problematic they will continue to perplex and in some cases, inhibit sport performers.

CHAPTER III

METHODOLOGY

Participants

This study included both high school (juniors and seniors) and collegiate level athletes. A total of 239 student-athletes were selected from a variety of sports including: baseball, softball, track/cross country, tennis, basketball, soccer and swimming. Student-athletes were accessed through convenience sampling from six different institutions, secondary and higher education. Males comprised 54.6% of the sample. The age range of participants was 16-25 years ($M = 19.26$, $SD = 1.72$). All participants were currently involved in one or more competitive sports. All students were currently enrolled in educational institutions in the southeastern United States. Team and individual sport athletes were included. Institutional Review Board approval was granted and participant consent, and in the case of participants under the age of 18, parental assent, was secured for all participants prior to data collection. Appendices B and C include all consent and IRB approval documents.

Procedures

Perceived competence (PC) and perfectionism in sport were measured for all participants. The student-athletes completed two measures of PC and one measure of perfectionism in sport for each of two sport activities. Complete copies of each inventory can be found in Appendix A. The first activity was categorized as a high perceived competence (HPC) sport. Participants were prompted to complete the PC rating scale and the perfectionism in sport inventory while thinking about a sport in which they felt highly

competent; a sport they would describe as “their sport”. Each inventory was then completed in reference to that sport.

The second task was categorized as a low perceived competence (LPC) sport. After completion of the inventories in the HPC situation, participants were prompted to think of a sport activity they felt significantly less competent in when compared to the first situation. Participants were given the option of thinking of the same sport in previous years (e.g., freshman vs. senior year) or a different sport altogether (e.g., soccer vs. basketball). Participants recorded whether they were thinking of the same sport or a different sport. Each inventory was then completed in reference to the activity in which participants felt less competent. For the complete set of participant instructions see Appendix A.

Instrumentation

Perfectionism. Previous studies from the sport psychology literature (e.g., Anshel & Eom, 2003; Anshel & Seipel, 2006; Dunn, Causgrove Dunn, & Syrotuik, 2002; Gotwals et al., 2003; Haase & Prapavessis, 2004; Stoeber, 1998; Vallance, Dunn, & Causgrove Dunn, 2006) provided the primary sources of items for generating the current sport-related perfectionism inventory. Selected items used in this study were adapted from the Frost et al. (1990) FMPS to fit a sport framework and, as explained by Dunn et al., were “modified to make them contextually relevant” (p. 382). An initial inventory of 74 items was developed and the item responses consisted of a Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) inventory. See Appendix A for a complete copy of the inventory.

Two stages of analysis were conducted to reduce the number of items from 74 to the 36-item Likert-type scale used in this study. First, many of these ordinal-level items exhibited collinearity (Sheng, Biswas, & Carriere, 2003). For example, "I am a neat (tidy) person" is highly correlated to "I try to be a neat (tidy) person" ($r = .72$). Image extraction in SPSS version 14.0's exploratory factor analysis procedure reported that the amount of variance accounted for (the *R*-squared) between "I am a neat (tidy) person" and all other indicators is .77. Nineteen items were deleted to reduce collinearity.

SAS version 9.1 was then used to create a polychoric correlation matrix from the remaining 55 items. Polychoric correlations are preferred over Pearson correlations with data that are ordinal-level and that may be skewed (Lopez & Rice, 2006; Nunnally & Bernstein, 1994). Polychoric correlations tend to be larger in magnitude than Pearson product correlations (Sheng et al., 2003). Factor analysis on this matrix revealed high levels of collinearity. Nineteen additional indicators were deleted from the pool of items, resulting in a set of 36 items that measured perfectionism in sport. Finally, an initial IRT analysis indicated one misfit item based on the infit and outfit statistics of the Rasch modeling process. This item was excluded from the final analysis leaving 35 total items (Anshel et al., in press).

Consistent with the previous related literature, items were selected under the assumption there were several underlying dimensions of perfectionism. When collinear items were removed, these dimensions were related to each other to the point that it may be hypothesized that the items represent one higher-order factor structure (Flora, Finkel, & Foshee, 2003), in this study, a unidimensional concept of perfectionism.

Participants reported gender, age, level of competition (high school/community, state, and college), and type of sport (team or individual) at the end of the perfectionism in sport inventory. These items are included in Appendix A at the conclusion of the Sport Competitor Inventory.

Perceived competence. Participants completed the activity rating scale in which they rated the HPC and LPC sport activity on a scale of 1 (*very low*) to 5 (*very high*). This served as one measure of PC (see Appendix A).

Perceived athletic competence was also assessed using the PC rating scale of McAuley, Duncan and Tammen's (1989) Intrinsic Motivation Inventory (IMI). This 6-item scale has been used in previous research with athletes (Goudas & Biddle, 1994; Vlachopoulos & Biddle, 1997) and is a sport-specific adaptation of the original IMI (Ryan, Mims, & Koestner, 1983). The items originally pertained to a basketball-related task but have been modified for a variety of sport-related studies (Ntoumanis, 2001). Items are presented with a Likert scale format ranging from 1 (*strongly agree*) to 7 (*strongly disagree*). Alpha values ranging from .81 to .84 have been reported (McAuley, et al., 1989; Ntoumanis, 2001). In studies with similarly aged participants in both the U.S. and the United Kingdom, acceptable reliability has been reported (Standage et al., 2003).

Data Analysis

Initially, data were examined for any missing and/or invalid cases. Based on frequencies and means, participants with missing data were identified. Of the original 244 participants tested, 239 were determined to be valid cases. The five participants excluded from the final analysis were the result of missing data and/or abnormal response patterns (e.g., all "1's") which were determined to be invalid.

Power. A priori power analysis was performed using the G*power 3.0.8 program (Faul, 2006). The program allows the researcher to specify the type of analysis that will be run as well as all known values needed to compute the power of the desired analysis. The following specifications were given: 1) within-subject multivariate general linear model, 2) effect size = .2, alpha level = .025, and expected power = .80. Based on these parameters, a sample size of 241 was suggested. This corresponds closely with the sample in the present study.

Experimental design. The design of this study was within-subjects based on the fact that all participants completed each inventory in both the high and low competence sport domain as opposed to having two groups of participants each randomly assigned to one of the two PC sport domains (Park & Schutz, 2006). There are suggested advantages to using a within-subject analysis. The most commonly cited benefit is the minimization of within group error attributable to individual differences (Thomas & Nelson, 2001). Unlike designs which test two different groups of participants or use a matched-pair sampling criteria, within-subject design guarantees that participants in each treatment are identical on a number of characteristics. Park and Schutz claim that in journals of sport and exercise, nearly half the studies relied on repeated measures or within subject analysis in examining data. It should be acknowledged that there are effects of testing, motivation, fatigue, and learning which can affect results of a within subject design (Christensen, 2004). The order in which inventories were completed was varied to reduce some such testing and learning effects.

Perfectionism, PC, level of competition and type of sport were all assessed twice to differentiate characteristics associated with the two sport domains. Perceived

competence served as a continuous independent variable, and was entered in the analysis as a covariate. It was important to control for PC so that the effects of the categorical variables could be identified. Level of competition (high school/community, state and college) and sport type (team and individual) served as categorical independent variables. Perfectionism, the dependent variable, was measured in both the high and low PC sport domains.

Preliminary analysis. Prior to any within or between group analysis, perfectionism scores and PC scores were transformed into logits¹ using Rasch modeling. The resulting logit value provided an interval level score for each participant and allowed for direct comparison between cases. The use of traditional methods through which average or total scores are used with ordinal level data is not always accurate. Logit scores were also used in correlation analysis to assess the convergent validity of the PC measure. Known-difference validity of the perfectionism in sport inventory is also examined. Both inventories will be discussed in Chapter IV under a section titled, *validity of instruments used*.

General linear modeling. A within-subject multivariate general linear model was analyzed to determine the extent to which PC, level of competition and type of sport were related to perfectionism in the high and low competence domains. For each set of dependent scores, residuals for the measures of perfectionism and PC were computed and saved. These values were used to check for normality of the sample.

¹ A logit score is a log-odds transformation of the probability of a response given to each person in a sample based on the ability of the participant and the difficulty of each response item to a measure (Rasch, 1960).

Tests included the K-S test, histogram plots, skewness and kurtosis values. In addition, Levene's test was used to evaluate the equality of variance for perfectionism between levels of the independent variables (e.g., level of competition and type of sport).

