ABSTRACT

PERFECTIONISM HURTS: EXAMINING THE RELATIONSHIP BETWEEN
PERFECTIONISM, ANGER, ANXIETY AND SPORT AGGRESSION

by Megan Byrd

The primary purpose of this exploratory study was to examine the relationship between perfectionism, anxiety, and anger on reactive aggression in male, contact sport athletes. A total of 50 male athletes competing in three contact sports, ice hockey, rugby, and football completed the surveys. A significant regression analysis revealed that the Sport-MPS subscales of perfectionism predicted levels of reactive aggression, as measured by the Bredemeier Athletic Aggression Inventory, specifically the concern over mistakes subscale and the organization subscale. Also, it was found that levels of reported state-anger, anxiety, and perfectionism significantly predicted levels of reactive aggression. Future research directions and study limitations will be discussed.
PERFECTIONISM HURTS: EXAMINING THE RELATIONSHIP BETWEEN PERFECTIONISM, ANGER, ANXIETY AND SPORT AGGRESSION

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CHAPTER ONE
REVIEW OF LITERATURE

Sports are aggressive. In 2009, Oregon State football player, LaGarette Blount ended his season through suspension after punching Boise State player Byron Hout in the jaw following a loss. Prior to the game, Blount talked about the importance of keeping his emotions in check, but apologized after the game for “losing his head” (Associated Press, 2009a). In 2010, Vancouver Canuck hockey player, Rick Rypien was tossed from a game against the Minnesota Wild for roughing and 10-minute misconduct. On his way to the locker room, Rypien grabbed a Minnesota Wild fan cheering at the railing and was pulled away by a teammate (Associated Press, 2010). Rypien was suspended 6 games for contact with the spectator. Unfortunately, incidents such as these are becoming more prevalent in sport. Hockeyfights.com documents fights in the National Hockey League and allows fans to rate and vote for the fight of the week. Many more examples of aggressive behavior can be found in sport that illustrates the importance of continued research in this area. Anger has also been recognized as a prevalent emotion in sport (e.g. Brunelle & Tennant, 1999) and yet relatively little research has been conducted to understand the antecedents and consequences of anger among athletes (Abrams & Hale, 2005).

Suspension, fines, penalties, and injuries are negative consequences of sport aggression. It appears that many variables are associated with aggression and athletes. However, antecedents of sport aggression are still relatively unknown, thus, the purpose of this thesis to examine possible variables that may predict or help to explain sport aggression. This study focuses on perfectionism, anger, and anxiety and the relation to sport aggression. The review of literature in this section is on sport aggression, perfectionism, anger, and anxiety. The first section of this chapter provides a definition of sport aggression, theories of aggression applied to sport, and existing sport aggression research. The second section defines perfectionism within the sport context, and explores the current knowledge regarding the relationship between perfectionism, anger, anxiety, and aggression. The closing section of this chapter is used to summarize the literature review and to describe the purpose and hypothesis underlying the current study.

Defining Aggression

The terms anger and aggression are often used interchangeably in the literature causing conceptual confusion. Anger is defined as an “emotional state or condition marked by subjective feelings that vary in intensity from mild irritation or annoyance to intense fury and rage”
(Spielberger, Jacobs, Russell, & Crane, 1985, p. 16), whereas, aggression is a general term that has been used for a wide variety of acts that involve attack (Reber, 1985). Aggression has also been defined as “any form of behavior directed toward the goal of harming or injuring another living being who is motivated to avoid such treatment” (Baron & Richardson, 1994, p.7). In regard to sport, the International Society of Sport Psychology (ISSP) published a position statement that defined aggression as the infliction of an aversive stimulus, physical, verbal or gesture upon one person by another (Tenenbaum, Stewart, Singer, & Duda, 1996). Silva (1978) suggests that an aggressive act in sport is intentional and observable, is committed with the intent to injure, and is personal (the person committing the act is responsible for the consequences). Further, Russell (1993, p.191) suggests that “outside of wartime, sports are perhaps the only setting in which acts of interpersonal aggression are not only tolerated but enthusiastically applauded by large segments of society.” There seems to be a lack of consensus on one definition of sport aggression, even though sport aggression is prevalent in sport and many players and coaches consider aggressive behavior as an important strategy for winning (Sheldon & Aimar, 2001). This paper will use the definition set by Tenenbaum, et al. (1996). A full list of definitions used in this paper can be found in Table 1. Several theories have been developed to better understand aggression, as well as, the causes of aggression. Although all theories are not sport specific, their implications to sport will be addressed.

**Aggression Theories**

The first theory of aggression was the frustration-aggression theory, which states that aggression is the direct result of a frustration that occurs because of a goal blockage or failure (Dollard, Doob, Miller, Mowrer, & Sears, 1939). The authors believed that aggression was always a consequence of frustration, but that frustration doesn’t always lead to aggression. Based on this theory, a football quarterback who fumbles the ball and then intentionally trips an opposing player is acting out of frustration. Proponents of the frustration-aggression theory viewed catharsis as an underlying factor.

Catharsis occurs when aggression is released or blown off in socially acceptable means such as sport (Gill, 2000). According to the catharsis theory, aggression is a basic instinctive drive that builds up and must be released directly in behavior (Bushman et al. 1999; Cox, 2002). Jones, Stewart, and Sunderman (1996) found that officials in the National Hockey League seem to support the catharsis theory. They believed that violence on the ice is acceptable because it
permits the cathartic release of frustrations that arise during the game. However, this theory received little support in the literature mainly because there was little evidence that frustrated athletes lower their levels of aggression by participating in contact sports (Gill, 2000). If the catharsis theory holds true, athletes in high contact sports would have lower levels of aggression than non-athletes or athletes in non-contact sports.

Another study contradicting the catharsis theory of sport aggression was conducted by Arms, Russell, and Sandilands (1979). The researchers wanted to know if spectators who viewed a football game, swimming competition, hockey game, or a wrestling match would exhibit different levels of aggression prior to viewing the event or after viewing the event. Participants were 127 students randomly assigned to attend one of the above events in either a pre-event or post-event condition. The pre-event students were required to arrive at the event thirty minutes prior to its start and were given the Mood Adjective Check List (Nowlis, 1965), and the Buss-Durkee scale (Buss, 1961) that measures hostility. Post-event participants were given their tickets upon arrival to the event and asked to remain in their seats 15 minutes following the game and then asked to fill out the questionnaires. The results showed that participants that viewed the contact sports, football and hockey, were more aggressive after the sporting events than those who viewed wrestling and swimming. This finding was most prevalent among the male participants.

Lemieux, McKelvie, and Stout (2002) found no significant differences in aggression levels between athletes and non-athletes who had similar body types. The participants provided demographic information including height, weight, and age. Athletes and non-athletes were matched based on physical size, age, and year of study. Contact athletes and their matched non-athlete were taller and heavier than the non-contact athletes and their matched non-athletes. The contact athletes reported more incidents of fighting than the non-contact athletes, but these differences were also found in the control group of non-athletes. This finding indicates that aggression appears to be a function of physical condition rather than type of sport, which is not consistent with catharsis aggression theories. Overall, there is little evidence to support this theory or the idea of catharsis in sport. Several researchers (Buss, 1961; Berkowitz, 1965) criticized the frustration-aggression theory and thus it was modified.

Berkowitz (1968) proposed the revised frustration-aggression theory, also called the completion hypothesis. The revised-frustration theory was adopted based on the following
recommendations, frustration arouses an emotional state, in some cases anger, that creates a readiness for aggressive acts. Aggressive responses do not occur given this readiness unless suitable cues are present (e.g. competition, sporting environment). Cues may lead to aggressive behavior by arousing previously acquired aggressive habits (e.g. taught to fist-fight in hockey, hard block in football). Leith (1982) argued that other factors, such as referees, physical contact, instrumental learning, and social attribution of opponents, in conjunction with frustration lead to aggression in sport. Therefore, frustration does not always lead to aggression, but it increases the likelihood of aggression by increasing arousal, anger, and other thoughts and emotions (Berkowitz, 1968, 1988). The revised-frustration theory transfers into sport well because athletes react to situations differently. One athlete might become frustrated after a referee’s call on a play and act aggressively on the next play, while another athlete might become frustrated and use it to focus on the next play.

The social learning theory, developed by Bandura (1973) explains aggression as behavior that people learn from various sources through observations and experiences. Bandura, Ross, and Ross (1963) found that children who watched videos of adults playing aggressively with an inflatable “bobo doll” were likely to model the behavior of the adults and act aggressively with their own doll. Children who watched adults playing gently with the doll modeled those gentle behaviors with their doll. Through modeling, which is observing a behavior of a model and then repeating the behavior, individuals can acquire responses never previously performed and strengthen or weaken responses that already exist in their repertoire of behavior (Bandura et al., 1963). Modeling is also influenced by the perceived rewards or punishments of that action. If a young football player views an older player make a hard hit on the quarterback that results in the loss of a down, that player is rewarded and the young player is likely to model this behavior to obtain the same reward. However, if that same player is flagged for unnecessary roughness on the play and is punished by the officials, the youth player is most likely not going to model the behavior in order to avoid punishment.

Coaches also serve as a source of punishment and reward that influences players’ modeling behaviors. Using the same sport situation, if the older player was not flagged on the play for hitting the quarterback, but the coach pulled the player out of the game for his actions, the youth player would not be likely to model that behavior. Conversely, if the player was flagged and punished by the officials, but the coach praised and rewarded the player for making
the hit, the youth player might model that behavior to please the coach. Ultimately, if the punishment does not outweigh the reward, like the instance with the coach praising an athlete after an illegal play, aggressive behavior is likely to be modeled. One purpose of a study by Loughead and Leith (2001) was to examine the relationship between players’ and coaches’ perceptions of aggression in sport. Participants of this study were male, minor league hockey players aged 10 to 15 years. Players and coaches were given the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975) and their scores were compared with players’ observed aggression recorded on penalty sheets. One unique aspect of this study was the differentiation between hostile and instrumental aggression. Instrumental aggression is behavior against another person that is used as a means of securing some reward or to achieve an external goal, such as victory. The harm to other is incidental and is not the perceived goal (Silva, 1983) as opposed to hostile aggression which is behavior performed with the sole intention of inflicting harm on a person (Silva, 1983). These terms can be found in Table 1. Although coaches’ endorsed instrumental aggression, players’ observed aggression was not related to their coaches’ perceptions of aggression. This finding supports the notion that coaches play an influential role with their players, but they are not the only source of influence on players’ aggressive behavior.

Using social learning theory, Silva (1983) tried to determine if rule violating behavior depicted in eight slides was perceived to be legitimate sport behavior. The slides depicted rule violating behavior in ice hockey, baseball, basketball, and football to 203 collegiate students. The participants were asked to determine the acceptability-unacceptability of the various behaviors exhibited in sport on a 4-point Likert scale (1 = totally unacceptable, 2 = unacceptable, 3 = acceptable, 4 = totally acceptable). Results showed that males perceived the rule violating behaviors as more legitimate and acceptable than females. Males who participated in sport in high school and college had higher perceived legitimacy than those males not involved in sport. For male athletes, the more physical the sport they played, the longer they were involved in sport, and the higher the competitive level of sport, the higher their perceptions of legitimacy for the rule violating behaviors. As social learning theory began to receive support in the aggression literature, especially in younger sport populations, the idea of moral reasoning in children received more attention.

Moral reasoning theory views aggression as a product of undeveloped morals in children (Bredemeier & Shields, 1984). Moral reasoning is the cognitive process that an individual goes
through in order to reach a moral decision based on their perceptions of morality (Haan, 1977; Kohlberg, 1976). Haan’s (1977) theory of moral reasoning is defined in terms of conflicts, dialogue, and balance between individuals involved in a specific situation. Bredemeier and Shields (1984, 1986a, 1986b 1994,) and Hall (1981) have investigated the possibility that sport participation elicits moral reasoning differently than general life situations. Bredemeier and Shields (1986b) found that high school and collegiate non-athletes had higher levels of moral reasoning than athletes. Athletes in high contact sports (e.g. basketball, football, and hockey) had lower levels of moral reasoning than athletes in a non-contact sport (e.g. swimming, track and field). Based on the literature, it is possible that moral reasoning plays a role in aggression tendencies in collegiate athletes; however the majority of the research has been conducted with youth sport athletes.

Continuing with Bredemeier’s description of aggression as “an interaction between an individual structure and environmental factors,” (1983, p. 43), it is no surprise that athletes’ aggressive tendencies are influenced by team norms and perceptions of their coaches’ aggressive beliefs (Guivalnau & Duda, 2002; Stephens & Bredemeier, 1996), which are also embedded in moral reasoning theory. Guivalnau and Duda (2002) examined the relationship of the team moral atmosphere to aggressive tendencies and potential gender differences among youth soccer players (mean age of 15.41 years). Moral atmosphere was defined as the interaction between community, parents, coaches, and teammates, whose values, beliefs, and behaviors influence their attitudes, decisions, and actions. Players were administered the Judgments about Moral Behaviors in Youth Sport Questionnaire (JAMBYSQ; Stephens et al. 1997), a measure of athletes’ perceived likelihood to aggress. The JAMBYSQ has three scenarios in which the athlete is hypothetically faced with the choice of engaging in an aggressive act to gain a sport advantage. This type of aggression would be classified as instrumental aggression because the harm done to the other player is secondary; obtaining the advantage in the game is first priority. Team norms were measured by the Revised Perceived Team Norms Questionnaire (Shields, Bredemeier, Gardner, & Bostrom, 1995). The first two questions assess the athletes’ perceptions of how many of their teammates would cheat, if a teammate would purposely injure an opponent to help win, and if the athlete thought that the coach would want the athlete to cheat or injure an opponent. There was a significant positive correlation between athletes’ perceived team pro-aggressive norms and their self-described likelihood to aggress, with the perceptions of the coach
being the most influential. The finding that coaches are an influential part of athletes’ likelihood to aggress is relevant to athletes of any age and competition level. Another area in the aggression literature that borrows from social learning theory and development of athletes is masculinity’s role on violence and aggression.

Masculinity is a socially constructed set of meanings, values, and practices that boys work at and stake a claim to, rather than something they grow into by virtue of being male (Grunear & Whitson, 1993). In the literature, perceived masculinity seems to have a positive relationship with aggression (Hargreaves, 1986). A number of studies have looked at the relationship between perceived masculinity and violence, particularly in high contact sports, such as football, hockey, and rugby where strength, power, dominance, and violence appear to be characteristic of the sport (Hargreaves, 1986; Theberge, 1989). The purpose of Weinstein, Smith, and Wisenthal’s (1995) research was to examine the relationship between masculinity and hockey violence. Participants were 75 players, aged 14 to 20 years, on high performance select hockey teams. Perceived masculinity was collected using the Brannon Masculinity Scale (Brannon & Juni, 1984) and aggression was measured using self-report questions, regarding the number of fist fights the players had engaged in and total penalty minutes recorded on game sheets. Results showed moderate support between higher perceived masculinity and increased violence, especially in the older players. Coulomb-Cabando and Rasce (2006) found that when gender was used as a moderating variable, males and females perceive and use sport aggression differently. Males were more approving of sport aggression that harmed another player in higher levels of play, while females showed no differences in approval among sport level. The researchers suggested that social pressure relating to masculinity were to blame. Males in our society are encouraged to be aggressive, well it appears to be socially unacceptable for females to be aggressive. However, participating in high contact sports, which are classified by Hargreaves (1986) and Theberge (1989) as highly masculine sports, is not the only predictor of violence. Smith and Stewart (2003) examined sexually aggressive views of 228 collegiate males involved in contact sport, non-contact sport, or neither (non-athletes). Using the Rape-supportive Attitude Scale (Lottes, 1988), a Likert-type scale that measures the endorsement of rape supportive attitudes, and the Hostility Toward Women Scale (Koss & Gaines, 1993), that measures hostility toward women, results showed that contact sport athletes were not more sexually aggressive than non-contact sport athletes. The results did show that men who were
highly competitive reported being more sexually aggressive, but that was not correlated with sport type. Sexual aggression is a form of aggression that warrants further research, but this thesis will not examine sexual aggression tendencies. Smith and Stewart (2003) suggest further research in this area should examine non-sport factors, primarily personality characteristics, combined with sport participation as a better predictor of aggressive behavior which is the purpose of the current study. Although masculinity as a determinant of sport aggression is not among the variables being examined, the purpose of this study is to investigate personality characteristics in athletes that might predict aggressive behavior. One theory that examines aggression from a societal view, as opposed to solely sport participation, is the cultural spillover theory.