After the multivariate model was checked for significant interaction terms, the multivariate model was then divided into two univariate models for each measure of the dependent variable (e.g., high competence and low competence). Parameter estimates, in the form of unstandardized partial regression coefficients, were also explored through the multivariate and univariate testing to examine the amount of variance in perfectionism scores accounted for by PC, level of competition and type of sport. In the case of level of competition in the low competence domain, a follow-up (i.e., post hoc) regression model for each category of the independent variable (e.g., high school/community, state and college) was run to fully identify the location of the existing interaction. Results of the aforementioned analyses are discussed in the following chapter (Results).

CHAPTER IV

RESULTS

The focus of this dissertation was to examine the extent to which athletes' perfectionism scores were influenced by the situational component level of perceived competence (PC) displayed in a particular sport situation. The present study examined two sport domains characterized by the level of PC participants exhibited in relationship to that sport domain. The two sport domains (also referred to as sport situations) were defined as high and low PC. The nature of these situations was examined as they related with perfectionism, level of competition (i.e., high school/community, state and college) and sport type (i.e., individual or team) among competitive athletes at the high school and college level.

Data Transformations

The current study utilized Likert-type inventories to collect information about perfectionism and PC (see Appendix A). Perceived competence scores were collected using the researcher generated rating scale which uses a 5-point Likert scale, as well as the PC subscale of the IMI (McAuley et al., 1989). The IMI subscale uses a 7-point Likert scale. Perfectionism was assessed using a unidimensional measure of sport perfectionism. The 35 items used in the final analysis were selected based on factor analysis, polychoric correlations, and IRT methods. This is a newly developed inventory and has been used in previous studies which are currently under review for submission. Responses are given based on a 5-point Likert scale.

In most studies which use a Likert scale, participant responses are summed and/or averaged before completing the final analysis. However, Likert scales are in fact ordinal

which means that the ratio between each response option is not necessarily equal. If an individual responds to one item with a score of “1” and the next a “2”, this may not share the same value distance as that between a response of “2” and “3”. In order to conduct analysis on a Likert type of inventory, data transformation may be beneficial. Previous studies in the context of exercise and physical activity (e.g., Kang, Zhu, Ragan, & Frogley, 2007) have revealed the effectiveness of using the Rasch analysis (Rasch, 1960, 1980) to assess participant responses to Likert scale inventories. Through Rasch modeling the ordinal data were transformed into interval data, logit, in which parametric statistics can be applied.

The Rasch model and the use of logit scores allows for direct comparison between PC ratings and perfectionism levels in each of the two sport domains. Thus, person measures in the form of logit scores were calculated for perfectionism in the high competence ($M = .02$, $SD = .51$) and low competence ($M = -.07$, $SD = .58$) sport. Person measures were also calculated for high PC ($M = 1.87$, $SD = 2.25$) and low PC ($M = 1.00$, $SD = 2.46$).

Validity of Instruments Used

Prior to descriptive analysis or group comparison, the perfectionism inventory and the PC rating scales were examined for validity of use in the current study. In order to support the use of the unidimensional perfectionism inventory, known-difference validity was evaluated using results from a previous study employing the same unidimensional perfectionism inventory (Anshel et al., in press). Anshel et al. examined the variable of level of competition, as did the current study, and how perfectionism scores differed depending on the level of competition of participants. The results, using student-athletes,

found that participants at a higher level of competition (e.g., college or national) reported higher levels of perfectionism than did lower level student-athletes, $F(3, 314) = 5.21$, $p = .002$. In support of these findings, the current study also revealed an effect of level of competition on perfectionism scores in particular sport situations. In the high competence model, there were significant main effects for level of competition ($p = .027$) and type of sport ($p = .020$), regardless of PC scores. In the low competence domain, perfectionism scores varied based on level of competition ($p = .016$) when considering PC scores. The fact that level of competition demonstrated a relationship with perfectionism provides validity as to the ability of the unidimensional scale to differentiate among participants' level of perfectionism given situational differences in the sport setting.

Convergent validity of the PC scale was evaluated through an additional, researcher generated item which was included on the PC rating scale (see Appendix A). A Spearman correlation was run to determine if participant ratings of PC on the single item were consistent with logit scores generated from the 6-item PC subscale of the Intrinsic Motivation Inventory (IMI; McAuley et al., 1989). The single item yielded a moderate to high, positive correlation with scores on the IMI scale for both the high PC domain ($r = .67$) and the low PC domain ($r = .57$). The significant, positive relationship between the single item scores and the IMI logit scores provide convergent validity evidence for the PC subscale.

Descriptive Statistics

Frequencies and means were computed for all variables in the model. Participant response characteristics showed differences between the high and low competence situations (see Table 1). It was essential that participants were, in fact, responding to

inventory items under two different competitive situations, high and low PC. Means and frequencies showed differences between the two sport domains. When reporting level of sport competition, only two of the participants indicated participation at the community level under the high competence sport. For this reason, the levels of community and high school were combined into the same category, creating three categories for competition level.

Results for competition level in the high PC sport indicated that more participants (80%) reported competing at or *above* the high school level while in the low PC sport, the majority of participants (67%) reported competing at or *below* the high school level. These findings suggest a noted difference in the level of competition between the high and low PC domains.

Data on sport type indicated a high level of consistency between responses in the high and low competence domain. In both the high and low competence sport, approximately 77% of participants competed in team sports with the remaining 23% competing in individual sports.

Table 1

Participant Characteristics (N = 239)

Characteristic	<i>High Competence Sport</i>		<i>Low Competence Sport</i>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Age	19.26	1.72	19.26	1.72
Perfectionism	0.02	0.51	-0.07	0.58
Perceived Competence	1.88	2.35	-1.00	2.47
	<i>n</i>	<i>%</i>	<i>n</i>	<i>%</i>
<i>Sport Type</i>				
Team	186	77.82	186	77.82
Individual	53	22.17	53	22.17
<i>Competition Level</i>				
Community/High School	47	19.66	160	66.94
Regional/State	64	26.77	44	18.41
College	128	53.55	35	14.64

Correlation Analysis

Perfectionism. Intraclass correlations were computed using the Statistical Package for Social Sciences (SPSS) software. Resulting correlation coefficients were used to assess the differences in perfectionism scores in each of the two sport domains (high and low PC). In the social sciences, a correlation coefficient (r) of greater than .60 is considered significant (Thomas & Nelson, 2001). Anything below .50 is considered weak. Some studies of motor behavior and psychological correlates have even accepted r -values as low as .40 to indicate a significant relationship (Piek, Bradbury, Elsley, & Tate, 2008).

Correlation coefficients were calculated for perfectionism logit scores in the high and low PC domain. The relationship between perfectionism in the high and low competence domain yielded a positive and significant correlation ($r = .65$). This high to moderate correlation suggests that as perfectionism scores in the high competence domain increase, perfectionism scores in the low competence domain tend to increase accordingly. The inverse would also be true, with a decrease in perfectionism scores in the high competence domain indicating a decrease in perfectionism for the low competence domain.

A linear regression model was developed with high competence perfectionism serving as the dependent variable and low competence perfectionism, high PC logit scores and low PC logit scores serving as the predictor variables. Results indicated that perfectionism logit scores in the high PC domain were significantly predicted by perfectionism scores in the low PC domain ($p < .001$). When controlling for high PC logits and low PC logits, low competence perfectionism scores accounted for 43% of the

variance in high competence perfectionism. According to the unstandardized regression coefficient, as perfectionism scores in the low competence domain increased, perfectionism scores in the high competence domain increased as well ($B = .58, p = .00$).

Similarly, when controlling for high PC logits and low PC logits, perfectionism in the high perceived competence domain accounted for 42% of the variance in perfectionism in the low perceived competence domain. Thus, as perfectionism in the high perceived competence domain increased, perfectionism in the low perceived competence domain increased as well ($B = .74, p < .001$).

When looking at the changes in perfectionism between high and low PC domains, it became apparent that perfectionism scores in the two domains were correlated. The positive and significant correlation in perfectionism in the high and low competence domain suggests that participants' perfectionism levels varied consistently across situations. Regression results support this assumption through the amount of variance in perfectionism logit scores accounted for by the other set of logit scores as well as the significant relationship between the two sets of perfectionism logit scores.