Some sociologists have viewed aggression from a cultural spillover theory which claims that the more society accepts the use of violence as attainment to an end for which there is a widespread social approval, the greater the likelihood of violence in other areas of life, not just in sport (Bloom & Smith, 1996). Bloom and Smith (1996) conceptualized the cultural spill over theory at the interpersonal level for the purpose of examining their hypothesis that hockey violence spills over into other sports and into the players’ family life. Participants were 604 male hockey players aged 17 to 21 years, representing 98 Canadian hockey clubs, and 153 non-players recruited from Toronto schools. Data was collected through 50 minute interviews based on the approval of violence measure (Smith, 1979) that asked questions regarding approval of violence in varying sport and life situations, how many physical fights in the last three years the participant had been in when playing other sports, and how many physical fights in the last three years they had been in with a family member. Results showed select league players were more likely to approve of violence and to act violently in other sports, than house-league players and non-players. Older select-league players were more likely than younger select-league, all house-league players, and non-athletes to fight in other sports than younger players. House-league players had higher levels of family violence than select-league and non-players. Within house leagues players, unexpectedly the younger players had higher levels of family violence than the older players. These findings provide slight evidence of the spillover effect from hockey violence to other sports, but only in players over the age of 17 years, playing in highly competitive, professionalized leagues. However, the authors did not provide an explanation as to why house-league players under the age of 17 were more prone to family violence than older players house-
league players. Overall, the contradicting findings of this study provide minimal support for the spillover effect.

Keeler (2007) provides another study that examined the relationship between sport aggression and life aggression. Participants were 161 athletes from a variety of club sports, aged 18 to 43 years. Life aggression was measured using the Buss-Durkee Inventory (Buss & Durkee, 1957) and sport aggression was measured using the short form of the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975). Results showed that life aggression did not differ between sport contact types. However, the results did find that high levels of life aggression were related with high levels of sport aggression. If the spillover theory held true, then researchers would expect to see the opposite finding, high levels of sport aggression related to high levels of life aggression, to be true. Because the current study is not examining life aggression and due to the findings that contradict the spillover theory, this theory is also not applicable. The theories thus far have looked at personality characteristics, learned behaviors, and societal antecedents of aggression. The next section will examine a theory based on events prior to the observed aggressive act.

Anderson and Bushman (2000) developed the general aggression model that is based on the event, or input, prior to the aggressive act as a determinant to sport aggression. The general aggression model is based on an aggressive input that is either personal, such as beliefs or goals, or situations, such as playing a top rival, and the input then determines the likelihood for aggression. When the input is received, the player’s internal state is altered and this change is characterized by increased arousal, mood changes, and hostile thought sequences. The internal state change leads to appraisal and decision making by the athlete. If a football player’s mood changes after dropping a pass, he may choose to act aggressively. According to the theory, the aggressive act is either thought-out or an impulsive action. This theory is based around an incident and does not consider the athlete’s psychological characteristics that may influence the athlete’s appraisal of the incident and decision.

The purpose of this thesis is to examine athlete’s psychological characteristics that may influence aggressive behavior in sport. Based on the above mentioned theories and this thesis was influenced and inspired by the social learning theory and revised-frustration theory because they have both been applied to personality characteristics as possible causes for sport aggression. The various theories illustrate that aggression in sport is a complicated construct that has many
factors. Frustration and masculinity may provoke aggressive tendencies, but personal and situational factors also influence aggression in sport. In 2010, The Cincinnati Reds welcomed the St. Louis Cardinals to a three-game series with both teams in the running for first place. Prior to the game, Brandon Phillips of the Reds publically denounced his hatred for the Cardinals and as he stepped into the batter’s box exchanged words with Cardinals catcher Yadier Molina. A brawl ensued with both benches clearing. The events surrounding this brawl were both situational and personal, but what were the other causes for the aggression displayed by both teams? One possible antecedent of aggression is anger, but the varying types of aggression lead researchers to believe that not all aggression stems from anger. Thus, there are different types of aggression found in sport.

**Types of Sport Aggression**

Researchers divide aggression into two main categories: hostile and instrumental aggression (Husman & Silva, 1984). First, it is necessary to distinguish between aggression and assertive behaviors, which are forceful behaviors but authorized by rules of the game (Silva, 1980). Alberti and Emmons (1971) defined assertion as the direct, nonhostile, noncoercive expression of one’s thoughts, feelings, beliefs, or desires. An example of an assertive behavior is an athlete communicating a need to a coach, such as inquiring about playing time, in an appropriate way. In a competition, it is unlikely that a player would assertively communicate his need to tackle the quarterback, instead he would aggressively go after the quarterback. Assertive behaviors are forceful, directed behaviors which are not intended to injure an opponent (Husman & Silva, 1984). Assertion has been labeled as the socially desirable alternative to aggression (Keeler, 2007). The distinction between assertion and aggression lies in the intent, when one is being assertive the goal is to establish dominance, rather than when one is being aggressive and the goal is to harm the opponent (Thirer, 1994).

**Instrumental Aggression**

Instrumental aggression is behavior against another person that is used as a means of securing some reward or to achieve an external goal, such as victory. The harm to others is incidental and is not the perceived goal (Silva, 1983). An example of instrumental aggression is a hockey player giving a hard check to an opponent to gain control of the puck or a tackle in football to make a play. Instrumental aggression is considered acceptable sport aggression
because it is not accompanied by the intent to harm another athlete, unlike hostile sport aggression.

**Hostile and Reactive Aggression**

Hostile aggression is behavior performed with the sole intention of inflicting harm on a person (Silva, 1983). This type of aggression is always accompanied by anger. In 2008, Andrew Whitworth of the Cincinnati Bengals and John Henderson of the Jacksonville Jaguars were suspended when a typical line of scrimmage play turned hostile. Henderson wrapped Whitworth into a headlock while trying to gouge his eyes. Whitworth broke free and threw two punches at Henderson. Both players were charged with personal fouls and ejected from the game. In addition to ejections, Whitworth was fined $10,000 and Henderson was fined $15,000 for illegal hands to the face (Associated Press, 2008).

Hostile aggression is distinguishable from normal behavior that is within the rules of sport. Hostile aggression is never acceptable in sport, while instrumental aggression is not only allowed, but sometimes encouraged by coaches, teammates, parents, and fans. Such behaviors as tackling, checking, and hard man-to-man defense are legal components of sport, therefore considered instrumental aggression, but if these same actions were performed with the intent to injure, they would represent hostile aggression (Anshel, 1990). A type of aggression within the hostile aggression category is reactive aggression. Reactive aggression refers to hostile aggression in response to a perceived injustice, insult, or wrongdoing (Abrams, 2010). Reactive aggression is a type of hostile aggression because it is related to anger. A classic example of reactive aggression is the baseball pitcher who intentionally hits a batter after giving up a homerun in a previous inning or is seeking reprimand for a teammate who was hit by a pitch. This phenomenon, also called plunking or ‘chin music,’ is all too common and often leads to ejections and bench clearing brawls.

**Violence**

An extreme form of sport aggression is violence; harm-inducing behavior outside the rules of sport, bearing no direct relationship to the competitive goals of sport (Terry & Jackson, 1985). In high contact sports, such as American football, ice hockey, and rugby, certain aggressive and violent acts are encouraged and have a special status within the game (Russell, 1993). Encouraging aggressive acts is evident in high contact sports where “achievement of goals (scoring and winning) is predicated on the successful utilization of violence” (Messner,
However, the utilization of violence can lead to dangerous moments in sport, such as the Todd Bertuzzi and Steve Moore incident in the National Hockey League.

One of the most violent and documented case of sport violence occurred in a National Hockey League game between the Vancouver Canucks and the Colorado Avalanche involving Canuck player Todd Bertuzzi and Avalanche player Steve Moore (Hall, 2004; Kerr, G. 2004; Kerr, 2006; MacIntyre, 2004). In a previous meeting, the Canucks defeated the Avalanche, but during the game Colorado player Steve Moore knocked a Vancouver player unconscious. The Canucks reportedly promised revenge and one player indicated a “bounty” had been placed on Moore (Kerr, 2004). The incident occurred on March 8th, 2004; Colorado had an early lead of five goals and would eventually win the game, nine to two. Bertuzzi, a player known for his competitive physical approach to the game, followed Moore up the ice, grabbed his jersey and punched Moore in the head. Bertuzzi punched Moore a second time before driving his face into the ice. Lying in his own pool of blood, an unconscious Moore was laid on a stretcher and taken to the Vancouver General Hospital. Moore suffered a fracture to the C3 and C4 vertebrae of the neck and sustained cuts to his face. Bertuzzi received a 13 game suspension and later apologized to Moore and his family (MacIntyre, 2004). The aftermath of the Bertuzzi incident led Moore to early retirement from hockey due to post concussion syndrome. This example clearly marks the difference between sport aggression and violence. In hockey, there is a code and standards for engaging in fights. Fist-fighting in hockey is considered a form of sanctioned violence that is different from unsanctioned violence, such as hitting another player with a stick (Colburn, 1985, 1989). Olli Jokinen, an NHL player said, as reported by Naylor (2004), “There has always been a code in hockey. If you play dirty, you have got to play the price. You go drop your gloves and have a fair fight. That’s enough. What Bertuzzi did is not part of the game.” National hockey league player Ryan Maki (2004) reported in a newspaper article, “You push yourself to the limits, at the very edge of the rule book, and sometimes you can’t help yourself. You cross over. You make a bad decision, and you never look the same again.” Due to this instance and instances like it, it’s no surprise that hockey is considered to be the most aggressive team sport (Pederson, 2004) and thus sport aggression is often researched within the hockey setting. In the literature, hockey is categorized as a high contact sport, or collision sport. Implications for sport type will now be discussed.

**Sport Type and Aggression**
The previous example showcases an extreme form of sport violence that occurred in the National Hockey League, however hockey is not the only contact sport with examples of sport aggression. Bredemeier and colleagues described aggression as “behavior that is seen as a result of the interaction between an individual’s organized meaning structures and environmental factors” (Bredemeier, 1983). Based on this assumption, research has focused on the type of sport and it’s relation to aggressive athletes. Generally, sports have been broken down into a continuum from low contact to high contact sports “based upon the degree that physical contact is an implicit (as opposed to incidental) part of appropriate player behavior” (Silva, 1983, p 442). Contact sports are sports that allow physical contact between players and non-contact sports are those that do not permit physical contact between players (Smith & Stewart, 2003). Contact sports have been divided into contact and collision sports in some instances. Collision sports have been characterized as sports with a large number of physical collisions and tackles and would include sports such as rugby, hockey, and football (Gabbett, 2005).

Contact team sport athletes are more accepting of aggression that non-contact, individual athletes (Conroy, Silva, Newcomer, Walker, & Johnson 2001; Coulomb-Cabagno & Rascle 2006; Gardner & Janelle, 2002; Keeler, 2007; Maxwell, 2004; Mintah, Huddleston, &Doody, 1999; Silva, 1983). Bredmeier and Shields (1986b) investigated the differences between athletes and non-athletes moral reasoning considering both life and sport contexts. The article employed two studies. The first examined the differences between 50 high school and 50 college male and female students, half were non-athlete students and half were basketball players representing the athletes. Each participant was interviewed. The interview consisted of four hypothetical moral dilemmas, two moral dilemmas in life situations and two sport specific moral reasoning dilemmas. Eight research assistants were trained to read and code the interviews based on a model of moral development (Haan 1978, 1983). The results showed that males had lower moral reasoning in both sport and life contexts. In the collegiate sample, non-athletes scored higher moral reasoning than athletes, and so the authors wanted to determine if athletes from a different sport would yield the same results. Ten male and ten female collegiate swimmers were added to the previous sample of collegiate basketball players and non-athlete students. Results showed that the swimmers scored higher sport moral reasoning than basketball players, but moral reasoning scores did not differ from the non-athletes. Basketball is a contact, team sport, and swimming is an individual, non-contact sport. The findings from this study illustrate the need to
differentiate between types of sport when comparing athletes to non-athletes, as well as to other athletes. The authors suggest that contact sports, such as basketball, require contact with other players which may cause the temporary suspension of moral beliefs, in order to gain control during the sport. The finding that contact and non-contact athletes have different levels of moral reasoning illustrates how imperative it is to differentiate between the sports in the literature.

The purpose of Mintah, Huddleston, and Doody’s (1999) study was to examine the extent of agreement or disagreement with the use of hostile aggression and the justifications for aggression provided by male athletes in contact and semi-contact sports. Contact sports were represented by football and wrestling and semi-contact sports were soccer and basketball. A shortened version of Bredemeier’s (1975) Athletic Aggression Inventory was used to measure hostile and instrumental aggression and the Mintah Huddleston Aggression Inventory (MHAJI) to explore the athlete’s justifications for aggressive behavior. The semi-contact sport athletes agreed more with the use of instrumental aggression than contact sport athletes and inversely, contact sport athletes agreed with the use of hostile aggression more than the semi-contact sport athletes. The authors concluded that contact sports might not recognize acts of instrumental aggression as intense enough for contact sports, such as football and hockey. The authors suggest that further research be conducted to test aggression differences between sports and the justifications of aggressive behaviors made by athletes. The current study samples from two contact sports, hockey and football, as opposed to sampling from one type of contact sport. The sports sampled in the previous study were all team sports. Additional research has been conducted looking at the differences between type of sports and aggression.

Similarly, the purpose of Conroy, Silva, Newcomer, Walker, and Johnson’s (2001) study was to investigate changes in perceived legitimacy across various sports situations, including age of the athlete, game importance, probability of punishment, and risk of injury. It was hypothesized that sex, age, and collision sport participation would be predictors of perceived legitimacy of aggression. Participants were 1018 children and adolescents that ranged from 8 to 19 years of age. The Sports Behavior Inventory was created to assess legitimacy of aggression. The inventory contains ten sport situations that portray aggressive, rule-violating behavior in baseball, basketball, football, soccer, ice hockey, and field hockey. Each scenario was followed with questions asking if the behavior was acceptable at various levels (i.e., elementary school level, recreational level, up to the professional level), and if the behavior was acceptable in five
different sport situations (i.e., when there is no risk of getting caught by the official, if there were only two minutes left in the game and the score was close). Results showed that participants perceived aggressive sport behavior as being more legitimate as level of competition increased, when the probability of punishment was low, and when perceived instrumental gains (i.e. winning, gaining yards) were high. Perceptions of legitimacy decreased if the action would result in the opponent being seriously injured (hostile aggression). Aggressive behavior was perceived as most legitimate when the act occurred within the last two minutes of a close game, if the situation depicted was in retaliation, or if the aggressive behavior would help win a championship. The authors suggest this finding is due to the socialization of males and contact sport athletes, as supported by social learning theory. Conroy and colleagues (2001) provide further support for continued aggression research with male contact sport athletes.

The aim of Maxwell’s (2004) study was to determine if anger rumination was an antecedent of sport aggression, as well as, the influence of gender, sport type (individual or team), competitive level, experience, and provocation on sport aggression. Rumination is the propensity to think about past experiences that have provoked negative effect in the form of anger. Participants were 305 male and female athletes from both contact sports and non-contact sports. The four-factor Anger Rumination Scale (Sukhodolsky, et al. 2001) and four questions designed to reflect aggressive acts that could occur in any sport were administered to the athletes. Results showed that males, regardless of sport, had higher levels of reported aggression than females. Team sport athletes had higher levels of reported aggression than individual athletes. This article is further support that male, team contact sport athletes reported the highest levels of aggression among sport types. The author suggests that there is a lack of research examining the cognitive factors that contribute to the occurrence of aggression in sport and additional studies should be conducted examining such factors. The current study aims to fill this gap by examining possible factors that contribute to the occurrence of aggression in sport in male contact sport athletes.

As referenced earlier, the first purpose of Keeler’s (2007) study was to examine if adult men and women have the same pattern of self-perceived sport aggression, life aggression, and assertion across collision, contact, and non-contact sport types. The second purpose was to explore the relationship between sport hostile and instrumental aggression, life aggression, and assertion. Participants were one hundred and sixty-one male and female athletes from high
contact, contact, and low contact club sport teams. Data was collected via a survey, with a one-time collection. Life aggression was measured using the Buss-Durkee Inventory (Buss & Durkee, 1957), life assertion was measured on the Rathus Assertiveness Schedule (Rathus, 1973), and sport aggression was measured using the short form of the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975). Results shows that males reported higher levels of aggression than females, however type of sport did not show significant differences. There were no significant differences in hostile and instrumental aggression between male collision, contact, and non-contact sport athletes. This research contradicted previous research that high contact sport athletes, such as football and ice hockey, are more aggressive than low and non-contact sport athletes. This finding does support research conducted by Lemieux and colleagues (2002). The authors suggest that future research include different types of sport, both team and individual sports, and a better distinction between high, low, and no-contact sports. The current study’s participants were male athletes from high contact team sports, thus the aim of the study is not to differentiate between the types of sports.

The purpose of Lemieux, McKelvie, and Stout’s (2002) study was to examine off-field aggression in athletes and non-athletes. Participants were male athletes and non-athletes from two universities and each athlete was paired with a non-athlete that matched him in age, university attended, year of study, height and weight (within two inches and ten pounds). Hostile aggression was measured with Bush and Perry’s (1992) Aggression Questionnaire and Social Desirability was measured by the Balanced Inventory of Desirable Responding (Robinson, Shaver, & Wrightsman, 1991). Athlete participants were tested individually or in groups and non-athlete participants were tested individually. Because contact sports require more physical contact; it was hypothesized that the athletes would exhibit more hostile aggression in contact sports than in non-contact sports. The results showed that between contact sport athletes, non-contact sport athletes and non-athletes, high scores on aggression questionnaires were correlated to body size, regardless of the participant’s sport-type or participant’s status as an athlete or non-athlete. Contact athletes reported more hostile aggression than non-contact athletes, although the corresponding group of bigger non-athletes reported more hostile aggression than the corresponding group of non-athletes. The authors provide several possible reasons for these findings. One consideration is that contact sports could attract people who already act aggressively or engaging in the contact sport could promote aggressive behavior in
The finding of higher aggression in contact athletes than in non-contact athletes is consistent with social learning theory. However, social learning does not explain why non-athletes with larger builds scored higher in aggression than athletes with smaller builds. The theory would suggest that athletes, regardless of sport type, would be more aggressive than non-athletes. Another explanation is that contact sport athletes might not consider acts of instrumental aggression aggressive enough for contact sport play. This explanation is supported by Bredemeier and Shields’ (1986) finding that contact sport athletes considered intentional aggression, aggression with intent to harm, to be equivalent to intense competitive play, thus they could not differentiate between types of aggression.

Thus far, the literature has examined differences between high contact sports, low contact sports, and non-contact sports. Based on the findings, authors have suggested that overall males are more aggressive than female athletes and high contact sport athletes are more aggressive than low and non-contact sport athletes. Ice hockey is a high contact sport in which player-to-player contact is the most frequent mechanism of sustained injuries (Agel, Dompier, Dick, & Marshall, 2007). Aggression in ice hockey accounts for 50% of all injuries (Lorentzen, Werden, & Pietila, 1988).

Hockey Aggression

Of all sports, hockey is considered to be the most aggressive (Pederson, 2004) and is usually cited as the standard for male aggression in sport (Tenenbaum & Kirker, 2003), therefore hockey has been highly researched in the aggression literature. As stated by Colburn (1985, p. 156)

“Here behaviors [such] as fist-fighting, were it to occur on the street instead of on the ice, would qualify as an instance of legal assault. In fact, fist-fighting along with other assaults are prohibited and offenders penalized by the rules of ice hockey. Yet, to an extent unparalleled in any other major sport, fist-fights in amateur and professional ice hockey tend to be fairly commonplace and unremarkable events to players, fans, and officials, alike.”

Colburn’s (1985) research on hockey violence was focused on how players define violence in hockey and the typical views of violence. In an interview conducted by Colburn, a professional hockey player said, “I think fights, once in a while, they’re alright… a part of the game” (p. 156). There appears to be a protocol surrounding hockey fights, and deviating from the protocol, for example when fights involve hockey sticks, the fight becomes an illegitimate form
of sport violence. Colburn’s accounts from hockey players demonstrate the common place of aggression in hockey and thus the need for further studies regarding hockey aggression and violence. Even if fist fighting is considered “a part of the game,” an incident like the Bertuzzi-Moore fight, as described previously, is an example of what can happen when a fight escalates. Another example of violence that began as a fist fight occurred in the National Hockey League game, between Donald Brashear and Marty McSorley. The two players engaged in a fist fight early in the game. Brashear appeared to have won the fight and thus given time in the penalty box. With three seconds remaining in the game, McSorely hit Brashear in the head with his hockey stick. Brashear immediately hit the ice and was diagnosed with a grade 3 concussion. McSorely faced assault charges and although not found guilty, never returned to the National Hockey League (Associated Press, 2000). By including hockey players in the current study and assessing possible antecedents to their aggressive behavior, a better understanding of how these events occur may be reached.

As some hockey player’s age and level of play increases, there is an increase in their perceived legitimacy of aggressive behavior (Loughead & Leith, 2001; Visek & Watson, 2005). The purpose of Visek and Watson’s (2005) study was to examine male ice hockey player’s perceived legitimacy of aggression and professionalization of attitudes across competition level and age. They recruited 87 male ice hockey players at varying levels of play, 18 youth players (\(M = 8.75 \text{ years old}, \ SD = 1.13\)), 23 high school players (\(M = 14.70 \text{ years old}, \ SD = 1.69\)), 31 collegiate athletes (\(M = 19.94 \text{ years old}, \ SD = 1.93\)), and 15 professional players (\(M = 25.40, \ SD = 4.36\)). Participants were given a hockey specific Sport Behavior Inventory (Conroy, et al. 2001) to measure perceived legitimacy of aggression. Perceived legitimacy of aggression in sport refers to the extent to which aggression and violence in sport are perceived to be necessary, good, or justified (Smith, 1983). In addition, participants were shown video clips from real high level adult games and were asked to rate the clarity with which each video clip depicted an aggressive behavior on a scale of 1 (very ambiguous) to 4 (extremely clear). Professionalization of attitudes was measured with a modified version of the Context Modifies Webb Scale (Webb, 1969). Results signified as ice hockey players increased in age and competitive level, there was an increase in their perceived legitimacy of aggressive ice hockey behavior and their attitudes about sport tended to become increasingly professionalized. The professionalization of athletes’ attitudes toward play can be characterized as the extent to which they place increasing
importance on winning at the expense of skill acquisition and fair play (Webb, 1969). It seems that the more professionalized the players views became, the more emphasis was placed on winning at the cost of fairness or sportsmanship. Therefore, the benefits of playing aggressively, (i.e. winning the game, being selected to teams), outweigh the perceived costs of aggression, and players below the professional level may believe aggressive behavior is necessary to play professionally. If players believe that aggressive acts are more acceptable as they increase in level of play, it is more likely that players would become more aggressive. The participants in the present study will be collegiate athletes from a NCAA Division 1 university and playing at an extremely competitive level. Based on this study, this level of players would perceive aggression as legitimate and have professionalized views of aggression, thus a good population to better understand sport aggression tendencies. Two suggestions as to why hockey players are aggressive is because they believe it is acceptable to act aggressively in higher levels of sport, as supported in Visek and Watson (2005), or because of the feedback they are receiving from coaches and teammates (Loughead & Leith, 2001).

As previously reviewed, Loughead and Leith (2001) examined the influence of level of play on hostile and instrumental aggression of players. Additionally, they explored the relationship between approval of instrumental and hostile aggression and the observed aggressive behavior of players. The participants were in three levels of play, Atom (10-11 years old), Peewee (12-13 years old) and Bantam (14-15 years old). Perceived aggression was measured with an adapted version of the Bredemeier Athletic Aggression Inventory-Short (Bredemeier, 1975) which differentiates between hostile and instrumental aggression. A measure of aggressive behavior was recorded using penalties from game summary sheets and included all penalties awarded by the referee, both hostile and instrumental. Hostile penalties included elbowing, slashing, boarding, roughing, and cross-checking, high-sticking, butt-ending, fighting, spearing, kneeing, checking from behind, charging, and face masking. Instrumental aggressive penalties included tripping, hooking, holding, and interference. Penalties considered neither instrumental nor hostile were not included in the analyses. In line with previous research, the older players were more accepting of perceived hostile aggression than the younger players. However, younger players were more accepting of perceived instrumental aggression. One explanation for this is that beginning levels of play are focused on teaching the fundamentals to develop a skill for the sport. Based on the results of this study, it would appear that younger
players use instrumental aggression more than older players to compensate for their lack of skill. As the level of play increases, the focus of practice is less on fundamentals and more on player evaluation for moving onto the next level. Perhaps there is an emergence of hostile aggression because according to Vaz (1979), players at higher competition levels are measured according to their aggression and physical skills. Not surprisingly, the more players approved of hostile aggression the more hostile penalties they received. Overall the players, regardless of level, were less approving of hostile aggression, but there were almost twice as many recorded hostile penalties than instrumental penalties. Because aggression is embedded in hockey, athletes’ ability to distinguish between hostile and instrumental aggression may be more difficult than for athletes who play in less aggressive sports.

Wattie, Cobley, Macpherson, Howard, Montelpare, and Baker (2007) examined if relative age was related to physical injury in youth ice hockey players. Relative age refers to the potential advantages or disadvantages that result from age differences between athletes within an age group. In the previous study by Loughead and Leith (2001), they examined players on teams separated by age, for example the Atom groups with players aged 10 to 11 years and the Bantam group with players aged 14 to 15 year old, so Wattie and colleagues would be interested in the differences between injuries in older players of the bantam group (the 15 year olds) and younger players (the 14 year olds) in the same age cohort. Results were calculated using emergency room visits by boys 10 to 15 years of age who visited pediatric emergency departments with hockey related injuries. Players were grouped into monthly quarterlies (i.e. January, February, and March birthdays were quartile 1) and injuries were categorized as severe if the player was admitted to the hospital and non-severe if the player was not admitted to the hospital. Of the total hockey injuries reported between 1995 and 2002 (4,736 total), 46% were accounted for by the oldest group of 14 to 15 year old players. Within cohorts, prevalence of injury was highest among the older players compared to the younger players. This study did not indicate if the injuries were a result of aggressive behavior, such as a fight or hard check, or if the player sustained injury due to nonaggressive game play. Failing to include this information is one limitation of the study, thus it was hard to conclude if higher injuries are related to aggression in hockey or something else. The authors suggest that the number of injuries sustained by hockey players could be correlated with playing time and future research should be conducted to examine this relationship. Based on this suggestion, playing time was included in the
demographic section of the current research, as well as, the number of injuries sustained while playing their current level of sport.

Sport aggression has been studied in terms of gender (Silva, 1983; Eagly & Steffen 1986; Tucker & Parks 2001; Coulomb-Cabando & Rascle, 2006), age and level of play (Visek & Watson, 2005; Wattie et al. 2007), sport type (Silva, 1983; Mintah, et al. 1999; Conroy et al. 2001; Gardner & Janelle, 2002; Maxwell, 2004; Coulomb-Cabango & Rascle 2006; Keeler, 2007) coach and team climate (Stephens & Bredemeier, 1996; Loughead & Leith, 2001; Guiverneau & Duda, 2002), situational contexts (Husman & Silva, 1984), frustration (Dollard et al. 1939; Berkowitz, 1968, 1988; Harrell, 1980), catharsis (Bushman, et al. 1999; Bushman, 2002; Cox, 2002; Jones, et al. 1996), social learning (Bandura, 1973; Smith, 1974, 1975; Silva,1983;Mugno & Feltz, 1985;), moral reasoning (Bredemeier & Shields, 1984, 1986a, 1986b 1994; Hall 1981); and masculinity (Hargreaves, 1986; Theberge, 1989; Messner, 1990; Weinstein et al. 1995). Yet, the antecedents of sport aggression are still relatively unknown. The present study will add to the literature by examining aggression in male athletes in contact sport and additional variables of perfectionism and anxiety, as possible factors influencing sport aggression.

**Perfectionism**

World class athletes such have a history of exhibiting extreme perfectionism (Flett & Hewitt, 2005), for example, John McEnroe, Bobby Jones, and Serena Williams. Although these athletes have achieved immense success in their respective sports, if their perfectionistic tendencies are not controlled they could have experienced negative consequences attributed to high levels of perfectionism. Formally ranked World Number 1 tennis player Serena Williams was penalized one point for unsportsmanlike conduct during the U.S. Open semifinals in 2009 after arguing a call with a line judge. Williams faulted on her first serve and on her second serve, a line judge called a foot fault, making it a double fault, and the score 15-40, putting opponent Kim Clijsters one point from victory (Associated Press, 2009b). Instead of taking her next serve, Williams began shouting and cursing at the line judge. After William’s tirade, the line judge involved the chair umpire and tournament referee. Williams had been given a code violation after losing the first set for breaking her racket, so the chair umpire awarded Clijsters a penalty point ending the match. Serena Williams was later fined $82,500 for her outburst and could be suspended from the tournament if she has another “major offense” in the next two years.
(Fendrich, 2009). Per the definition of aggression as the infliction of an aversive stimulus, physical, verbal or gesture upon one person by another (Tenenbaum, et al., 1996), Serena Williams exhibited sport aggression. The outcome goal for athletic competition is to win and prior to William’s outburst, she was losing the match, and thus she may have been experiencing frustration. Her behavior can partially be explained by the completion hypothesis that frustration does not always lead to aggression, but it increases the likelihood of aggression by increasing arousal, anger, and other thoughts and emotions (Berkowitz, 1968, 1988). However, it is also possible that her tirade was influenced by her self-described perfectionism (Williams, 2003). To examine this possible relationship, perfectionism will be defined and further explored within the sport context.

**Defining Perfectionism**

Perfectionism is defined as, “striving for flawlessness” (Flett & Hewitt, 2002, pg. 5) and is traditionally viewed as an enduring personality trait (Hewitt & Flett, 1991). One defining characteristic of perfectionism is the setting of excessively high personal standards of performance (Burns, 1980; Hamachek, 1978; Hollander, 1965; Frost, Marten, Lahart, & Rosenblate, 1990; Pacht, 1984). Perfectionism is a characteristic that varies along a continuum; an individual may have varying amounts of overall perfectionism and varying amounts of each characteristic of the subscales (Frost, et al. 1990). Both Frost et al. (1990) and Hewitt and Flett (1991) have identified subscales of perfectionism reflected in two Multidimensional Perfectionism Scales that will be further explained.

Perfectionism is viewed as a multidimensional construct (Frost et al., 1990; Hewitt & Flett; 2002) that is compromised of both intrapersonal and interpersonal components (Blatt, 1995). Intrapersonal perfectionism reflects the extent to which people make self-referenced judgments about the attainment of their own high personal performance or behavioral standards. Interpersonal perfectionism reflects the extent to which people believe that they (a) experience pressure to reach other people’s high standards, (b) are judged harshly by others with respect to the high behavioral or performance standards, and/or (c) judge others with respect to the high behavioral or performance standards that they expect others to meet (Blatt, 1995 as cited in Dunn, Gotwals, & Dunn, 2005).