Perceived competence. Intraclass correlation analysis on PC logit scores yielded a positive, yet non-significant relationship ($r = .29$) between the high PC and low PC domains. Though the relationship between PC scores in the two sport domains was positive, the relationship was not significant. Thus, in support of manipulation of the independent variable, PC, it can be concluded that PC ratings in each of the two sport domains were not related. If participants had not perceived level of competence differently in the two sport domains any further analysis between the two sport domains would not be valid.

The Path Diagram

AMOS 6.0 (Arbuckle, 2005) software was used to develop a diagram for the analysis (see Figure 1). The structure of the model was adapted from an existing model in the sport and exercise literature which examined fall confidence and daily living activities among an elderly population (Li et al., 2005). The model for the present study included four latent variables (PC, perfectionism, level of competition, and type of sport). All latent variables, except level of competition, included 2 indicators, one for each sport domain. Level of competition included six indicators, three measuring level of competition in the high PC domain (high school or community, state), and three measuring level of competition (high school or community and state) in the low PC domain. Only four of the indicator values are shown. The level of competition defined as *college* is not shown in the model. This level of the variable served as the reference category for level of competition, high school or community and state served as the indicator variables.

As defined by AMOS graphics (Arbuckle, 2005), a curved connector line indicates that the variables connected by such a line are expected to covary with one another. Figure 1 would indicate then that type of sport and level of play covary. In addition, a straight line connecting two variables indicates a directional relationship. In the present study, level of competition and type of sport were thought to predict PC as well as perfectionism. Further, that the effect of type and level on PC would also influence the relationship between PC and perfectionism.

The Relationship between Perceived Competence and Perfectionism

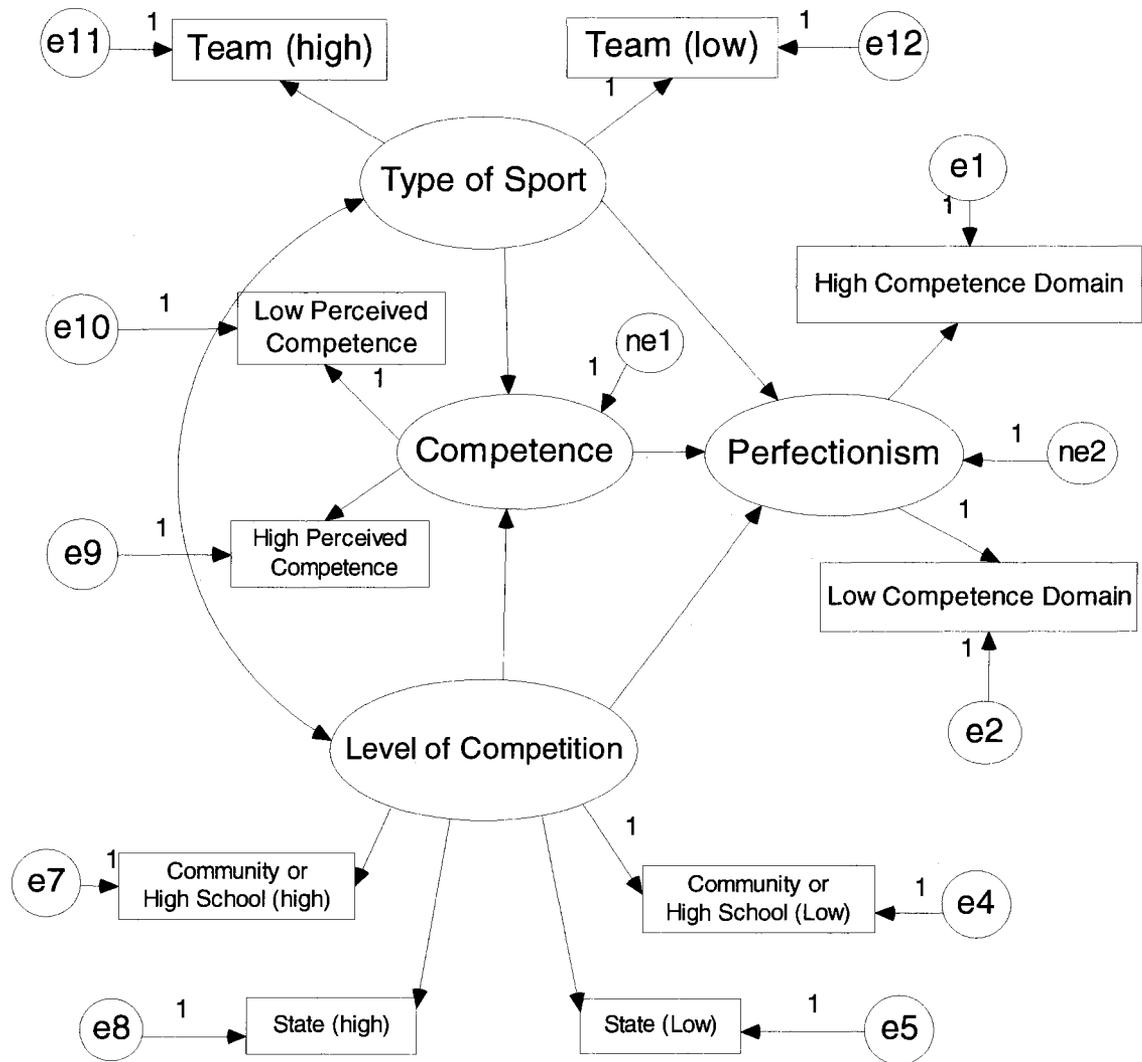


Figure 1: Model diagram of hypothesized interactions and main effects among predictor and indicator variables.

General Linear Models

One of the primary assumptions of any analysis of variance is that residuals of the continuous variables are normally distributed. In order to check the assumption of normality, distributions of the logit scores for PC and perfectionism were examined. Perceived competence, a continuous covariate, in both the high and low competence domains yielded acceptable levels of skewness (.26 and .41). Kurtosis for high PC logits was negative (-.35), indicating a slightly less peaked curve than normal. However, for low PC, kurtosis values reflect a normal distribution (.12). The K-S test of normality yielded significant results for both high PC ($p < .001$) and low PC ($p = .001$).

The residual values for perfectionism were computed from the parsimonious interaction models and used to assess normality of the dependent variable. High PC perfectionism ($M = .00$, $SD = .03$) showed acceptable ranges of both skewness and kurtosis (.42 and .92) (Hildebrand, 1986). The K-S test of normality of the high competence perfectionism residuals was not significant, $p = .066$. Thus, high competence perfectionism scores did not vary significantly from the normal distribution. Levene's test of equality of variance was not significant, $p = .126$, indicating that the variance of perfectionism logit scores between groups was equal prior to testing. For a multivariate model, Levene's statistic is based on groups categorized by a combination of all categorical variables in the model. In the present model, these variables included level of competition and type of sport.

The low PC perfectionism residuals were not normally distributed. The low PC residuals ($M = .00$, $SD = .04$) yielded a skewness value of .20 and a kurtosis value of .69, both within acceptable ranges of normality (Thomas & Nelson, 2001). The K-S test for

low competence perfectionism was significant ($p = .051$), yet the graphical representation (i.e., histogram) and the skewness and kurtosis statistics support the assumption of normality. Levene's test of equality of variance was not significant for low PC perfectionism ($p = .769$), suggesting that variance between groups, again based on a combination of independent variables, was equal prior to testing. Together with the histogram graphic, statistics for the low PC perfectionism residuals reflect a normally distributed variable.

The interaction model. After all variables were entered into the within-subject multivariate model, p -values were evaluated, and non-significant interactions were removed from the model on a step-by-step basis to produce the most parsimonious model. Table 2 provides results for both the reduced interaction model and the final parsimonious model. In the final model, there was one significant interaction for low PC logits x level of competition in the low competence domain (Wilkes' Lambda = .95, $F(2, 228) = 6.51, p = .002$). To further explain the meaningfulness of the interaction term, separate models for high competence perfectionism and low competence perfectionism were computed using only the variables associated with each competence domain.