Hamachek (1978) distinguished perfectionists between adaptive and maladaptive perfectionists. Adaptive perfectionists, also called normal perfectionists, are those who set high
standards for themselves but “feel free to be less precise as the situation permits” (Hamachek, 1978, pg. 27). Maladaptive perfectionists, also called neurotic perfectionists, set high standards but do not allow room for mistakes, therefore they never feel that anything is done well enough (Frost, et al. 1990). Slaney, Rice, and Ashby (2002) concluded that some aspects of perfectionism contribute to positive outcomes (adaptive perfectionism) rather than negative outcomes (maladaptive perfectionism) and therefore it is important to distinguish between perfectionism dimensions. Flett and Hewitt (2005) view perfectionism as a primarily negative factor that attributes to maladaptive outcomes for athletes. One distinction between adaptive and maladaptive perfectionism involves setting high personal standards which are accompanied by tendencies for overly critical evaluations of one’s behavior (Frost, et al., 1990).

Several overly critical evaluations have been described in the literature and are the subscales for the Multidimensional Perfectionism Scale- F (Frost, et al. 1990). One evaluative tendency for perfectionists is concern over mistakes (COM) in performance. Adaptive perfectionists allow for a greater acceptance of mistakes and minor flaws in their performance to still consider their performance successful. Concern over mistakes is most closely related to symptoms of psychopathology (Frost, et al., 1990). Maladaptive perfectionists are overly concerned with mistakes and even minor flaws in performance are likely to result in the perception that their standards have not been met (Frost, et al., 1990). Over concern for mistakes lead maladaptive perfectionists to perform under a fear of failure rather than the need for achievement, and may lead to negative feelings due to the inability to achieve true perfectionism (Hamachek, 1978; Mitzman, Slade, & Dewey, 1994). Maladaptive perfectionists rarely feel good about their performances (Pact, 1984) and are vulnerable to criticism from others (Blatt, 1995).

It is suggested that highly perfectionist athletes fear failure and mistakes to such an extent that their enjoyment for sports is diminished and may result in impeded performance (Bunker & Williams, 1986; Burns, 1980; Gauron, 1984). To further examine this, the purpose of Frost and Henderson (1991) was to see if perfectionism, especially concern over mistakes, was associated with negative reactions to mistakes in athletic performance. Forty females participating in five Division III varsity sports and the head coach for each sport were given the Multidimensional Perfectionism Scale (Frost, et al. 1990), the Sport Competition Anxiety Test (SCAT; Martens, 1977), to measure cognitive and physiological aspects of anxiety, the Trait Sport-Confidence
Inventory (TSCI; Vealey, 1986), to measure athletes’ certainty about their ability to be successful in sport, and a general sports orientation questionnaire that was developed to measure general attitudes toward athletics and athletic competition. Items on the questionnaire were generated to measure personal performance that emphasizes success, emphasizes failure or mistakes, and tendencies to focus on what other people may think about one’s athletic performance. Results found that Concern Over Mistakes (COM) was the dimension of perfectionism most closely and consistently related to negative reactions to mistakes. Athletes who scored high in Concern Over Mistakes reported more anxiety connected with sport performance and had lower confidence in competitive situations than athletes who scored low in COM. Additionally, athletes who scored high in COM were more worried about other’s reaction to their mistakes, more likely to feel they had let themselves down, and ruminate about mistakes than athletes who scored low in Concern Over Mistakes. Overall, the correlation between Concern Over Mistakes and failure orientation was significant, further supporting the hypothesis that this dimension of perfectionism is closely related with negative emotions in sport.

Similarly, in a study of 87 collegiate athletes, Gotwals, Dunn, and Wayment (2003) found that the athletes who were dissatisfied with their performance and had low self-esteem had higher scores on the Concern Over Mistakes subscale than athletes with higher levels of self-esteem. Those athletes also doubted their actions and perceived their parents as being overly critical of them, two additional perfectionist evaluative tendencies.

As mentioned, a second evaluative tendency is a perfectionists’ sense of doubt about the quality of one’s performance (Burns, 1980; Hamachek, 1978; Frost, et al. 1990). Third, perfectionists tend to place considerable value on their parents’ expectations and evaluations of their performance and believe their parents have set standards they cannot meet (Frost, et al., 1990). Similar to parents’ expectations, a fourth evaluative tendency is the perception that one’s parents are overly critical and perceive harsh punishment when something is done less than perfect. The sixth overly critical tendency is an overemphasis on order and organization. The original six hypothesized dimensions of perfectionism are Personal Standards (PS), Concern Over Mistakes (COM), Parental Expectations (PE), Parental Criticism (PC), Doubts about Actions (DA), and Organization.

One debate in perfectionism research is if perfectionism is a global personality trait (e.g. Frost et al., 1990; Hewitt & Flett, 1991; Hewitt, Flett, Besser, Sherry, & McGee, 2003) or a
general personality trait (e.g. Missildine, 1963; Shafran, Cooper, & Fairburn, 2002, 2003). Thus, the purpose of Dunn, Gotwals, and Dunn (2005) was to determine if multidimensional perfectionism levels vary within situational contexts. They examined collegiate student-athletes levels of global perfectionism and their corresponding levels of perfectionism in sport and academic achievement domains. Participants were 133 males (mean age of 21.59 years old) and 108 females (mean age of 21.44 years old) from basketball, Canadian football, field hockey, ice hockey, rugby, soccer, and volleyball collegiate teams. Overall perfectionism was measured with Hewitt and Flett (1991) Multidimensional Perfectionism Scale that has three subscales, Self-Oriented Perfectionism (SOP), Socially Prescribed Perfectionism (SPP), and Other-Oriented Perfectionism (OOP). Self-oriented perfection is the degree to which individuals set and expect the achievement of extremely high personal standards. Socially prescribed perfectionism is the degree to which individuals believe others in their environment (i.e. parents, significant others, coaches) place high standards and expectations to be perfect. Other-oriented perfectionism is the degree to which individuals set high standards and expect perfection from other people in their environment. Items are answered on a 7-point Likert scale (1 = strongly disagree to 7 = strongly agree). Scores are given for each subscale, with higher scores indicating higher levels of perfectionism. To measure perfectionism in the sport and school domain, the Hewitt-MPS was modified into the Sport-MPS and The School-MPS, directing participants to consider their perfectionist orientations “toward their involvement in sport” or “toward their involvement in academic studies at school.” The three scales were given to athletes 48 hours prior to competition. Results showed that males had significantly higher subscale means for SOP and OOP in comparison to their SOP and OOP dimensions on the school-MPS, illustrating that perfectionist tendencies change with situational contexts. This finding aligns with previous research that found that career mothers’ levels of perfectionism varied significantly as dependent on the situational context (Mitchelson & Burns, 1998). On average, student-athletes had higher perfectionist tendencies in sport than in school and males had higher perfectionist tendencies than females. The authors suggest this could be due to findings that men tend to place higher value on sport achievement than females (Eccles & Harold, 1991; Ruska, 2003). Overall, the article provides support for the notion that perfectionism fluctuates with situational contexts and that males tend to score higher in perfectionism tendencies than females.

**Measures of Perfectionism**
Prior to the Multidimensional Perfectionism Scales (Frost, et al. 1990; Hewitt & Flett, 1991) perfectionism was measured using portions of previously existing scales that measured broader constructs, such as the Dysfunctional Attitudes Scale was used by Burns (1980) to measure concern over mistakes and a part of the Irrational Beliefs Test (Jones, 1968) to measure personal standards. No scale was available that measured the dimensions of perfectionism.

Frost and colleagues (1990) generated new items measuring perfectionism, as well as, some items from previous measures for the Multidimensional Perfectionism Scale (MPS-F). The scale initially contained 67 items that were reduced to 35 items after validity and reliability testing. The Concern Over Mistakes subscale repeatedly showed the most variance and thus, Concern Over Mistakes appears to be the most central component of perfectionism. The Organization subscale showed the weakest correlation with the other subscales, therefore it doesn’t appear to be a central component of perfectionism. The scale has an overall perfectionism score and scores for each of the six subscales.

Frost et al. (1990) administered the newly constructed 35-Item Multidimensional Perfectionism Scale to 72 undergraduate females to determine if perfectionists experienced higher levels of psychological distress. Psychopathology was measured using the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983), the Depressive Experiences Questionnaire (DEQ; Blatt, D'Afflitti, & Quinlan, 1976), and the Situational Guilt Scale (Klass, 1987). Their results indicated that people high in perfectionism experience higher frequency of psychopathology than people low in perfectionism. Results also suggest that even though most dimensions of perfectionism are associated with psychological distress, such as depression and guilt, the setting of high Personal Standards and Organization are associated with adaptive perfectionism.

Like Frost and colleague’s (1990) Multidimensional Perfectionism Scale, Hewitt and Flett’s (1991) Multidimensional Perfectionism Scale views perfectionism as a multidimensional construct and identified dimensions as either toward the self (self-oriented perfectionism), toward others (other-oriented perfectionism) and a third dimension that involves the perception that others are imposing unrealistic demands on the self (socially prescribed perfectionism). Self-oriented perfectionism includes behaviors such as setting exacting standards for oneself and stringent evaluations of one’s behavior. Self-oriented perfectionism also includes an aspect of intrinsic motivation that is driven by attaining perfection and striving to avoid failure.
Correlations have been found between the Personal Standards subscale of the Frost-MPS and the Self-Oriented Perfectionism subscale (Enns & Cox, 2002). The Hewitt-MPS has 45 items that are answered on a 7-point Likert scale (1 = strongly agree to 7 = strongly disagree).

It has been suggested that self-oriented perfectionism represents an adaptive dimension of striving and research has found positive correlations between self-oriented perfectionism and the achievement striving facet of conscientiousness (Cox, Enns, & Clara, 2002; Enns, Cox, Sareen, & Freeman, 2001). Therefore, the purpose of Hill, Hall, and Appleton (2010) was to compare the relationship between self-oriented perfectionism and conscientious achievement striving in elite junior athletes. Participants were 255 junior male cricket players. Ages ranged from 13 to 20 years old (\(M = 15.51\) years of age). Self-oriented perfectionism was measured using the Hewitt-MPS (Hewitt & Flett, 1991). Conscientious achievement was assessed using the Achievement Striving subscale (C-AS) of Costa and McCrae’s (1992) Revised NEO personality Inventory (NEO-PI-R). This subscale measures high aspirations, diligence, and a desire for success (e.g. “I strive to achieve all I can.”), on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Three subscales from the Frost-MPS (Frost, et al. 1990) were used to measure Personal Standards (PS), Concern Over Mistakes (COM) and Doubts About Actions (DA). The three other subscales (the need for Organization, Parental Criticism, and Parental Expectations) were excluded from the scale. Fear of failure was measured using a short version of the Performance Failure Appraisal Inventory (Conroy, Willow, & Metzler, 2002). The scale is a measure of cognitive appraisals associated with the fear of failure (e.g. “When I am failing I am afraid that I might not have enough talent.”) and has four items that are answered on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Self-criticism was assessed using the Self-Criticism subscale of the Attitudes Toward Self Scale (ATS; Carver & Ganellen, 1983). The subscale has four items on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Results showed that a large positive correlation between conscientious achievement striving and self-oriented perfectionism. Both personality factors were positively related to personal standards, perfectionistic striving and self-criticism. Only Self-Oriented Perfectionism demonstrated a positive correlation with Concern Over Mistakes, fear of failure, and negative reactions to imperfection. The relationship between self-oriented perfectionism and maladaptive dimensions of perfectionism (concern over mistakes, fear of failure, and negative reactions to
imperfection) supports that self-oriented perfectionism is best considered a vulnerability factor for athletes (Flett & Hewitt, 2005).

Other-oriented perfectionism leads to other-directed blame when perfectionism is not achieved and is characterized by setting unrealistic standards for significant others, placing importance on other people being perfect, and stringently evaluating others’ performance (Hewitt & Flett, 1991). This dimension could be related to interpersonal frustrations, such as cynicism, but also may be associated with desirable attributes, such as leadership ability.

Socially prescribed perfectionism involves the need to attain standards and expectations prescribed by significant others, such as coaches, parents, and peers (Hewitt & Flett, 1991). A socially prescribed perfectionist would believe that significant others have unrealistic standards and exert pressure on them to be perfect. Frost, Heimberg, Holt, Mattia, and Neubauer (1990) found socially prescribed perfectionism to be highly correlated with Frost et al.’s (1990) Concern Over Mistakes subscale. Because the standards set by others are perceived as excessively high, failure experiences and emotional states, such as anger and anxiety, should be relatively common in socially prescribed perfectionists. These emotional states could stem from a perceived inability to please others and the belief that others are being unrealistic in their expectations. High levels of socially prescribed perfectionism may result in a sense of learned helplessness due to a perceived incongruence between one’s own behavior and the unrealistic standards prescribed by others.

Validity and reliability for the Multidimensional Perfectionism Scale-H was obtained in a set of five studies (Hewitt & Flett, 1991), establishing the relationship between the three dimensions of perfectionism and symptoms of psychopathology, such as anxiety, drug and alcohol abuse, and depression. Using the Hewitt-MPS in a study of 77 psychiatric patients, self-oriented perfectionism was correlated with alcohol abuse, and other-oriented perfectionism was correlated with narcissistic and antisocial personality patterns, as well as, drug abuse. Socially prescribed perfectionism was correlated with schizoid, avoidant, compulsive personality patterns, as well as, anxiety, somatoform, hypomania, dysthymia, alcohol abuse, psychotic thinking, and psychotic depression. One factor that distinguishes between the dimensions of perfectionism is controllability. Self-oriented perfectionism and other-oriented perfectionism are under an individual’s control, whereas socially prescribed perfectionism is not under an individual’s control. This external locus of control associated with socially prescribed perfectionism could
explain the number of correlations between socially prescribed perfectionism and psychopathology patterns.

Both Multidimensional Perfectionism Scales have been used to measure perfectionism in athletes, however they are not sport-specific scales. Anshel and Eom (2003) argued that a domain specific measure of perfectionism was needed because items on the Frost-MPS and Hewitt-MPS may have ‘questionable application in sport settings’ (p. 260) and that items on the scales may under-represent certain areas of perfectionism in sport, such as coach influence. As referenced above, Dunn et al. (2002) devised a Football-MPS to measure athlete’s level of perfectionism within the football domain as compared to the academic domain. Identifying that perfectionism levels varied among achievement domains, Dunn and colleagues suggested that research be conducted to establish conduct validity for their sport specific measure of perfectionism. Thus, the purpose of Dunn, Causgrove- Dunn, Gotwals, Vallance, Craft, and Syrotuick (2006) was to obtain further construct validity for the Sport-MPS (formally called the Football-MPS). The first sample was conducted with 276 male teenage Canadian football players ($M = 18.29$ years old). Sample two was 229 male Pee Wee and Bantam ice hockey players ($M = 14.15$ years old), sample three was 221 Canadian intercollegiate male and female athletes ($M = 21.45$ years old), and sample four consisted of 121 female figure skaters ($M = 14.46$) competing at the regional level up to Olympic competition. Participants were given a demographic questionnaire, the Hewitt-MPS and the Sport-MPS, however only half of the figure skaters and half of the football players were given the Hewitt-MPS.

The Sport MPS contains 30 items and four subscales. The Personal Standards (PS) subscale measures the tendency to set high and exacting standards of personal performance in sport and contains seven items (e.g., “I have extremely high goals for myself in my sport”). The Concern Over Mistakes (COM) subscale measures the tendency to become overly concerned about personal mistakes and to view mistakes in sport as unacceptable and contains eight items (e.g., “If I play well but only make one obvious mistake in the entire game, I still feel disappointed with my performance”). The Perceived Parental Pressure (PPP) subscale measures perceptions of parents being overly demanding and critical and contains 9 items (e.g., “In competition, I never feel like I can quite meet my parents’ expectations”). Lastly, the Perceived Coach Pressure (PCP) subscale measures the belief of coaches being overly demanding and critical and contains six items (e.g., “Only outstanding performances in competition is good
enough for my coach”). Internal and external validity was established for the Sport-MPS. The self-oriented subscale of the Hewitt-MPS was the strongest predictor of personal standards. The strongest predictor of perceived parental pressure and perceived coach pressure was socially prescribed perfectionism of the Hewitt-MPS. Self-oriented perfectionism and socially prescribed perfectionism was positively correlated with the concern over mistakes (COM) subscale.

Several researchers have found competitive trait anxiety to be related to fear of failure of being evaluated (Brustad & Weiss, 1987; Gould, Horn, & Spreeman, 1983; Passer, 1983; Rainey & Cunningham, 1988), which are characteristics of perfectionism. Thus, the relationship between perfectionism and anxiety in sport has gained research attention.

**Perfectionism and Anxiety**

Athletic competition may be associated with heightened competitive anxiety due to the critical evaluation by opponents, teammates, coaches, and spectators that top performers may be under (Martens, Vealey, & Burton, 1990). Martens and colleagues (1990) identified three main dimensions of competitive anxiety: cognitive anxiety, somatic anxiety, and self-confidence. Cognitive anxiety involves cognitions about possible failure and is viewed as the mental component of anxiety (i.e., negative expectations and cognitive concerns about the situation). Somatic Anxiety is the physical component of anxiety that involves the perception of bodily symptoms and heightened negative arousal (i.e. increased heart beat, perspiration, nerves). Self-confidence involves thoughts that one is able to give one’s best performance on a given task. Research has shown that elite athletes interpret anxiety as more facilitative and less debilitating than non-elite athletes (Jones, Hanton, & Swain, 2004). Based on Jones’ (1995) model of competitive anxiety, anxiety would be considered facilitative if the individual’s expectancies of being able to cope and goal attainment remained favorable. If the expectations became unfavorable, anxiety would become debilitating. Therefore, the direction of anxiety (debilitative or facilitative) is dependent on the athlete’s sense of control, similar to one of the distinguishing qualities between adaptive and maladaptive perfectionism.

As referenced above, Frost and Henderson (1991) found a positive correlation with competitive anxiety and perfectionism in female collegiate athletes. Similarly, Koivula, Hassmén, and Fallby (2002) identified three groups of perfectionists, positive perfectionists, negative perfectionists, and overall perfectionists among elite Swedish athletes. Positive perfectionists, athletes with high levels of Personal Standards and low levels of Concern Over
Mistakes, showed higher self-confidence and lower cognitive anxiety than negative perfectionists, athletes with low levels of personal standards and high levels of Concern Over Mistakes, and overall perfectionists, athletes with overall high levels of perfectionism. Negative perfectionists shower higher somatic anxiety than positive perfectionists.

Based on Smith’s (1996) conceptual model of sport performance, the intensity and duration of precompetitive state anxiety is influenced by the competitive sport situation, individual differences in sport-specific cognitive and somatic trait anxiety, and the athlete’s psychological coping skills. Research findings in sport (Coen & Ogles, 1993; Gould, Tuffey, Udry, & Loehr, 1996; Frost & Henderson, 1991) suggest that neurotic perfectionism may promote the use of negative thoughts during performance that may threaten an athlete’s self-worth and therefore increase state anxiety in sport (Hall, Kerr, & Matthews, 1998). To further examine the relationship between anxiety and perfectionism in sport, the purpose of Hall et al. (1998) was to determine the influence dimensions of perfectionism and achievement goals on state anxiety prior to competitive sporting events. Participants were 119 high school student athletes with a mean age of 14 years. Anxiety was measured with the Competitive State Anxiety Inventory -2 (Martens, et al., 1990). The scale has 27-items that measure cognitive anxiety, somatic anxiety, and confidence that are answered on a 4-point Likert Scale (1 = Not at all to 4 = Very much so). Perfectionism was measured with the Frost-MPS (Frost, et al., 1990). One week before competition, the athletes completed the questionnaires. Results found overall perfectionism scores consistently predicted cognitive anxiety. Concern Over Mistakes seemed to be a high predictor of cognitive anxiety, however only the Doubts About Action subscale consistently predicted somatic anxiety. Concern Over Mistakes and Doubts About Action, the subscales considered to be neurotic perfectionism, contributed the most to the prediction of cognitive anxiety.

The studies previously reviewed did not use a sport specific measure of perfectionism, therefore the purpose of Stoeber, Otto, Pescheck, Becker, and Stoll (2006) was to further investigate the relationship between perfectionism and competitive anxiety in athletes by focusing on perfectionism during competitions. Perfectionism during competition has been differentiated into two facets, striving for perfectionism and negative reactions to imperfection. To examine this, four samples of athletes were recruited. The first sample consisted of 115 male and female collegiate athletes (mean age of 21 years), sample two consisted of 74 female soccer
players (mean age of 24.1 years), sample three consisted of 204 high school male and female athletes (mean age of 15.8 years), and sample four consisted of 147 collegiate athletes (mean age of 22.8 years). Perfectionism during competition was measured using ten items from the Multidimensional Inventory of Perfectionism in Sport (Stoeber, Otto, & Stoll, 2004). Five items measured negative reactions to imperfection during competitions and five items measured striving for perfectionism during competition. Competitive anxiety was measured using the Competitive State Anxiety Inventory-2 (CSAI-2; Martens et al., 1990). Results showed that overall perfectionism showed significant positive correlations with cognitive and somatic anxiety across all four samples of athletes. However, only in the collegiate athlete samples, did striving for perfection show a positive correlation with cognitive anxiety during competitions, but not somatic anxiety. Negative reactions to imperfection showed positive correlations with both cognitive and somatic anxiety and inverse correlations with self-confidence.

In addition to Stoeber et al. (2007) Martinent and Ferrand (2007) used a sport specific measure of perfectionism to examine the relationship between perfectionism and anxiety in sport. Participants were 78 female and 88 male competitive athletes (mean age of 21 years). Perfectionism was measured using a French version of the Sport-MPS (Dunn, et al. 2006) and anxiety was measured using a French version of the Competitive State Anxiety Inventory (CSAI-2R; Cox, Martens, & Russel, 2003) as well as the Sport Anxiety Scale (SAS; Smith, Smoll, & Shultz, 1990). Results indicated that athletes with higher scores on Concern Over Mistakes presented the most debilitative anxiety. These results support the notion that concern over mistakes represents a maladaptive component of sport perfectionism that could have a detrimental impact on athletes (Dunn, et al. 2002; Gotwals, et al. 2003). These findings provide further support for the relationship between perfectionism and anxiety in the sport context.

As with anxiety, anger is frequently experienced and expressed as aggression in the athletic domain (Maxwell, 2004) and can be interpreted as either facilitative or debilitative to performance. Research shows that perfectionism and anger tend to be highly inter-correlated (Diener & Emmons, 1985; Watson & Tellegen, 1985; Watson, Clark, &Tellegen, 1988). The purpose of Robazza and Bortoli (2007) was to examine the perceptions of anxiety and anger as facilitative or debilitative to rugby players. Participants were 187 male rugby players during the competitive season. Players were classified as either high-level players (mean age of 26.6 years) or low-level players (mean age of 26.2 years). Anxiety was measured using the Competitive
Trait Anxiety Inventory-2 (CTAI-2; Albrecht & Feltz, 1987) which is a modified version of the CSAI-2 (Martens, et al. 1990). The CTAI-2 assesses the usual intensity level of cognitive anxiety, somatic anxiety, and self-confidence in sport. Anger was measured using the State-Trait Anger Expression Inventory (STAXI; Spielberger, 1991). Results showed that athletes tended to perceive anger and anxiety as more facilitative to performance than debilitative. They expressed a moderate frequency of angry symptoms, but believed their thoughts were under personal control. More athletes perceived Anger-out as more facilitative than debilitative, but Anger-in was viewed as both facilitative and debilitative. Spielberger (1991) describes Anger-in as the tendency to hold or suppress anger (i.e., “I boil inside but I don’t show it”) and Anger-out as the expression of anger through verbal or physical aggression (i.e., “I lose my temper”). Rugby is considered a high contact sport and if these athletes are experiencing a moderate frequency of angry thoughts during competition and view expressing anger as facilitative to performance, it would be expected that contact sports would have high levels of hostile aggression. The authors suggested that there is a need to study to what extent facilitative and debilitative effects of anger is predictive of actual outcomes (Robazza & Burtoli, 2007).

**Perfectionism and Anger**

Because maladaptive perfectionists are vulnerable to criticism from others (Blatt, 1995) and vulnerable to the threat of mistakes (Hamachek, 1978), it is predicted that maladaptive perfectionists will be prone to experiencing anger (Antony & Swinson, 1998; Saboonchi & Lundh, 2003). Deffenbacher (1999, p. 297) suggested that anger results when “something has happened or could happen that should not,” or when an event is deemed to be “unfair or undeserved.” Moreover, when a perfectionist’s performance falls short of the expected standard, the likelihood of experiencing a negative effect or emotional response is increased (Griffith & Graham, 2004; Higgins, 1987). Anger has the potential to affect performance by either disrupting or enhancing the focus of attention, information-processing decision making, execution, and control of actions (Jones, 2003). One negative emotion commonly experienced in sport under conditions of perceived failure is anger (Lazarus, 2000). Averill (1982) suggested that anger can be experienced when highly desired goals are blocked, which aligns with revised frustration hypothesis (Berkowitz, 1968).

One purpose of Hewitt, Caelian, Flett, Sherry, Collins, and Flynn’s (2002) study was to examine the relationship between perfectionism and anger. Participants were 114 male and
female students ranging in age from 10 to 15 years ($M = 12.30$). Perfectionism was measured using the Child-Adolescent Perfectionism Scale (CAPS; Flett et al, 2001). The scale has 22-items and assesses Self-Oriented and Socially Prescribed perfectionism in children with a minimum Grade 3 reading level. Results showed that Socially Prescribed Perfectionism was significantly correlated with anger suppression (directing anger inward), and outwardly directed anger.

Positive correlations have been found between hostility and Self-Oriented and Socially Prescribed Perfectionism (Hewitt & Flett, 1991) using the MPS-H. Saboonchi and Lundh (2003) expanded upon these findings by examining how anger was related to self-oriented, other-oriented, and socially prescribed perfectionism. Participants were 182 randomly selected men and women (mean age of 37 years). Perfectionism was measured with the Multidimensional Perfectionism Scale (MPS-H; Hewitt & Flett, 1991) with the subscales self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism. Anger was measured with the Trait Anger Scale of the State Trait Anger Scale (STAS-T; Spielberger, Jacobs, Russell, & Crane, 1983). Results showed a weak correlation with Self-Oriented Perfectionism, but no significant correlation with Other-oriented Perfectionism or Socially Prescribed Perfectionism. These results are not consistent with the findings of Hewitt and Flett (1991). The findings suggest that the predisposition to anger is more associated with frustrations cause by the setting of unrealistically high goals, and harsh demands directed toward the self, than with the appraisal of mistreatment by others. Because these findings were inconsistent with previous findings, the authors suggest further research be conducted examining the relationship between perfectionism and anger.

The first study examining the relationship between perfectionism and anger in sport was conducted by Dunn, Gotwals, Dunn and Syrotuik, (2006). Participants were 138 male Canadian football players. Canadian football is a high contact sport variation of American football. Athletes were given the Sport-Multidimensional Perfectionism Scale (Sport-MPS; Dunn, Causgrove- Dunn, & Sytoruik, 2002) and a sport-modified version of the Trait Anger Scale from the State-Trait Anger Expression Inventory-2 (STAXI-2; Spielberger, 1999). As described above, the Sport-MPS has four subscales, personal Standards(PS -the tendency to set high and exacting standards of personal performance in sport), Concern Over Mistakes (COM- tendency to become overly concerned about personal mistakes and to view mistakes in sport as
unacceptable), Perceived Parental Pressure (PPP, perceive parents as being overly demanding and critical), and Perceived Coach Pressure (PCP, coaches being overly demanding and critical). The Trait Anger scale measures Angry Temperament (the disposition to experience anger without specific provocation) and Angry Reaction (the frequency that angry feelings are experienced in situations that involve frustration and/or negative evaluations). The questions were modified to make the scale situation specific and relevant to the athletes. The reactions to mistakes Anger Scale was modified from the STAXI-2, and asked athletes to answer based on a 7-point scale with items prefaced with “When I am not playing well.” The contents of the scale were also modified to report on sport specific situations.

As athletes’ levels of Personal Standards, Concern Over Mistakes, and Perceived Coach Pressure increased, so did their dispositional tendencies to experience anger in sport. Athletes with maladaptive perfectionist orientations (as defined by the profile of scores) were more predisposed to experiencing anger in sport. Moderate to high Personal Standards in combination with high Concern Over Mistakes and high Perceived Coach Pressure was positively correlated with trait anger and anger dispositions following mistakes. Moderate to high Personal Standards in combination with high Concern Over Mistakes and high Perceived Coach Pressure was correlated with trait anger and anger dispositions following mistakes. Perceived Coach Pressure was significantly correlated with all anger dimensions and had meaningful loadings on perfectionism. However, Perceived Parental Pressure was not correlated with any of the anger dimensions and did not significantly load on either of the perfectionism variables. In conclusion, the results found that athletes with maladaptive perfectionist orientations are predisposed to experience anger in sport. However, there is a difference between the experience of anger and the expression of anger (Spielberger, 1999). The expression of anger as aggression in the sport setting would result in hostile aggression, behavior performed with the sole intention of inflicting harm on a person (Silva, 1984). Therefore, research needs to be conducted to determine the relationship between perfectionism and sport aggression.

Extending the findings from the previous study, Vallance, Dunn, and Causgrove-Dunn (2006) examined the relationship between perfectionism and anger in male youth ice hockey players. In addition, they wanted to determine if situation criticality affects anger following failure among athletes with different perfectionist orientations. Situation criticality was hypothesized as having a relationship with anger because as the relative importance of a goal
increases, so will the strength of the associated emotional response (Lazarus, 1991; Lewthwaite, 1990). Situation criticality is defined as the athlete’s perceived importance of a competitive situation. Situations in which the score is close and opportunities to make up for potential mistakes are limited, for instance when time is running out, are typically perceived as being more critical than situations in which the perceived threat of failure is low (Krane, Joyce, & Rafeld, 1994). Participants were 229 male youth hockey players competing at the highest competitive level for their age group. Perfectionism was measured using the Sport-MPS (Dunn, et al., 2006) and the Trait Anger Scale and Reactions-to-Mistakes Anger Scale (STAXI-2; Spielberger, 1999). The athletes were given two scenarios to reflect low- and high- criticality situations and asked to rate their anger responses in the context of each scenario. Results suggest that when athletes’ perfectionist orientations are stronger, they are more predisposed to experiencing high trait anger in hockey. Athletes reported that they would experience higher levels of anger when making a mistake in a high-criticality situation in comparison to a low-criticality situation. Further, scores on the Reactions-to-Anger subscale indicated that highly perfectionist individuals will be particularly prone to experiencing anger in situations that involve frustration, as supported by the revised-frustration hypothesis (Berkowitz, 1968).

Anger has been recognized as a prevalent emotion in sport (Brunelle & Tennant, 1999) and yet relatively little research has been conducted to understand the antecedents and consequences of this emotion among athletes (Abrams & Hale, 2005). One possible consequence of expressing anger is aggression.