Table 2

*Multivariate Analysis of Variance Results for the Reduced
Interaction Model of Perfectionism (N = 239)*

Variable	<i>df</i>	<i>F</i>	<i>MS</i>	<i>p</i>
Type (Low Competence Sport)	1	.84	.08	.319
Type (High Competence Sport)	1	1.00	.10	.360
Level (Low Competence Sport)	2	3.82	.37	.023
Level (High Competence Sport)	2	6.89	.67	.001
PC (Low Competence Sport)	1	1.02	.11	.284
PC (High Competence Sport)	1	1.15	.10	.314
Level x PC (Low Competence Sport)	2	6.40	.63	.002
Error	227	---	.10	---

Table 2 (continued)

*Multivariate Analysis of Variance Results for the Final**Parsimonious Model of Perfectionism**(N = 239)*

Variable	<i>df</i>	<i>F</i>	<i>MS</i>	<i>p</i>
Level (Low Competence Sport)	2	3.86	.38	.022
Level (High Competence Sport)	2	7.04	.69	.001
PC (Low Competence Sport)	1	1.04	.10	.309
PC (High Competence Sport)	1	1.32	.13	.252
Level x PC (Low Competence Sport)	2	6.51	.64	.002
Error	228	---	.10	---

The perfectionism model for the high perceived competence sport domain. Table 3 provides a summary of the univariate general linear model for the high competence model of perfectionism logits. According to the *R*-squared value, 6.2% of the variance in high competence perfectionism logit scores can be accounted for by the variables in the model. In order to locate the significance of the main effects of level and type on

perfectionism, parameter estimates for perfectionism were examined in the high competence model.

The variables included in the high competence model were perfectionism logit scores, PC logit scores, level of competition, and type of sport. Between subjects tests yielded significant main effects for both level ($F(2, 234) = 3.67, p = .027$) and type ($F(1, 234) = 5.52, p = .020$).

Table 4 reports the unstandardized parameter estimates (B) of both main effects and interactions for the high PC model. For the high PC model, the parameter estimates indicate that when controlling for level of competition and PC, type of sport was significant ($p = .020, B = .19$). Thus, team sport athletes scored significantly higher on perfectionism than individual sport athletes.

For level of competition, parameter estimates (see Table 4) indicated that when controlling for type of sport and PC, participants who played at the high school /community level ($M = -.17, SD = .50$) scored significantly different on perfectionism than participants who played at the collegiate level ($M = .10, SD = .49$). Participants who competed at the high school/community level displayed significantly lower ($p = .007; B = -.24$) levels of perfectionism than did those participants who competed at the college level. State level participants were not significantly different ($p = .399$) than their collegiate level counterparts.

Table 3

Analysis of Variance Model of Perfectionism for the Sport Domain in Which Athletes Reported a Higher Level of Perceived Competence (N = 239)

Variable	<i>df</i>	<i>F</i>	<i>MS</i>	<i>p</i>
Type (T)	1	5.52	1.39	.020
Level (L)	2	3.67	.93	.027
Perceived Competence (PC)	1	.16	.04	.695
Error	234	—	.25	—

Note. R-squared = .62.

DV = High Competence Perfectionism Logit.

Table 4

*Summary of Hierarchical Regression Analysis for Variables Predicting
Perfectionism in the Higher Perceived Competence Sport Domain (N = 239)*

Variable	<i>B</i>	<i>SE B</i>	<i>p</i>
Main Effects:			
Constant	-.07	.08	.409
Type			
Team Sport	.19	.08	.020
Individual Sport	0	---	---
Level			
High School/Community	-.24	.09	.007
State	-.07	.08	.399
College	0	---	---
Perceived Competence (PC)	.01	.02	.695

The perfectionism model for the low perceived competence sport domain. Table 5 provides a summary of results from the univariate general linear model for the low competence domain. The variables included in the low competence sport model were perfectionism logit (DV), PC logit, level of competition, and type of sport. The single interaction term from the multivariate interaction model, PC logit scores x level of competition, was also included. The interaction term from the multivariate model was also significant in the low competence model, $F(2, 232) = 4.18, p = .016$. Thus, the effect of PC on perfectionism depended on level of competition. The variables and interactions in the low competence model explained 5.5 % of the variance in perfectionism in the low competence situation. Level of competition includes three categories. Therefore, separate regressions were run to locate the significance of the interaction.

Table 5

*Analysis of Variance Model of Perfectionism for the Sport Domain
in Which Athletes Reported a Lower Level of Perceived Competence
(N = 239)*

Variable	<i>df</i>	<i>F</i>	<i>MS</i>	<i>p</i>
Type (T)	1	2.26	.74	.134
Level (L)	2	.09	.03	.917
Perceived Competence (PC)	1	.05	.02	.822
Level x PC	2	4.18	1.38	.016
Error	232	—	.33	—

Note. *R*-squared = .055.

DV = Low Competence Perfectionism Logit.

Three linear regressions were computed, one for each level of competition. Levels of competition were defined as high school/community, state, and college. Table 7 provides a summary of the individual regression models including significance values and parameter estimates of the effect of PC on perfectionism at each level of competition. For players who competed at the high school/community level, perfectionism scores

varied significantly as a function of PC ($p = .012$, $B = .05$). According to the regression coefficient, the relationship between PC and perfectionism among high school or community level athletes was positive and significant. Among athletes who competed at the high school or community level, perfectionism scores increased significantly as a function of PC. Results of regression analysis for athletes competing at the state level were not significant ($p = .576$). Among athletes at the college level, PC did not have a significant relationship with perfectionism ($p = .071$). These findings indicate that the significant interaction is specific to players competing at the high school or community level. Perceived competence was not a significant predictor of perfectionism scores among state or college level athletes.

Table 6

*Summary of Hierarchical Regression Analysis for Variables Predicting
Perfectionism in the Low Competence Sport Domain (N = 239)*

Variable	<i>B</i>	<i>SE B</i>	<i>p</i>
Main Effects:			
Constant	-.14	.12	.231
Type			
Team Sport	.13	.09	.134
Individual Sport	0	---	---
Level			
High School/Community	.02	.11	.843
State	-.02	-.13	.885
College	0	---	---
Perceived Competence (PC)			
Low Competence Sport	-.08	.04	.042
Interactions:			
High School/Community x PC	.12	.04	.004
State x PC	.09	.05	.059
College x PC	0	---	---

Table 7

*Summary of Separate Hierarchical Regression Analyses for Perfectionism
at Each Level of Competition*

Variables in The Model	<i>B</i>	<i>SE B</i>	<i>p</i>
High School/Community ^a			
Constant	-.01	.05	.812
Perceived Competence	.05	.05	.012
State ^b			
Constant	-.06	.08	.465
Perceived Competence	.02	.03	.576
College ^c			
Constant	-.04	.11	.689
Perceived Competence	-.08	.04	.071

Note. DV = Low Competence Perfectionism Logit.

^a R-square = .04.

^b R-square = .01.

^c R-square = .10.

Chapter Summary

Based on the complete analysis of the data, the hypotheses were partially supported. It was hypothesized that there would be a significant difference in perfectionism across PC domains. In the correlation analysis it became apparent that perfectionism scores did change significantly across PC domains. This finding contributes to the research question regarding the trait and situational qualities of the perfectionism construct. In addition, the lack of a strong correlation between PC in the high and low competence sport domain revealed that participants were rating the two PC domains significantly different, supporting the methodology through which the independent variable of PC was manipulated. The results of the ANOVA and regression models provide evidence to explain the extent of the relationship between PC, level of competition, type of sport and perfectionism. Specifically, the effects of PC, level of competition and type of sport have differing effects on perfectionism depending on the PC domain. The interactions and main effects for level and sport type allow for interpretation of perfectionism as a situational construct. This is possible because the effects of the independent variables were not consistent in both sport domains, rather the effects of PC, level of competition and type of sport depended on situational characteristics of the sport domain.

CHAPTER V

DISCUSSION

The purposes of the present study were two-fold. The primary purpose was to explore the trait and situational properties of sport perfectionism through manipulation of perceived sport competence. The secondary purpose was to explore the relationship between sport perfectionism, perceived competence (PC), type of sport (team and individual) and level of competition (high school/community, state, and college). There were three hypotheses addressed in this dissertation. It was hypothesized that 1) there would be a positive and significant relationship between perfectionism and PC. Thus, PC for a given task, sport, or situation would be correlated with sport perfectionism on the same task, sport, or situation. It was also hypothesized that, 2) when controlling for type of sport, the effect of PC on perfectionism would be different depending on level of competition. Lastly, it was hypothesized that, 3) when controlling for level of competition, the effect of PC on perfectionism would be different for team sport athletes than it would be for individual sport athletes. Results of the study revealed that, in certain situations, sport perfectionism varied as a function of perceived task competence, level, and type of sport.

Hypothesis 1, predicting a correlation between PC and perfectionism, was not fully supported by the data. The correlations between PC and perfectionism in both the high and low competence sport domains were not significant ($r < .10$). The lack of a relationship between PC and perfectionism would indicate that the two variables did not vary consistently with one another.

Perfectionism logit scores between the two sport domains yielded a moderate to high positive correlation ($r = .65$). The magnitude of the correlation between high and low competence perfectionism scores suggests that the tendency to display a given level of perfectionism in one sport domain (e.g., high perfectionism), reflects a similar magnitude of perfectionism in the other sport domain. It can be concluded that the relationship between perfectionism across domains was positive and significant. However, the role that PC played in this correlation cannot be determined from these results.

The positive correlation between perfectionism in the high competence and perfectionism in the low competence domain provides evidence for the support of perfectionism as a trait construct. If perfectionism scores varied consistently between competence domains then it is possible that individuals, who display a given level of perfectionism in one domain, displayed a similarly high or low level of perfectionism in the opposing domain. This finding is consistent with previous researchers of perfectionism in sport who contend that perfectionism is, in fact, a trait and does not vary with the situation (Anshel & Eom, 2003).

Correlation results did not provide support for the positive and significant relationship between PC and perfectionism. However, general linear models of the data were able to provide support for Hypothesis 1. A significant interaction in the parsimonious multivariate model indicated that the effect of PC on perfectionism was different for high school or community athletes than it was for college athletes. The interaction of PC and level of competition would suggest that at some level of competition, PC does share a relationship with perfectionism. Further exploration of this

relationship was necessary to determine if this relationship is positive and significant as predicted and also to identify the situations in which this relationship exists. Due to the multivariate nature of the interaction, two univariate models, one for each measure of the dependent variable, high and low competence perfectionism, were created. Interpretations of the results from each model are discussed separately below.

The Low Perceived Competence Sport Domain

As noted above, the general linear model provided additional information regarding Hypothesis 1 and the relationship between PC and perfectionism. Univariate analysis of the low competence model was consistent with the multivariate model yielding a significant interaction effect of PC and level of competition on perfectionism scores. Still further, univariate linear regression models on perfectionism, with PC serving as the sole predictor variable, were run on each level of competition (e.g., high school/community, state, and college). Results of these three models indicated that as PC changed so too did perfectionism among high school/community athletes.

In support of Hypothesis 1, high school or community level athletes who reported higher levels of PC, also reported significantly higher levels of sport perfectionism ($p = .012$, $B = .05$). At the state and college level, perfectionism scores did not show significant changes as a function of PC. These findings also lend evidence to the support of Hypothesis 2, which suggests that the effect of PC on perfectionism differs depending on the athlete's level of competition. Despite the existence of significant parameter estimates and analysis of variance results, the meaningfulness of these results should be considered. The R -squared value of the low competence model was .055. In considering the meaningfulness of the model, less than 6% of the change in perfectionism scores can

be attributed to PC, level of competition and type of sport. Results, suggesting that PC can affect perfectionism in sport, should take into account the low percentage of variance accounted for by all the variables in the low competence model, one of which is PC.

If further validation of the effects of PC on perfectionism at different levels of competition can be provided, there are rational explanations for such a relationship. A study of perfectionism in sport (Anshel et al., in press), one of few which has adopted a unidimensional approach to perfectionism, found a significant difference in perfectionism scores for higher level competitors as compared to lower level competitors. Specific findings of that study indicate that participants who competed at the high school level were found to have significantly lower perfectionism than those who competed at the college or national level. These findings lend support to the role of level of competition on perfectionism scores.

Previous research has shown that the expectations and pressures of oneself and of significant others (e.g., parents, coaches, peers) as well as the individual skill development required to compete at the college level are indicative of perfectionist tendencies (Frost et al., 1990; Hewitt & Flett, 1991). Thus, it would seem that as an athlete achieves at higher skill levels, perfectionism would tend to increase as well. The current findings, however, suggest otherwise. Perceived competence was not a significant predictor of perfectionism at higher levels of competition.

Perceived competence and its relationship with performance, motivation, and the setting of standards for success is a construct which has been studied extensively (e.g., Rice & Slaney, 2002). An individual's belief in his or her ability to succeed can drive performance standards and cause expectations for success to increase (Martens, Vealey,

Burton, Bump, & Smith, 1990). Often, however, an athlete's ability is not congruent with the magnitude of the standards being set, which may lead to unrealistic expectations and unsatisfied achievement goals (Hamachek, 1978). The inability of the athlete to meet expectations can contribute to the development of more complex psychological struggles, of which perfectionism is one. It is possible that the participants who reported a high school/community level of competition for the low competence domain foresaw themselves succeeding at a higher level eventually, and set expectations accordingly. However, while competing at the high school level, actual ability did not match the level of expectations. Thus, the high school/community athletes may have perceived themselves as being more competent than they actually were at that time. The expectations set for performance may have been beyond the level of ability leading to excessively high expectations, pressures to succeed, and a fear of failure, all of which are characteristic of perfectionism (Pacht, 1984).

With respect to state and college athletes, perfectionism did not change as a result of PC. It is possible that an athlete competing at a higher level of competition demonstrates greater congruency between perceived and actual ability. Increased perceived ability among higher level competitors may be met by actual physical abilities, thus satisfying expectations. The success experienced as a result of meeting these goals can serve as achievement motivation and continued striving, not leading to increased perfectionism as was the case in the lower level competitors. As an athlete's PC increases, performance may also increase to meet those expectations and therefore diminish the potential ill-effects of perfectionism. Increased feelings of competence and beliefs in the ability to succeed improve motivation (Ntoumanis, 2001), likely

contributing to the relationship between PC and perfectionism in the low competence sport model. The construct of goal orientation and motivational theories of sport performance may help to further explain this relationship.

Motivation and goal orientation may also partially explain the differences in perfectionism between high level and low level competitors. According to the Achievement Goal Theory (Nicholls, 1989), motivation for performance and behavioral correlates in performance settings (e.g., sport) are dictated by the individual's perception of competence. Cervallo et. al. (2007) studied the effects of both personal and situational factors which may influence the psychological toughness and physical performance in an exercise setting. The results showed that when PC was relatively low, the situational components of the performance setting had a more significant effect on the performance of the participant. It is possible, in the present study, that the relationship between low PC and perfectionism was strongly influenced by situational components (i.e., level of competition). A lack of PC in sport may leave the athlete more vulnerable to the ill-effects of heightened expectations, fear of failure, and lowered self-concept, all of which are characterized by perfectionism. This may be more of a factor among lower level competitors such as high school or community athletes.

The High Perceived Competence Sport Domain

Unlike the low competence model, the high competence model yielded no significant interaction effects. However, in support of hypotheses 2 and 3, main effects for level of competition and type of sport were found in the high competence model. Recall that Hypotheses 2 and 3 suggest a relationship between PC and perfectionism depending on level of competition (2) and type of sport (3). For level of competition,

athletes who competed at the high school or community level reported significantly different levels of perfectionism than those who competed at the college level ($p = .027$). For type of sport, team sport athletes reported higher levels of perfectionism ($p = .020$) than individual sport athletes in the high competence sport model. Both main effects will be examined in more detail in the following sections.

Level of competition. The high competence model showed that perfectionism scores were higher ($B = .05$) among high school or community level athletes as compared to college level athletes. Recall that in the low competence sport domain, high school or community level competitors had lower perfectionism ($B = -.24$) than did college athletes. The significant increase in perfectionism between high school or community and college level participants in the high competence model did not include PC as a predictor, as was the case in the low competence model. There is a difference in perfectionism depending on level of competition, though level of PC is not a factor in the relationship in the high competence sport domain. The absence of PC in the relationship between perfectionism and level of competition in the high competence domain is important because this finding supports only part of Hypothesis 2. The role of level of competition in the relationship with psychological components of performance is not a novel finding.

Research studies in the sport psychology literature have supported the effects of competition level on an athlete's ability to effectively apply psychological skills and mental functioning to sport performance (e.g., Molinero et al., 2006; White & Duda, 1994). For example, in a study which examined differences in the level and influence of motivational climate, aggression, and level of competition among competitive athletes, significant differences were detected depending on the level at which the participants

competed (Rasclé, Coulomb-Cobagno, & Delsarte, 2005). Male handball players who competed at a higher level displayed higher levels of total aggression and also reported differences in the types of aggression demonstrated during competition. In the same study, higher level competitors were also more likely to perceive their motivational climate as performance or ego-oriented. Thus, the athlete's perception of the competitive environment may contribute to his/her physical and psychological development.