**Perfectionism and Aggression**

Although the literature supports that there is a relationship between anger and maladaptive perfectionism (Hewitt, et al. 2002) and that the relationship exists in sport (Dunn, et al. 2006; Vallance, et al. 2006) to date, only one study has examined the relationship between aggression and perfection. The study was conducted by Øngen (2010). The purpose was to examine the relationship between adaptive and maladaptive perfectionism and aggression among Turkish male and female high school adolescents aged 15 to 18 years old. Aggression was measured on the Buss-Perry Aggression Questionnaire (BBAQ; Buss & Perry, 1992) which consists of 29 items and four factors, Anger, Physical Aggression, Hostility, and Verbal Aggression. Perfectionism was measured using the Almost Perfect Scale (APS-R; Slaney, Rice, & Ashby, 2002). APS-R consists of 23 items on a 5-point Likert scale (1 = strongly agree to 5
= strongly disagree). It measures three factors, high standards (i.e., “I expect the best from myself”), order (i.e., “Neatness is important to me”), and discrepancy (i.e., “Doing my best never seems to be enough”). Discrepancy is defined as the perceived difference between the standards one has for oneself and one’s actual performance. Results showed that discrepancy was a statistically significant predictor of physical aggression and hostility. One theory that provides explanation for this finding is the revised-frustration hypothesis that states that frustration does not always lead to aggression, but it increases the likelihood of aggression by increasing arousal, anger, and other thoughts and emotions (Berkowitz, 1968, 1988). Frustration may arise when a person experiences discrepancy accompanied by not achieving a goal that they believe is obtainable.

The high standard factor was a negative predictor of hostility, but a positive predictor of verbal aggression. The results suggest that maladaptive perfectionism, such as discrepancy, may increase aggression, while adaptive forms of perfectionism, such as order, may decrease aggression. The findings of this study have not been replicated using athletes or college aged populations, illustrating a clear gap in the literature regarding the relationship between perfectionism and aggression.

**Summary of Literature Review and Overview of Current Study**

This chapter has reviewed the literature on sport aggression and perfectionism in the sport domain. Based on the definition of aggression as the infliction of an aversive stimulus, physical, verbal or gesture upon one person by another (Tenenbaum, et al. 1996), verbal and physical acts upon another will constitute aggression in this study. Aggression takes two forms in sport, hostile and instrumental. Instrumental aggression is aggression that occurs within the rules of sport and the harm to an individual is accidental and not the goal of the aggressive act. Conversely, hostile aggression is behavior beyond the rules of sport that is acted out as a means of hurting another player. The intent of hostile aggression and the possible consequences (i.e. suspension, penalty, injury) makes this behavior detrimental to sport. For this reason, deterring hostile aggression in sport is the concern of this study. The antecedents and characteristics influencing aggression are still relatively unknown and the relationship between perfectionism and sport aggression has not been examined, therefore indicating a gap in the literature. The purpose of the current study is to examine the relationship between perfectionism and aggression in male contact sport athletes. Perfectionism is hypothesized to influence an athlete’s aggression
because it has been found that as perfectionism levels increase, so do athletes’ dispositional tendencies to experience anger in sport (Dunn, et al. 2006; Vallance, Dunn & Dunn, 2006). However, currently only one study examines the relationship between aggression and perfectionism (Öngen, 2010). The study found that in a sample of adolescents, high levels of maladaptive perfectionism may increase aggression, warranting further examination of this possible relationship. Additionally, because perfectionism has emerged as a constant predictor of cognitive anxiety (Hall, et al. 1998), and because perfectionism and anxiety tend to be highly correlated (Diener & Emmons, 1985; Watson & Tellegen, 1985), it will be included in the present study as a possible contributing factor to aggression.

The main purpose of the current thesis is to examine the relationship between perfectionism and aggression in male contact sport athletes. Secondary, based on the research, it is believed that the coexistence of perfectionism, anxiety, and anger may contribute to an athlete’s aggression. Based on previous research in sport aggression and perfectionism literature, the following hypotheses were advanced.

1. Overall perfectionism will show a relationship with aggression.
2. Adaptive perfection will show a relationship with aggression.
3. The dimensions of anxiety will be positively correlated with anger.
4. Global anxiety, state anger, and global perfectionism will predict an athlete’s reported level of reactive aggression.
5. The different forms of perfectionism, specifically the maladaptive forms will predict reactive aggression.

This thesis explored the relationships between perfectionism, anger, anxiety, and aggression. The subscales related to maladaptive perfectionism are Concern Over Mistakes, Personal Standards, Doubts About Actions and Perceived Coach Pressure. Anger is comprised of Trait Anger, State Anger, Anger Expression and Anger Control. Lastly, anxiety has a Somatic and Cognitive component, that is divided into a worry subscale and a concentration-disruption subscale. Thus, it is hypothesized that maladaptive perfectionism, anger, and anxiety are inter-correlated, and the variables together predict hostile aggression.
CHAPTER TWO

METHODOLOGICAL PROCEDURES

Participants

Participants were 63 Division 1 and club-sport male collegiate athletes from contact sports at three Midwestern Universities. The sample consisted of males ranging in age from 18 to 26 years of age ($M = 21.59$ years, $SD = 1.77$), representing three contact sports, ice hockey ($n = 35$), football ($n = 18$), and rugby ($n = 10$). On average, the athletes had 12.08 years of experience in their sport ($SD = 5.48$ years). In regard to year in school, the sample percentages were 4.8% freshmen, 23.8% sophomores, 25.4% juniors, 19% seniors, and 23.8% graduate students. The surveys were either given at the end of the school year or during the summer, therefore some athletes in the sample may have graduated prior to taking the survey. The participants had an average height of 72 inches ($SD = 2.5$ inches) and an average weight of 202 pounds ($SD = 25.8$ pounds). The sample mostly (92.5%) identified as Caucasian, 3.2% identified as African American, and less than 2% identified as Persian. The only criteria used for participation was gender (male) and age (participant must be at least 18 years of age). Males were chosen as participants because a large body of research has established that males are more likely to commit aggression in sport than females.

Procedure

Permission was obtained from three University Athletic Directors to contact the hockey, football, and rugby teams for participation. Two of the universities were recruited through attending an Athletic Director’s conference where the Directors were informed of the study. Institutional Review Board approval was sought and received at each university. The coaches were informed of the study and gave consent for their athletes to participate. Surveys were administered via paper copy or electronically through e-mail. Athletes were informed that participation was strictly voluntary and they could discontinue the study at any time. Participants who received written copies signed informed consent prior to filling out the questionnaires and received a debriefing sheet at completion. Athletes who received the survey electronically were instructed to choose ‘Yes’ when asked if they gave consent to participate after reading the consent form. If the athlete selected ‘No’ the survey was not administered and the athlete was directed to the consent form. Additionally, one University asked for university-specific information on the debriefing form. The consent form for the paper survey can be found in
Appendix A and the consent form for the electronic copy can be found in Appendix B. The debriefing form for the paper survey can be found in Appendix C, the debriefing form for the electronic copy can be found in Appendix D, and the University-specific consent form can be found in Appendix E.

Data was collected quantitatively with questionnaires in a one-time collection period. The athletes filled out the questionnaires in a locker room or online. The research procedures have been reviewed and approved by the Miami University Committee for the Protection of Human Participants. The instruments used are described in the following sections.

Measures

A series of self-report questionnaires were administered to study participants. The questionnaires that will be distributed are described below.

**Demographic Questionnaire**

Athletes were given a demographic questionnaire (see Appendix F) asking for year in school, race, estimated family income, sport, position, number of years experience in their sport, and estimated number of fouls and penalties received during their collegiate careers. The demographic information was collected for record keeping purposes.

**Bredemeier Athletic Aggression Inventory**

Hostile and instrumental aggression was measured with the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975). A hostile aggression response (i.e. ‘During an athletic performance, I am often more irritated than people may think’) has a primary goal of inflicting injury, whereas instrumental aggression (i.e. ‘When things go wrong in a game, I do not tend to take it out on my opponent’) has a primary goal of attaining a particular reward (Bredemeier, 1975). Responses are made on a 4-point Likert scale ranging from 1 (strong agreement) to 4 (strong disagreement). Reactive and instrumental scores range from a low of 14, indicating strong agreement with the items on the scale, to a high of 56 indicating strong disagreement; high scores on the scale reflect low levels of reactive and instrumental aggression (Bredemeier, 1975). Previous alpha coefficients for the scale ranged from .86 and .90. For this current study, the internal consistency for this scale was calculated using Cronbach’s Alpha and ranged from .51 to .72. The reactive aggression subscale demonstrated adequate internal consistency (i.e., at or above a .70 criterion level as recommended by Nunnally and Bernstein, 1994). The instrumental aggression subscale alpha was .51. Although this subscale alpha was below the
criterion level recommended by Nunnally and Bernstein (1994), other researchers (e.g. Schmitt, 1996) have suggested that alpha values as low as .50 may be considered acceptable for use in behavioral research. Due to the purpose of this study, instrumental aggression scores were used to calculate overall correlations between variables and were included in main analyses, thus the decision was made to include the instrumental aggression subscale in the analyses. The Cronbach Alpha’s for each subscale can be found in Table 2. However, the specific purpose of this thesis was to examine reactive aggression scores, not instrumental aggression scores. The lower internal consistency score should be noted as a possible limitation to the results of the current study.

**State-Trait Anger Inventory -2**

Perceptions of anger were measured using the State-Trait Anger Inventory (Spielberger, 1999). The inventory consists of six major scales and five subscales measuring the experience, expression, and control of anger. The STAXI-2 is comprised of 57-items measured on a 4-point Likert type scale (1 = not at all/almost never, 2 = somewhat/sometimes, 3 = moderately so/often, 4 = very much so/almost always). State Anger (S-Anger; 15 items) refers to an emotional state consisting of subjective feelings that vary in intensity from mild annoyance to intense fury, accompanied by muscular tension and arousal of the automatic nervous system. Trait Anger (T-Anger; 10 items) is defined as individual differences in anger proneness, for example the tendency to perceive a wide range of situations as annoying or frustrating. Individuals high in trait anger experience State Anger more often and with greater intensity than those low in trait anger. The STAXI-2 also measures the expression and control of anger as either Anger-In or Anger-Out. Anger-In (AX/In; 8 times) refers to the frequency that angry feelings are held in or suppressed (i.e., “When angry or furious, I boil inside but don’t show it”). Anger-Out (AX/Out; 8 times) is the frequency in which State-Anger is expressed as aggressive behavior directed toward other people or objects in the environment (i.e., “When angry or furious I slam doors,” “When angry or furious I argue with others”). Anger-Control In (AX/Con-In; 8 items) is defined as the frequency that individuals attempt to suppress angry feelings (i.e., “When angry or furious I try to simmer down”). Anger-Control Out (AX/Con-Out; 8 items) refers to the frequency that individuals control the outward expression of angry feelings (i.e., “When angry or furious, I control my temper”). Previous alpha coefficients for this scale ranged from .74 to .94. For the current study Cronbach alpha scores were .96 (state anger), .81 (trait anger), .77 (anger
expression) all reaching the recommended criterion level recommended by Nunnally and Bernstein (1994). All alpha coefficients for this scale can be found in Table 2.

**Sport Multidimensional Perfectionism Scale-2**

The Sport Multidimensional Scale-2 (Sport-MPS-2; Gotwals & Dunn, 2009) is based on a multidimensional theory of perfectionism similar to Frost, et al.’s (1990) conceptualization of perfectionism. The purpose of the scale is to measure perfectionism in the sport domain. The scale has six subscales and 42 items answered on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The subscales are Personal Standards (PS; 7 items, e.g., “I have extremely high goals for myself in my sport”), Concern Over Mistakes (COM; 8 items, e.g., “If I play well but only make one obvious mistake in the entire game, I still feel disappointed with my performance”), Perceived Parental Pressure (PPP; 9 items, e.g., “In competition, I never feel like I can quite meet my parents expectations”), Perceived Coach Pressure (PCP; 6 items, e.g., “Only outstanding performance in competition is good enough for my coach”), Doubts About Action (DAA; 6 items, e.g., “I usually feel uncertain as to whether or not my training effectively prepares me for competition”), and Organization (Org; 6 items, e.g., “On the day of competition, I have a routine that I try to follow”). Previous alphas for this scale have ranged from .77 to .84. Cronbach alphas were calculated for the current study and the alphas can be found in Table 2.

**The Sport Anxiety Scale**

Cognitive and somatic trait anxiety was measured with the Sport Anxiety Scale (SAS; Smith, et al., 1990). The scale contains 21 items with three subscales, Somatic Anxiety Scale, Worry Scale, and Concentration Disruption Scale, answered on a 4-point Likert scale (1 = Not At All, 2 = Somewhat, 3 = Moderately So, 4 = Very Much So) and overall scores range from 21 to 84. The Somatic Anxiety Scale has 9 items measuring the physical manifestations of anxiety (i.e., “My body feels tense”). Exploratory factor analysis identified that cognitive anxiety be divided into two subscales, Worry and Concentration Disruption. The Worry subscale contains 7 items (i.e., “I have self doubts”) and the Concentration Disruption subscale contains 5 items (i.e., “My mind wanders during sport competition”).

Previous alphas for this scale ranged from .81 to .92. In the current study all three subscales exhibited acceptable levels, as recommended by Nunnelly and Bernstein (1994), of
internal consistency as Cronbach alpha’s of .85 (somatic anxiety), .91 (worry), and .84 (concentration disruption) were obtained. The alphas for this scale can be found in Table 2.
PERFECTIONISM HURTS: EXAMINING THE RELATIONSHIP BETWEEN
PERFECTIONISM, ANGER, ANXIETY AND SPORT AGGRESSION

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ABSTRACT
PERFECTIONISM HURTS: EXAMINING THE RELATIONSHIP BETWEEN
PERFECTIONISM, ANGER, ANXIETY AND SPORT AGGRESSION

By: Megan Byrd

The primary purpose of this exploratory study was to examine the relationship between perfectionism, anxiety, and anger on reactive aggression in male, contact sport athletes. A total of 50 male athletes competing in three contact sports, ice hockey, rugby, and football completed the surveys. A significant regression analysis revealed that the Sport-MPS subscales of perfectionism predicted levels of reactive aggression, as measured by the Bredemeier Athletic Aggression Inventory, specifically the concern over mistakes subscale and the organization. Also, it was found that higher levels of reported state-anger, anxiety, and perfectionism significantly predicted higher levels of reactive aggression. Future research directions and study limitations will be discussed.
Although anger has been identified as a prevalent emotion in sport (e.g., Brunelle & Tennant), relatively little research has been conducted to understand the antecedents and consequences of anger among athletes (Abrams & Hale, 2005). One possible consequence of anger in sport is sport aggression. The International Society of sport Psychology (ISSP) published a position statement that defined aggression as the infliction of an aversive stimulus, physical, verbal or gesture upon one person by another (Tennebaum, Stewart, Singer & Duda, 1996). An important tenant to studying sport aggression is making the distinction between assertive behavior and types of sport aggressive behavior. Assertive behaviors are forceful, directed behaviors which are not intended to injure an opponent (Husman & Silva, 1984). Assertive behavior is labeled the socially desirable alternative to aggression (Keeler, 2007).