Researchers (e.g., Hall et al., 1998) support that a performance or ego-oriented climate, characterized by winning in a competitive sport environment, is more common in higher levels of sport competition (e.g., college) than it is at lower levels (e.g., high school or community). An ego-orientation is more likely to be related to maladaptive psychological characteristics, including perfectionism (Hall et al.; Pappaioannou et al., 2006). At the high school or community level, a task-oriented climate, focusing on individual improvement and fundamental development, is emphasized (Molinero et al., 2006). A task-oriented climate has been shown to correspond with positive performance factors, such as high goals, positive attitudes and continued participation in the sport (Ommundsen et al., 2005). At any level, regardless of the motivational climate being emphasized, what dictates the response to that climate and resulting expectations depends on the athlete's perception of the climate (Cervallo et al., 2007; Schuler, 2000). The effect that goal orientation and motivational climate may have on an athlete's performance may indicate a relationship with additional performance variables, both physical and psychological.

The relationship between motivational climate and perfectionism has been examined in the sport psychology literature. In particular, goal orientation has been found

to be a predictor of perfectionism in some situations (Ablard & Parker, 1997; Duda & Hall, 2001). For instance, athletes who compete in a sport environment which they perceive as task-oriented, focusing on individual improvement and attributing success to personal achievement, reported lower instances of perfectionism than did athletes who perceived a more performance-oriented environment. A performance-oriented environment emphasizes winning, regardless of personal development, and athletic success is based on comparison with other performers. The characteristics of a performance-oriented sport environment are conducive to higher, often excessive expectations both from the athlete and others (Ommundsen et al., 2005). The demonstrated relationships between level of competition and motivation, goal orientation and perfectionism both in the present and previous studies adds to the implications of the athlete's level of competition in helping to explain the dynamics of the sport experience.

Type of sport. The significant main effect for sport type in the high competence domain indicates that perfectionism scores related to high and low competence sports differed for team sport and individual sport athletes. This finding partially supports Hypothesis 3, predicting that the effect of PC on perfectionism scores would be different for team and individual sport athletes. Team sport athletes displayed higher perfectionism than individual sport athletes ($B = .19$), but PC was not a factor in this relationship, as predicted by the hypothesis.

Type of sport can indicate not only the structural nature of the sport itself, but also the dynamics surrounding that sport. It would appear that individual sport athletes tend to experience greater levels of anxiety and perceived pressures to perform in competitive environments, compared to team sport athletes (Martin & Hall, 1997; Smith, Smoll, &

Schutz, 1990). Increased anxiety is often accompanied by worry, doubts about actions, and fear of outcomes, all of which are characteristic of heightened perfectionism (Frost et al., 1990; Hewitt & Flett, 1991). For example, in a study of competitive track athletes, Flowers and Brown (2002) assessed competitive state anxiety for both team and individual sport types. They found that individual event athletes demonstrated higher levels of competitive anxiety than athletes who competed in team competitions. Thus, it is plausible to assume that individual sport athletes are more likely to be perfectionists than are team sport athletes.

The current findings may offer an alternative interpretation of the effect of type of sport on perfectionism. Team sports offer the opportunity for athletes to dispel some of their responsibility and workload (Martens et. al., 1990). When athletes are surrounded by a team of fellow competitors, the burden of success does not fall solely on their performance, as would be the case in an individual sport environment. Attributions for failures, mistakes, or shortcomings can be directed to the team as a whole or individual teammates, rather than the athlete assuming the burden of defeat on him or herself alone. However, it is possible that team sport athletes have expectations from teammates to perform consistently well and to contribute to the team's success. Individual sport athletes may experience more internal pressures, while avoiding the external pressure of teammates.

Similar to the results of the low competence model, the significant main effects and the implications therein should be considered in light of the actual meaningfulness of the findings. In looking at the model as a whole, the *R*-squared value was .062, indicating that the variables in the model, namely level of competition and type of sport, accounted

for only 6.2% of the variation in perfectionism scores among participants. Therefore, regardless of the significant differences yielded for level of competition and type of sport, the actual contribution of these variables to the changes in perfectionism scores is relatively weak.

Is Perfectionism a Trait or Situational Construct?

The results of previous research have consistently viewed perfectionism as a trait as opposed to a situational construct (Flett, Hewitt, Blankstein, & Dynin, 1994; Hamachek, 1978; Hewitt, Flett, & Turnbull, 1994). The primary purpose of this study was to test this supposition in sport settings, specifically whether perfectionism is a situational construct in which levels of perfectionism change depending on the characteristics of the competitive environment. The present study supports the findings by Saboonchi and Lundh (1999) that perfectionism may possess situational properties. Perceived competence, level of competition, and type of sport had differing effects on perfectionism scores in each of the two competence domains. Based on these findings, it could be argued that perfectionism scores among participants were not consistent across situations.

However, in support of trait properties, perfectionism scores between the high and low competence domain were highly correlated ($r = .65$). The positive and significant correlation between perfectionism logit scores in the high and low competence domain suggests that, as levels of perfectionism in one situation change (e.g., the high PC sport), levels in the other situation also change (e.g., low PC sport) in the same direction. In addition, regression analysis showed that over 40% of the variance in perfectionism scores can be attributed to perfectionism scores in the opposing domain, indicating a level

of consistency among perfectionism scores in each domain. It is possible that individuals who have higher perfectionism in one domain tend to have higher perfectionism in the other domain. This does not mean that perfectionism does not change, simply that some individuals have inherently higher perfectionism in all situations. Individuals who possess higher levels of trait perfectionism may display higher levels of perfectionism in certain situations, as well. Given the correlation and regression results it seems plausible that in certain sport domains perfectionism displays trait properties.

The findings concerning the trait and state qualities of perfectionism have been inconclusive in previous research (Saboonchi & Lundh, 1999), and this trend is supported in the current study. In the current study, significant interactions and main effects among participants in the different sport situations suggest that perfectionism is not simply a stable characteristic, but possesses dispositional characteristics as well. For instance, in the high PC sport domain, there was a significant main effect for sport type and level of competition, whereas in the low PC model, the main effects were not significant. If perfectionism was a trait, or stable across time and situation, the high and low competence models would have shown similar results. These results, as opposed to the previous findings, suggest a situational component of perfectionism.

In light of the current findings, perfectionism in sport may possess both trait *and* situational qualities, supporting what psychology has come to call an interactionist theory. Personality theorists have debated the contention of traits and states as they pertain to behavior outcomes for decades (Epstein, 1979; Nezlek, 2007). The interactionist approach posits that a psychological construct does not have to be categorized as either a trait or a state, but can demonstrate characteristics of both. In light

of evidence of the situational aspects of personality, theorists have begun to dismiss the benefit of even evaluating constructs on the trait level. However, the results of research from an interactionist approach suggest that traits are a significant predictor of situational outcomes and behavioral responses (Fleeson, 2007). Thus, it is essential to consider the influence of both trait and state properties in order to fully understand a psychological construct such as perfectionism. In order to better understand the trait versus situational qualities of perfectionism it is helpful to examine other psychological constructs that display trait and situational properties. One such construct is competitive anxiety (Jones & Swain, 1992; Smith et al., 1990).

Competitive anxiety has been consistently found to display both trait and situational components in sport settings (e.g., Hanton, Mallalieu, & Young, 2002; Martens et al., 1990; Perry & Williams, 1998). Anxiety in sport has been shown to affect performance based on time prior to competition (e.g., days, hours, minutes), the athlete's skill level (e.g., elite vs. novice), and sport type (e.g., team or individual) (Hanton et al.; Hassman, Raglin, & Lundqvist, 2004). The variables of level of competition and type of sport are identical to the variables manipulated in the current study, both of which had a significant effect on perfectionism scores. Evidence from previous studies that anxiety changes across time and between situations supports a situational or state component of the construct. It has been suggested (e.g., Man, Stuchliková, & Kindlmann, 1995) that athletes possess varying levels of trait anxiety though this anxiety may be manifested differently in certain competitive situations.

It is often argued that higher trait-anxious athletes are more likely to exhibit higher state anxiety (Eysenck, 1992; Hanton et al., 2002), though results are inconclusive.

For example, a study of trait and state anxiety among elite golfers revealed that trait anxiety level did not predict state anxiety in all situations (Hassman et al, 2004). For some golfers, state anxiety was correlated with trait anxiety across the 10 regular season competitions, yet for other golfers, anxiety level preceding each competition changed. Reasons for the change were not explored, yet the fact remains that state and trait anxiety demonstrated inconsistent relationships among the golfers. Similar patterns between trait and situational perfectionism may also exist, and warrants future study.

Overall, although the data did not fully support each hypothesis, the findings do contribute to the literature on perfectionism in sport. For example, if an athlete manifests characteristics of perfectionism, such as a tendency to set high goals and become unreasonably upset after making mistakes during competition, the use of cognitive strategies (i.e., positive self talk, relaxation) to reduce anxiety or improve coping skills may be needed. If, as this study would suggest, perfectionism fits an interactionist model, possessing both trait and situational qualities, then it is essential to determine the environmental factors which tend to boost levels of perfectionism. Once those situations can be defined then the individual must determine if those situations, and the resulting perfectionism, are beneficial to performance quality. If they are thought to be desirable, how they can be replicated in future achievement settings?

Limitations

This study included limitations that provide areas for improvement in future related studies. For instance, in order to generalize findings to other populations it is essential to consider the sample used in the present analysis. This study included competitive high school *and* college athletes who were currently competing in at least

one sport. It is likely that the competitive experiences of high school athletes are very different than those of college athletes, making comparison between the two more complex than would be a sample of participants who had all completed the same years of competitive sport. However, the decision to include both high school and college athletes reflects past studies which used a heterogeneous sample of both levels of athlete (e.g., Stoeber, Stoll, Pescheck, & Otto, 2008). Sampling from both populations provided an additional independent variable, level of competition, to be included in the final analysis, and indeed offered some interesting conclusions about how perfectionism may vary at different levels of play for this particular sample.

The selection of a sample for use in experimental research dictates the generalizability of the results. All findings of the current study can be attributed only to the sample used in the present study and cannot be assumed to be true in other, unrelated populations. Similar methods and analysis should be replicated in other populations to further support the findings and trends exemplified among this population of high school and college students in the southeastern United States.

Another limitation of the current study concerns the method of data collection. Many student athletes competed in only one sport, for instance, soccer. Therefore, when asked to assess PC in a second sport domain, rather than think of a different sport, these single sport athletes were asked to recall feelings and behaviors they experienced in the same sport from a previous time period. This retrospective data collection method may have allowed for inaccurate recall of feelings and behaviors related to the sport domain (Ntoumanis, Biddle, & Haddock, 1999; Thomas & Diener, 1990). Future studies may benefit from a sample of athletes who currently compete in multiple sports in order to

insure that each participant has two current sport experiences to which they can refer for the two competence domains. For example, if a participant competes in basketball and soccer, then he/she would determine in which sport he/she feels most competent and the other sport would serve as the low PC sport.

The information gained regarding the PC inventory provides a noted limitation in the present study. The use of IRT (i.e., the Rasch model) for the transformation of data into logit scores was very beneficial for the purposes of data analysis, especially in the case of perfectionism. Relying on summation or average scores with Likert type data does not accurately reflect participant response patterns, yet is consistently utilized as a method of calculation in item response methodologies. The IRT process provided a clean and standardized method of calculation, while also providing information on the quality of the inventories that were used for data collection. When assessing the results of the model-fit for the PC scale using the Rasch model, it was apparent that the measure did not differentiate individuals within each PC situation. In the high PC situation, nearly all participants tended to agree that they were highly skilled at the sport. For the low PC situation, the majority of people indicated a neutral feeling about their ability in a particular sport (answering in the 4-5 range).

IRT results in the form of person-item maps and measures did not bode well for the effectiveness of this particular measure. An instrument should be able to accurately categorize individuals and indicate even slight variation in feeling on particular tasks. If all individuals can easily agree with the questions being asked then it is unlikely that individual differences in PC can be detected accurately. Future research is needed to

improve the validity of the PC scale in an attempt to better reflect differences among participant's perceptions of ability.

Future Research

In their review of perfectionism in sport literature, and potential areas for future research, Flett and Hewitt (2005) indicate the need for a sport specific measure of perfectionism to rival traditional adaptations of non-sport inventories for research purposes. The current study utilized a newly developed sport perfectionism inventory which adopts an uncommon, yet warranted, unidimensional approach to the construct of perfectionism. Results of the IRT method would suggest a strong fit of the model to the data, adding to the usefulness of this measure. However, more data is needed to validate this inventory and to explore perfectionism as unidimensional.

Perfectionism was higher in athletes who competed at a more advanced level (e.g., college) than for those who competed at a lower level. Potential reasons for the noted difference in perfectionism scores were not directly addressed in the current study. Future research initiatives should explore the situational factors associated with different levels of competition. Among high level athletes, it is especially important to determine other correlates of competition which may lead higher perfectionism among participants at this level. Once the changes that occur between high school/community levels of competition and collegiate competition can be determined, perhaps educational initiatives and coping techniques can be implemented to help athletes avoid the negative impact these factors can have on the psychological welfare of the athletes.

The trait and situational characteristics of perfectionism should also continue to be explored. It is apparent in the current study that perfectionism in performance settings

cannot be characterized a simply as a trait, affecting all performance settings in the same way. This traditional belief about perfectionism being solely a trait (Frost et al., 1990) was contended with the results of the current study, especially the differing effects of PC, level of competition and type of sport for the high and low PC sport domains.

Perfectionism levels were assessed in the current study. However, information regarding how athletes perceived such perfectionist tendencies was not evaluated. Researchers cite the need to explore how athletes can avoid the “perils of perfectionism” through coping, flexible goal setting, and education (Flett & Hewitt, 2005). Just as athletes may view high levels of anxiety as facilitative to performance, athletes may report high levels of perfectionism as benefitting performance quality. In such cases researchers can learn what psychological correlates allow an individual to channel those expectations, performance strivings and motivational orientations to allow the athlete to use perfectionism to his/her advantage as opposed to letting it become a barrier to performance. Further understanding of perfectionism may be enhanced by drawing upon the details of other psychological constructs (e.g., anxiety) and how these constructs affect sport performance.

Conclusions

Though specific effects of PC on perfectionism did exist in the findings, in general, the present study did not show a significant effect of PC on perfectionism levels in high school and college athletes. Despite the lack of a significant relationship between PC and perfectionism among the current sample, PC has demonstrated a noted influence on the sport experience through motivation, goal setting and enhanced self confidence (Nicholls, 1989; Rice & Slaney, 2002). Perceived competence may directly affect the

mindset of the athlete through feelings of self-worth and increased confidence. Perhaps, PC indirectly influences mental functioning through situational mediators (e.g., level of competition). Regardless, if coaches, parents, and athletes themselves can be made aware of the importance of believing in one's ability to succeed, and as a result use that confidence to set reasonable goals and continue pushing the limits of excellence, then performance quality will no doubt improve.

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APPENDICES

APPENDIX A

Instructions and Instrumentation

Participant Instructions

Good Morning!

Thank you so much for being a part of my dissertation. Just so you know, a dissertation is a research project that is completed in order to complete a PhD program. It is required that you choose a topic and complete the experiment, including collecting data, in order to graduate! So, without you I would be in trouble!!

I have given each of you a consent form which explains the study to you and what you will be asked to do in order to participate. I will give you a brief explanation and then ask that you read the form and decide if you feel comfortable continuing with the data collection process.

I am studying the personality characteristics of high school age athletes. By filling out a few inventories I will hope to determine if students with certain characteristics behave differently in sports than those who do not have those characteristics. Once you have taken the inventories I will be happy to talk to you about the psychological aspects of competition and you will be able to ask questions if you have any.

While you are filling out the questionnaires please be honest about your responses. No one will see your answers but me, and your name will not be on any of the questionnaires. The more honest you are the more likely it is that we will be able to learn from the responses.

If, at any time you feel uncomfortable or feel that you just do not want to participate please just bring your materials to me and you are free to go. There will be no consequences of not participating.

After Consent is Given....

You have been given four questionnaires. Before you begin please look at the ID number and make sure it is the same on all questionnaires. Take out the two questionnaires with the blue dots from your packet.

Please take out the two inventories with the blue dots. When you are completing these two questionnaires, I want you to think of a sport in which you feel that you are the most highly skilled. If someone were to ask you what is "your sport"? this is the sport you would think of. I want you to keep that sport in mind as you complete each of the questionnaires.

While still considering that sport, please fill out the other questionnaire, labeled Sport Competitor Inventory. When you have completed both inventories please put them back into the envelope and sit quietly.