There are also two types of sport aggression; instrumental and hostile, or reactive, aggression. Instrumental aggression is behavior against another person that is used as a means of securing some reward or to achieve an external goal, such as victory (Silva, 1983). The harm to others is incidental and is not the perceived goal. Instrumental aggression is considered acceptable, within the rules of the sport, aggression because it is not accompanied by the intent to harm another athlete, unlike hostile aggression. Hostile aggression is behavior performed with the sole intention of inflicting harm on a person (Silva, 1983). This type of aggression is always accompanied by anger and examples of this type of aggression can usually be found in the media. An extreme form of sport aggression is violence, harm-inducing behavior outside the rules of sport, bearing no direct relationship to the competitive goals of sport (Terry & Jackson, 1985). The encouragement of aggressive acts is evident in high contact sports where “achievement of goals (scoring and winning) is predicated on successful utilization of violence (Messner, 1990a, p. 203). However, the utilization of violence can lead to dangerous and unhealthy moments in sport, especially contact sports which are characterized “based upon the degree that physical contact is an implicit (as opposed to incidental) part of appropriate player behavior” (Silva, 1983, p. 442). Given the definitions of contact sports and sport aggression, it is not surprising that contact sport athletes are more accepting of aggression that non-contact sport and individual sport athletes (Conroy, Silva, Newcomer, Walker, & Johnson, 2001; Coulomb-Cabagno & Rascle, 2006; Gardner & Janelle, 2002; Keeler, 2007; Maxwell, 2004; Mintah, Huddleston, & Doody, 1999; Silva, 1983).
The findings of Conroy and colleagues (2001) suggest that aggressive behaviors are considered more legitimate as level of play increases, when the probability of punishment is low and perceived instrumental gains are high (i.e., field position, scoring a goal). Also, aggressive behaviors are perceived to be the most legitimate if they occur in last two minutes of a close game, if in retaliation, and if the act would help win a championship. However, perceptions of legitimacy decreased if the action would result in the opponent being seriously injured (hostile aggression and sport violence). Providing these results, it would appear that athletes are more accepting of instrumental aggression than hostile aggression, so it would be expected that players would commit more acts of instrumental aggression than hostile aggression. However, a study conducted by Loughead and Leith (2001) with hockey players from three levels of play (age 10 to 15 years old) assessed perceived aggression with the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975) and measured actual aggression with recorded penalties from game summary sheets, found the opposite to be true. Although players were less approving of hostile aggression, they received almost twice as many recorded hostile aggression penalties than instrumental penalties. Hostile aggression is occurring within ice hockey, as player-to-player contact is the most frequent mechanism of sustained injuries (Agel, Dompier, Dick, & Marshall, 2007). In summary, it appears athletes are less approving of hostile aggression within sport, however they are more likely to commit hostile aggression within sport. One possible explanation for this contradictory statement is that athletes have trouble differentiating between hostile and instrumental aggression. Bredemeier & Shields (1986) found that contact sport athletes considered intentional, or hostile, aggression to be equivalent to intense competitive play, thus they could not differentiate between types of aggression. Another possibility is that athlete’s, as well as researchers, do not fully understand their aggressive tendencies in sport and may not even be aware of why they act aggressively in sport. National Hockey League player Ryan Maki (2004) may have alluded to this in a newspaper interview, “You push yourself to the limits, at the very edge of the rule book, and sometimes you can’t help yourself. You cross over. You make a bad decision, and you never look the same again.” This misunderstanding leads to a clear cap in the sport aggression literature.

Sport aggression has been studied in terms of gender (Silva, 1983; Eagly & Steffen 1986; Tucker & Parks 2001; Coulomb-Cabando & Rascle, 2006), age and level of play (Visek & Watson, 2005; Wattie et al. 2007), sport type (Silva, 1983; Mintah, et al. 1999; Conroy et al.

Gaining research attention is the construct of perfectionism and its relationship to sport, specifically the relationship between perfectionism and anger.

Perfectionism is defined as, “striving for flawlessness” (Flett & Hewitt, 2002, pg. 5) and is traditionally viewed as an enduring personality trait (Hewitt & Flett, 1991). One defining characteristic of perfectionism is the setting of excessively high personal standards of performance (Burns, 1980; Hamachek, 1978; Hollander, 1965; Frost, Marten, Lahart, & Rosenblate, 1990; Pacht, 1984). Perfectionism is a characteristic that varies along a continuum; an individual may have varying amounts of overall perfectionism and varying amounts of each characteristic of the subscales (Frost, et al. 1990). Hamachek (1978) distinguished perfectionists between adaptive and maladaptive perfectionists. Adaptive perfectionists, also called normal perfectionists, are those who set high standards for themselves but “feel free to be less precise as the situation permits” (Hamachek, 1978, pg. 27). Maladaptive perfectionists, also called neurotic perfectionists, set high standards but do not allow room for mistakes, therefore they never feel that anything is done well enough (Frost, et al. 1990).

In the 2009 U.S. Open semifinals, self-described perfectionist Serena Williams (Williams, 2003), was defeated by her anger and aggression after her racquet breaking and vocal response to a questionable call from a line judge. At the time of her outburst, Serena Williams was losing the match and although there could be many causes of her tirade, it could be possible that her perfectionism was to blame. Because maladaptive perfectionists are vulnerable to criticism from others (Blatt, 1995) and vulnerable to the threat of mistakes (Hamachek, 1978), it is predicted that maladaptive perfectionists will be prone to experiencing anger (Antony & Swinson, 1998; Saboonchi & Lundh, 2003). Evidence of the relationship between perfectionism and anger has been supported by several research studies (i.e., Hewitt, Caelian, Flett, Sherry,
Collins, and Flynn, 2002; Saboonchi & Lundh, 2003) and in sport (i.e., Dunn, Gotwals, Dunn, & Sytoruik, 2006; Vallance, Dunn, & Causgrove--Dunn).

Specifically, in a study of 138 male Canadian football players, Dunn and colleagues (2006) found that as athlete’s levels of personal standards, concern over mistakes, and perceived coach pressure increased, so did their dispositional tendencies to experience anger in sport. Further, athletes with maladaptive perfectionist orientations were more predisposed to experiencing anger in sport. However, there is a difference between the experience of anger and the expression of anger (Spielberger, 1999). The expression of anger as aggression in the sport setting would most likely result in hostile aggression or sport violence, since this type of aggression is always accompanied by anger.

Although there is support of the relationship between anger and perfectionism in sport, to date only one study has examined the relationship between anger expressed as aggression and perfectionism. The study was conducted by Öngen (2010). The purpose was to examine the relationship between adaptive and maladaptive perfectionism and aggression among Turkish male and female high school adolescents aged 15 to 18 years old. Aggression was measured on the Buss-Perry Aggression Questionnaire (BBAQ; Buss & Perry, 1992) and perfectionism was measured using the Almost Perfect Scale (APS-R; Slaney, Rice, & Ashby, 2002). Results showed that discrepancy was a statistically significant predictor of physical aggression and hostility.

The results suggest that maladaptive perfectionism may increase aggression, while adaptive forms of perfectionism, may decrease aggression. The findings of this study have not been replicated using athletes or college aged populations, illustrating a clear gap in the literature regarding the relationship between perfectionism and aggression given the research to support the prevalence of sport aggression (especially hostile aggression, which is accompanied by anger) and the relationship between anger and perfectionism. Thus, the main purpose of this thesis is to examine the relationship between perfectionism and aggression in male contact sport athletes. Additionally, because perfectionism has emerged as a constant predictor of cognitive anxiety (Hall, et al. 1998) and because perfectionism and anxiety tend to be highly correlated (Diener & Emmons, 1985; Watson & Tellegen, 1985) it will be included in the present study as a possible contributing factor to aggression.
The main purpose of the current thesis is to examine the relationship between perfectionism and aggression in male contact sport athletes. Secondary, based on the research, it is believed that the coexistence of perfectionism, anxiety, and anger may contribute to an athlete’s aggression. Based on previous research in sport aggression and perfectionism literature, five hypotheses were advanced, (1) overall perfectionism will show a relationship with aggression, (2) adaptive perfection will show a relationship with aggression, (3) the dimensions of anxiety will be positively correlated with anger, (4) global anxiety, state anger, and global perfectionism will predict an athlete’s reported level of reactive aggression, and (5) the different forms of perfectionism, specifically the maladaptive forms, will predict reactive aggression.

**Method**

**Participants**

Participants were 63 Division 1 and club-sport male collegiate athletes from contact sports at three Midwestern Universities. The sample consisted of males ranging in age from 18 to 26 years of age (\(M = 21.59\) years, \(SD = 1.77\)), representing three contact sports, ice hockey (\(n = 35\)), football (\(n = 18\)), and rugby (\(n = 10\)). On average, the athletes had 12.08 years of experience in their sport (SD= 5.48 years). In regard to year in school, the sample percentages were 4.8% freshmen, 23.8% sophomores, 25.4% juniors, 19% seniors, and 23.8% graduate students. The surveys were either given at the end of the school year or during the summer; therefore some athletes in the sample may have graduated prior to taking the survey. The sample mostly (92.5%) identified as Caucasian, 3.2% identified as African American, and less than 2% identified as Persian.

**Measures**

Players completed five self-report inventories to measure demographic characteristics, aggression, anger, perfectionism, and anxiety. The demographic questionnaire contained seven questions about year in school, race, estimated family income, sport, position, number of years experience in their sport, and estimated number of fouls and penalties received during their collegiate careers.

*Bredemeier Athletic Aggression Inventory*

Hostile and instrumental aggression was measured with the Bredemeier Athletic Aggression Inventory (Bredemeier, 1975). A hostile aggression response (i.e. ‘During an athletic performance, I am often more irritated than people may think’) has a primary goal of inflicting
injury, whereas instrumental aggression (i.e. ‘When things go wrong in a game, I do not tend to take it out on my opponent’) has a primary goal of attaining a particular reward (Bredemeier, 1975). Responses are made on a 4-point Likert scale ranging from 1 (strong agreement) to 4 (strong disagreement). Reactive and instrumental scores range from a low of 14, indicating strong agreement with the items on the scale, to a high of 56 indicating strong disagreement; high scores on the scale reflect low levels of reactive and instrumental aggression (Bredemeier, 1975). Previous alpha coefficients for the scale ranged from .86 and .90. For this current study, the internal consistency for this scale was calculated using Cronbach’s Alpha and ranged from .51 to .72. The reactive aggression subscale demonstrated adequate internal consistency (i.e., at or above a .70 criterion level as recommended by Nunnally and Bernstein, 1994). The instrumental aggression subscale alpha was .51. Although this subscale alpha was below the criterion level recommended by Nunnally and Bernstein (1994), other researchers (e.g. Schmitt, 1996) have suggested that alpha values as low as .50 may be considered acceptable for use in behavioral research. Due to the purpose of this study, instrumental aggression scores were used to calculate overall correlations between variables and were included in main analyses, thus the decision was made to include the instrumental aggression subscale in the analyses. The Cronbach Alpha’s for each subscale can be found in Table 2. However, the specific purpose of this thesis was to examine reactive aggression scores, not instrumental aggression scores. The lower internal consistency score should be noted as a possible limitation to the results of the current study.

State-Trait Anger Inventory -2

Perceptions of anger were measured using the State-Trait Anger Inventory (Spielberger, 1999). The inventory consists of six major scales and five subscales measuring the experience, expression, and control of anger. The STAXI-2 is comprised of 57-items measured on a 4-point Likert type scale (1 = not at all/almost never, 2 = somewhat/sometimes, 3 = moderately so/often, 4 = very much so/almost always). State Anger (S-Anger; 15 items) refers to an emotional state consisting of subjective feelings that vary in intensity from mild annoyance to intense fury, accompanied by muscular tension and arousal of the automatic nervous system. Trait Anger (T-Anger; 10 items) is defined as individual differences in anger proneness, for example the tendency to perceive a wide range of situations as annoying or frustrating. Individuals high in trait anger experience State Anger more often and with greater intensity than those low in trait
anger. The STAXI-2 also measures the expression and control of anger as either Anger-In or Anger-Out. Anger-In (AX/In; 8 times) refers to the frequency that angry feelings are held in or suppressed (i.e., “When angry or furious, I boil inside but don’t show it”). Anger-Out (AX/Out; 8 times) is the frequency in which State-Anger is expressed as aggressive behavior directed toward other people or objects in the environment (i.e., “When angry or furious I slam doors,” “When angry or furious I argue with others”). Anger-Control In (AX/Con-In; 8 items) is defined as the frequency that individuals attempt to suppress angry feelings (i.e., “When angry or furious I try to simmer down”). Anger-Control Out (AX/Con-Out; 8 items) refers to the frequency that individuals control the outward expression of angry feelings (i.e., “When angry or furious, I control my temper”). Previous alpha coefficients for this scale ranged from .74 to .94. For the current study Cronbach alpha scores were .96 (state anger), .81 (trait anger), .77 (anger expression) all reaching the recommended criterion level recommended by Nunnally and Bernstein (1994). All alpha coefficients for this scale can be found in Table 2.

**Sport Multidimensional Perfectionism Scale-2**

The Sport Multidimensional Scale-2 (Sport-MPS-2; Gotwals & Dunn, 2009) is based on a multidimensional theory of perfectionism similar to Frost, et al.’s (1990) conceptualization of perfectionism. The purpose of the scale is to measure perfectionism in the sport domain. The scale has six subscales and 42 items answered on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). The subscales are Personal Standards (PS; 7 items, e.g., “I have extremely high goals for myself in my sport”), Concern Over Mistakes (COM; 8 items, e.g., “If I play well but only make one obvious mistake in the entire game, I still feel disappointed with my performance”), Perceived Parental Pressure (PPP; 9 items, e.g., “In competition, I never feel like I can quite meet my parents expectations”), Perceived Coach Pressure (PCP; 6 items, e.g., “Only outstanding performance in competition is good enough for my coach”), Doubts About Action (DAA; 6 items, e.g., “I usually feel uncertain as to whether or not my training effectively prepares me for competition”), and Organization (Org; 6 items, e.g., “On the day of competition, I have a routine that I try to follow”). Previous alphas for this scale have ranged from .77 to .84. Cronbach alphas were calculated for the current study and the alphas can be found in Table 2.

**The Sport Anxiety Scale**
Cognitive and somatic trait anxiety was measured with the Sport Anxiety Scale (SAS; Smith, et al., 1990). The scale contains 21 items with three subscales, Somatic Anxiety Scale, Worry Scale, and Concentration Disruption Scale, answered on a 4-point Likert scale (1 = Not At All, 2 = Somewhat, 3 = Moderately So, 4 = Very Much So) and overall scores range from 21 to 84. The Somatic Anxiety Scale has 9 items measuring the physical manifestations of anxiety (i.e., “My body feels tense”). Exploratory factor analysis identified that cognitive anxiety be divided into two subscales, Worry and Concentration Disruption. The Worry subscale contains 7 items (i.e., “I have self doubts”) and the Concentration Disruption subscale contains 5 items (i.e., “My mind wanders during sport competition”).

Previous alphas for this scale ranged from .81 to .92. In the current study all three subscales exhibited acceptable levels, as recommended by Nunnally and Bernstein (1994), of internal consistency as Cronbach alpha’s of .85 (somatic anxiety), .91 (worry), and .84 (concentration disruption) were obtained. The alphas for this scale can be found in Table 2.

Procedure

Permission was obtained from three University Athletic Directors to contact the hockey, football, and rugby teams for participation. Two of the universities were recruited through attending an Athletic Director’s conference where the Directors were informed of the study. Institutional Review Board approval was sought and received at each university. The coaches were informed of the study and gave consent for their athletes to participate. Surveys were administered via paper copy or electronically through e-mail. Athletes were informed that participation was strictly voluntary and they could discontinue the study at any time. Participants who received written copies signed informed consent prior to filling out the questionnaires and received a debriefing sheet at completion. Athletes who received the survey electronically were instructed to choose ‘Yes’ when asked if they gave consent to participate after reading the consent form. If the athlete selected ‘No’ the survey was not administered and the athlete was directed to the debriefing form. The research procedures have been reviewed and approved by the Miami University Committee for the Protection of Human Participants before conducting the study.