Once all participants have completed the first two inventories...

Now, leaving the first questionnaires in the folder, please take out the two questionnaires with the red dots.

When you are completing these two questionnaires I want you to mentally switch gears. You have two options. You may think of the same sport at a time when you felt significantly less skilled than you are now. Or, you may think of a different sport in which you feel significantly less skilled than the first sport. Please complete these two questionnaires while thinking about this sport.

Thank you very much for your help with my study. When I have the results I will be happy to come back and share them with you.

SPORTS COMPETITOR INVENTORY

To complete this inventory, you are now a competitive athlete. In answering each question, think of your most recent experiences as a sports competitor. Any reference to your parents refers to the person (mother, father, step-parent) who had the greatest influence on your participation in sport. It is important to know *there are no "right" or "wrong" answers*. Because it is very important to be completely candid and honest, your name is not needed. All responses are anonymous and strictly confidential. Thanks very much for participating in this survey.

Please read each question carefully, and then write in your responses in the blank next to each question. Follow the scale at the top of the page to indicate the extent to which you agree or disagree with each statement.

-----1-----	-----2-----	-----3-----	-----4-----	-----5-----
Strongly Disagree	Disagree	Neither Disagree Nor Agree	Agree	Strongly Agree

- ___ 1. As a child, I was punished for doing things less than perfect.
- ___ 2. If I do not set the highest standards for myself, I am likely to end up a second-rate person.
- ___ 3. If I perform poorly as an athlete, I feel I have failed as a person.
- ___ 4. I feel I should be upset after making an error.
- ___ 5. I set higher goals for myself than most people set for them.
- ___ 6. It is as bad as being a complete failure if I partly fail.
- ___ 7. I feel that I had a bad game or match if I made an error during the contest.
- ___ 8. Even after I perform well I think about something I could have done better during the competition.

IT IS VERY IMPORTANT TO COMPLETE THE FOLLOWING PERSONAL INFORMATION

37. **Type of sport you were thinking about:** 1=team sport; 2 = individual sport _____

38. **Level of competition you were thinking about:** 1=community, 2=high school, 3=regional/state; 4=college/national _____

39. **Gender:** M or F

40. **Age:** Please indicate your **year of birth** : _____

41. **Player Position:** Starter Non Starter

** A starter is anyone who is in the first string of players for over half of the competitions in a given season. If you are injured and were a starter prior to injury then you should mark **Starter**. If you are unsure or start in some but not the majority of competitions then please indicate **Non Starter**.

Thank you so much for completing this inventory. All of your information is completely confidential and will be used for research purposes only. Tiffany Watson, Department of Health and Human Performance at MTSU is the study coordinator in case you have any questions <tdw2x@mtsu.edu>

Activity Rating Scale

1. Please indicate the level of your ability on the task you were just asked about by the experimenter.

1	2	3	4	5
Very Low				Very High

Please answer the following on the 1-7 scale below each question.

2. I think I am pretty good at this activity.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

3. I think I do pretty well at this activity, compared to other students.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

4. After working at this activity for awhile, I feel pretty competent.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

5. I am satisfied with my performance at this task.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

6. I am pretty skilled at this activity.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

7. This is an activity that I cannot do very well.

1	2	3	4	5	6	7
not at all true			somewhat true			very true

APPENDIX B

Letters of Informed Consent

Consent Letter to Director of Athletics

Dear Director:

I am writing to request the participation of your student-athletes as part of a Dissertation Study in the field of Sport Psychology/ Human Performance.

The topic of my research is perfectionism in high school athletes. It is a study of how the situational variables in sports can affect the perfectionism / performance relationship. I would be honored if the **junior and senior athletes** of your institution would be willing to participate. It is my hope to sample participants from a variety of schools and sport organizations in the Middle Tennessee area.

The process will involve completion of two questionnaires on perfectionism and perceived competence (how skilled the students think they are at a particular sport). Parental consent will be acquired for all students under 18.

Student responses will be kept in complete confidence, used for research purposes only. I will be happy to discuss perfectionism and how it can benefit and/or hurt performance, if you feel the students would benefit from such knowledge. The whole administration and testing should not take more than 30 minutes.

If you are willing to consider this, I would ask that you sign the form on the following page and return it to me. Upon receipt I will contact you and we can discuss potential methods of administering the questionnaires and what the most convenient time and place for this process might be.

Thank you for your consideration of this request and I hope to hear from you soon!

Sincerely,

Tiffany Watson

I, _____, agree to provide
Your Name (print)

access to Junior and Senior athletes of _____
School Name

for the purposes of data collection in your project, entitled *The Relationship of Perceived Competence and Perfectionism in Sport*.

Signed: _____

Date: _____

Consent letter to Parents

March 11, 2008

Dear Parents:

My name is Tiffany Watson. I am a doctoral student at Middle Tennessee State University. Under the supervision of Dr. Mark Anshel, I have chosen to conduct my dissertation research in the area of Sport Psychology and to study the characteristics of high school athletes in a competitive setting. Specifically, I am interested in perfectionism as it relates to sport performance.

I am writing to ask your consent in allowing your child to participate in my research. The process involves the completion of two written questionnaires. The questionnaires are related to performance and perceptions in different sport-related situations. Sample questions are: "I set higher goals for myself than other athletes in my sport" and "I feel that I am highly skilled in this sport". No questions involve harmful and/or personal information.

I will ensure if, at any time, your child feels he/she would like to discontinue participation that he/she is given such an option. I will further ensure that all answers are used for research purposes only and are seen by no one but myself and my committee. No names or other identifying information will be included on the students' responses.

I would greatly appreciate your consent in allowing your daughter to participate in this study. The results will benefit coaches, athletes and parents in better understanding the psychological characteristics which can benefit sport performance and essentially success!

If you prefer that your child NOT participate please contact me via email.
sportsedge@comcast.net.

Thank you for your help in completing my research project,

Sincerely,

Tiffany Watson

Consent Letter to Participants

Dear Student Athletes:

My name is Tiffany Watson. I am working on my Ph.D. at Middle Tennessee State University. Under the supervision of Dr. Mark Anshel, I have chosen to conduct my dissertation research in the area of Sport Psychology and to study the characteristics of student-athletes in a competitive setting.

The process involves the completion of two written questionnaires. The questionnaires are related to performance and perceptions in different sport-related situations. Sample questions are: "I set higher goals for myself than other athletes in my sport" and "I feel that I am highly skilled in this sport". No questions involve harmful and/or personal information.

If, at any time, you would like to discontinue participation please let me know or simply leave the questionnaires on your desk. There will be no consequences or questions asked about your decision. I will further ensure that all answers are used for research purposes only and are seen by no one but myself and my committee. No names or other identifying information will be included on your responses.

The results will benefit coaches, athletes and parents in better understanding the psychological characteristics which can benefit sport performance and essentially success!

Thank you for your help in completing my research project, If you have read, understand and agree to the above, please sign below and return to the researcher.

I, _____, have read and agree to the above conditions of this research project. If, at anytime now or after completion of the questionnaires, I would like to remove my data, I will contact Tiffany Watson at tdw2x@mtsu.edu.

Signature of Participant

Date

Signature of Researcher

Date

APPENDIX C

IRB Approval

March 6, 2008

Tiffany Watson and Dr. Mark Anshel,
Department of Health and Human Performance
tdw1227@comcast.com, manshel@mtsu.edu

RE: Protocol Title: "The Relationship of Perceived Competence and Perfectionism in Sport"
Protocol Number: 08-139

Dear Investigator(s):

This purpose of this letter is to acknowledge receipt of permission letters from the following schools:

- Montgomery Bell Academy
- Battleground Academy and
- Harpeth Hall

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918. Any change to the protocol must be submitted to the IRB before implementing this change.

You will need to submit an end-of-project report to the Office of Compliance upon completion of your research. Complete research means that you have finished collecting data and you are ready to submit your thesis and/or publish your findings. Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date. Please allow time for review and requested revisions. Your study expires **December 10, 2008**.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to provide a certificate of training to the Office of Compliance. If you add researchers to an approved project, please forward an updated list of researchers and their certificates of training to the Office of Compliance before they begin to work on the project.

Please note, **all research materials must be retained** by the PI or **faculty advisor (if the PI is a student)** for at least **three (3) years after study completion**. Should you have any questions or need additional information, please do not hesitate to contact me.

Sincerely,

Tara M. Prairie
Compliance Officer
Middle Tennessee State University