Results

The purpose of this thesis was to use a quantitative-design to assess the relationships between perfectionism, anxiety, anger, and aggression in male collegiate contact sport athletes. Specifically, the study examined the relationship between maladaptive perfectionism and hostile
aggression. Five hypotheses or research questions were generated through a review of the literature. First, the current study hypothesized overall perfectionism correlated to reported levels of aggression. Specifically, a positive correlation was hypothesized. Second, it was hypothesized that adaptive perfectionism would have a relationship with aggression. Third, it was hypothesized that the subscales of anxiety will be positively correlated with an athlete’s reported levels of anger. Fourth, it was hypothesized that scores on global anxiety, state anger, and global perfectionism would predict an athlete’s reported level of reactive aggression. Lastly, it was hypothesized that the different subscales of maladaptive perfectionism would be predictive of an athlete’s reported level of reactive aggression.

**Descriptive Statistics**

Data was collected through questionnaires administrated to 63 male collegiate Division 1 and club athletes participating in contact sports, however 13 participants did not fully complete the surveys and were excluded from the final analyses.

Descriptive statistics including means, standard deviations, and scores, computed for each subscale are located in Table 3. The means on the reactive and instrumental aggression subscales of the BAAGI (possible score range of 14 to 56) revealed that on average, the athlete’s scored similarly on both subscales, 34.10 and 33.98, respectively, with high scores representing low scores of reactive and instrumental aggression. These means indicate a moderate level of sport aggression.

On the STAXI-2 (also presented in Table 3) the athlete’s scored at the midpoint (22.23 on a 15 to 60 point scale) on the State-Anger subscale, but above the midpoint (19.42 on a 10 to 40 point scale) on the Trait-Anger subscale. The athletes’ scores on the Anger Expression and Control Index were below the midpoint (39.38 on a 32 to 128 point scale). However, the obtained range and standard deviation results suggest considerable inter-individual variability for the State-Anger and the Anger Expression and Control Index subscales.

Examination of the means on the Sport-MPS revealed that on average the athlete’s scored highest on the personal standards subscale (4.0 on a scale of 1.0 to 5.0), with a minimum score of 2.43. The next highest score was on the organization subscale (3.95 on a scale of 1.0 to 5.0). The participants scored below the midpoint on the perceived parental pressure ($M = 2.1$) and doubt about actions ($M = 2.46$) subscales and above the midpoint on the concern over mistakes ($M =$
3.12) and the perceived coach pressure ($M = 3.44$) subscales, indicating that overall the athletes scored a high level of perfectionism.

Descriptive data for the SAS revealed that the athlete’s scored below the midpoint (2.5 on a 4.0 point scale) on all three subscales of anxiety. The descriptive data for this scale can also be found in Table 3.

In summary, on average the athletes scored similarly on both subscales of the aggression measure and close to the midpoint on the State-Anger and Trait-Anger subscales of the STAXI-2; however, there was considerable inter-individual variability for the State-Anger subscale. Additionally this sample scored above the midpoint on four of the perfectionism subscales, but below the midpoint on the three subscales of anxiety.

**Preliminary Analyses**

Preliminary analyses for this study were conducted to test for differences between sport types and academic level. The results are presented in this section.

**Sport Type Differences**

Given that the sample was comprised of athletes from three different sport types, several One-way ANOVAs were used to determine if the athlete’s scores on the BAAGI, STAXI-2, Sport-MPS, and SAS varied as a function of sport type (i.e., ice hockey, football, and rugby). The independent variable for each analysis was sport type. The One-way ANOVAs determined that there were no significant differences on any of the variables by sport type. The means, standard deviations, and the results of the ANOVAs can be found in Table 4.

**Academic Level Differences**

A second preliminary analysis was conducted to determine if the athletes in the sample, who ranged in grade level from freshman to graduate student, scores differed between academic levels. Due to the unequal proportion of athletes in each grade level, One-way ANOVAs were conducted to test for differences between academic levels. The independent variable for each analysis was academic level. A One-way ANOVA determined that academic level lead to differences between scores on the State Anger subscale, $F(4, 50) = 3.36, p = .016$ and the Trait Anger subscale $F(4, 49) = 4.45, p = .004$ of the STAXI-2, the adaptive perfectionism subscale $F(4, 43) = 2.63, p = .05$ and the organization subscale $F(4, 48) = 2.93, p = .03$ of the Sport-MPS. Post Hoc tests revealed that juniors significantly differed from seniors ($M = 5.55, p = .016$) and graduate students ($M = 5.30, p = .024$) levels of Trait Anger, also juniors significantly differed
from seniors ($M = .57, p = .043$) on levels of adaptive perfectionism. Lastly, juniors significantly differed from seniors ($M = .83, p = .045$) on the organization subscale of perfectionism. The means, standard deviations, and the results of the ANOVAs can be found in Table 5.

**Main Analyses**

To test the first hypothesis that level of overall perfectionism would correlate to level of aggression, Pearson correlations were used. The variables were the global score of perfectionism as measured by the Sport-MPS, and the reactive and instrumental aggression scores as measured by the BAAGI.

The relationship between the global scale of perfectionism and reactive aggression was significant, $r(46) = -.53, p < .001$. Therefore, the participants who indicated higher levels of perfectionism also reported higher levels of reactive aggression or hostile aggression. The relationship between the global score of perfectionism and instrumental aggression was not significant, $r(46)=.08, p = .58$ Therefore the participants’ levels of global perfectionism did not show a relationship with levels of instrumental or non-hostile aggression.

To test the second hypothesis that adaptive perfectionism would demonstrate a relationship with aggression, Pearson correlations were conducted. Results of the analyses revealed the relationship between the adaptive subscales of perfectionism and reactive aggression was significant, $r(49) = -.39, p < .001$. Therefore, participants who indicated higher levels of adaptive perfectionism also reported higher levels of reactive aggression or hostile aggression. The relationship between adaptive perfectionism and instrumental aggression was not significant, $r(48)= -.03, p = .86$. Therefore, the participants’ levels of adaptive perfectionism did not show a relationship with levels of instrumental aggression.

To test the third hypothesis regarding the subscales of anxiety, as measured by the SAS, and scores on the three anger subscales, as measured by the STAXI-2, Pearson correlations were used. The relationship between the global score of anxiety and State Anger was significant, $r(44) = .53, p < .001$. Therefore participants with high levels of global anxiety also reported high levels of State Anger. The relationship between global anxiety and Trait Anger was significant, $r (44) = .36, p = .17$ Therefore participants who indicated high levels of global anxiety also reported high levels of Trait anger. The relationship between Anger Expression and Control and somatic anxiety $r(49) = .41, p = .006$, worry anxiety $r(42) = .50, p < .001$, concentration-disruption anxiety, $r(44) = .35, p = .02$, and global anxiety $r(42) = .53, p < .001$ were all
significant. Therefore, athletes who reported high levels of anxiety on all three subscales and global anxiety also indicated high levels of anger expression and control. The relationship between the somatic subscale of anxiety and state-anger was significant, $r(46) = .46$, $p < .001$. Therefore participants who indicated high levels of somatic anxiety also indicated high levels of state anger. The relationship between the somatic subscale of anxiety and trait anger was not significant, $r(46) = .29$, $p = .052$. Therefore participant’s levels of somatic anxiety were not related to their levels of trait anger. The relationship between the worry subscale of anxiety and state anger was significant, $r(44) = .39$, $p < .001$. Therefore, participants who indicated high levels of worry also indicated high levels of state anger. The relationship between the worry subscale of anxiety and trait anger was not significant, $r(44) = .28$, $p = .07$. Therefore, high scores on the worry subscale of anxiety do not reflect high scores of trait anger. The relationship between the concentration subscale of anxiety and state anger was significant $r(46) = .56$, $p < .001$. Therefore, participants who indicated high scores on the concentration dimension of anxiety also indicated high scores of state anger. The relationship between the concentration subscale of anxiety and trait anger was significant $r(46) = .33$, $p = .03$. Therefore, participants who indicated high scores on the concentration subscale of anxiety also indicated high scores of trait anger. The concentration subscale of anxiety was the only subscale with a significant relationship with trait anger, although global anxiety was significantly correlated with trait anger.

To examine if global anxiety, state anger, and global perfectionism would be predictive of an athlete’s reported level of reactive aggression a multiple regression analysis was conducted. The results of the regression equation indicated that the three predictors explained approximately 39.9% of the variance, in reactive aggression scores, $F(3, 39) = 10.23$, $p < .001$, adjusted $R^2 = .40$. In the regression equation, global perfectionism significantly predicted reactive aggression scores ($\beta = -.36$, $p = .01$), as did state anger ($\beta = -.44$, $p = .01$). Global anxiety did not predict reactive aggression ($\beta = .006$, $p = .97$).

A follow-up trimmed regression was performed with state anger and global perfectionism as predictors of an athlete’s level of reactive aggression, $F(2, 40) = 15.82$, $p < .001$, adjusted $R^2 = .41$. The result of the regression indicated that the predictors state anger and global perfectionism significantly predicted 41.4% of an athlete’s reactive aggression scores. It was found that global perfectionism significantly predicted reactive aggression scores ($\beta = -.36$, $p = .002$) as did state anger ($\beta = -.43$, $p = .008$).
A multiple regression analysis was used to test the fifth hypothesis. Specifically it tested if the forms of maladaptive perfectionism, personal standards, concern over mistakes, perceived coach pressure, and doubts about action, would predict reactive aggression. The results of the regression indicated that the forms of maladaptive perfectionism accounted for approximately 16% of the variance in reactive aggression scores, $F(4, 44) = 3.25, p = .02$, adjusted $R^2 = .16$. In the regression equation, personal standards ($\beta = -.84, p = .41$), concern over mistakes ($\beta = -.25, p = .14$), perceived coach pressure ($\beta = -.10, p = .31$), and doubts about action ($\beta = -.14, p = .32$) did not significantly predict an athlete’s level of reactive aggression.

An exploratory regression analysis was used to test if the six subscales of perfectionism, including the dimensions of adaptive perfectionism, would predict reactive aggression. The results of the regression indicated that the subscales of perfectionism accounted for approximately 28% of the variance in reactive aggression scores, $F(6, 42) = 4.09, p = .003$ adjusted $R^2 = .28$. In the regression equation, concern over mistakes ($\beta = -.32, p = .06$) and organization ($\beta = -.38, p = .006$) significantly predicted an athlete’s level of reactive aggression. In the regression equation, personal standards ($\beta = -.008, p = .96$), perceived parental pressure ($\beta = -.06, p = .66$), perceived coach pressure ($\beta = -.09, p = .56$), and doubts about actions ($\beta = -.13, p = .35$) did not significantly predict an athlete’s reported level of reactive aggression.

**Discussion**

The primary purpose of this thesis was to examine the relationship between perfectionism, anger, anxiety, and sport aggression among male collegiate contact sport athletes. Specifically, the purpose was to determine if these variables were correlated with, or predictive of, an athlete’s level of reactive - or hostile - sport aggression. Previous research has indicated that athletes with maladaptive perfectionist orientations are predisposed to experiencing anger in sport (Dunn, et al. 2006), but there is a gap in the literature correlating the experience of anger and the expression of anger. One expression of anger is aggression, thus creating a need for continued studies in this area of sport behavior.

Several analyses were conducted to test the five hypotheses and the results are discussed in the following section.

**Perfectionism and Aggression**

Based on the previous literature, it was hypothesized that high levels of global perfectionism would be correlated to high levels of aggression. A Pearson correlation revealed a
significant relationship between global perfectionism and reactive aggression. The scale used to measure aggression is inverted, meaning that high scores reflect low levels of aggression and low scores reflect high scores of aggression. As an athlete’s reported levels of perfectionism increased, so did their levels of reactive, or hostile, aggression. However, the relationship between global perfectionism and instrumental aggression was not significant. Due to the nature of reactive and hostile aggression (aggression outside the rules of sport), researchers and consultants alike are more concerned with reactive aggression than instrumental aggression. Instrumental aggression is aggression that occurs within the rules of sport and because contact sports are characterized by contact between players, instrumental aggression is to be expected. The scale used to measure aggression is inverted, meaning that high scores reflect low levels of aggression and low scores reflect high scores of aggression.

Much like aggression, perfectionism is best considered on a continuum ranging from adaptive perfectionism to maladaptive perfectionism. Based on previous research, (e.g., Dunn et al. 2006; Gotwals et al. 2010) the subscales personal standards, concern over mistakes, perceived coach pressure, and doubts about actions were considered maladaptive perfectionism. The subscales personal standards and organization were considered adaptive perfectionism. The personal standards subscale is considered both adaptive and maladaptive because setting high personal standards is one of the defining characteristic of a perfectionist profile, thus both types of perfectionists exhibit high levels of personal standards. Compared to a sample of male intercollegiate hockey players (Gotwals, et al. 2010) this sample of athletes scored slightly higher on the personal standards subscale of the Sport-MPS ($M = 3.66, SD = 0.58; M = 4.0, SD = 0.61$, respectively).

Second, it was hypothesized that adaptive perfectionism would show a relationship with aggression. This hypothesis was also supported. Participants who indicated high levels of adaptive perfectionism also reported higher levels of reactive, or hostile, aggression. Similar to global perfectionism, the relationship between adaptive perfectionism and instrumental aggression was not significant. Again, given the nature of the contact sports, it is not surprising that adaptive perfectionism was not correlated with instrumental aggression. One explanation is that contact sport athletes might not consider acts of instrumental aggression aggressive enough for contact play. This explanation is supported by Bredemeier & Shields’ (1986) finding that
contact sport athletes considered intentional aggression to be equivalent to intense competitive play, and so they could not differentiate between types of aggression.

**Anxiety and Anger**

Experiences of anger or anxiety can be interpreted as facilitative or debilitative to performance (Beedie, Terry, & Lane, 2000). Moreover, research had found that the two constructs tend to be highly correlated (Diener & Emmons, 1985; Watson & Tellegen, 1985). Because anger is frequently experienced and expressed as hostile aggressive behavior (note, hostile aggression is accompanied by anger, but instrumental aggression is not) in the athletic domain, particularly in contact sports (Maxwell, 2004; Terry & Slade, 1995), it was hypothesized that the subscales of anxiety as measured by the SAS, would show a relationship with the three subscales of anger, as measured by the STAXI-2. This hypothesis was partially supported. The relationships between global anxiety and State-Anger, Trait Anger, and Anger Expression and Control were all significant indicating that levels of overall anxiety were correlated with levels of anger. This is consistent with previous research that found rugby players levels of cognitive anxiety to be significantly predictive of anger experiences and control (Robazza & Bortoli, 2007).

The concentration-disruption subscale was significant only with trait anger. This finding is contradictory of the Robazza and Bortoli (2007) study which found that cognitive anxiety (cognitions about possible failure, cognitive anxiety is measured by the worry and concentration-disruption subscale of the SAS) was a significant predictor of trait anger. One possible explanation for this finding is the difference in the timing of the data collection. The current study collected data post season, while the Robazza and Bortoli (2007) study collected data mid-season. Moreover, anger is often experienced as reactive aggression in sport, and it could be assumed that athlete’s state anger would be more predictive of their sport aggression than trait anger. Keeler (2007) provides support for that assumption with the finding that high levels of life aggression were not related to high levels of sport aggression, indicating that athlete’s levels of trait anger might not be as predictive of their sport aggression as state-anger.

Additionally, this sample of athletes scored beneath the midpoint on the measure of anxiety, corresponding with the selections, “not at all” or “a little bit,” indicating that on average this sample does not experience sport anxiety, or collecting data in the summer may have
affected their anxiety scores. The low scores on the anxiety measure could possibly allude to a limitation of the study, which will be discussed.

**Anxiety, State Anxiety, and Perfectionism as Predictors of Aggression**

Whereas athlete’s scores on the State-Anger subscale showed high inter-individual variability, State-Anger was used in the regression formula to test the fourth hypothesis that state-anger, anxiety and perfectionism would be predictors of aggression instead of the Trait-Anger subscale. Although all athletes were surveyed during the off-season, the varying sports seasons conclude at different times, meaning that some athlete’s may have been closer to their off-season than others. This could possible explain the high inter-individual variability in the subscale. As compared to means from young male adults, the athlete’s in this study scored much higher ($M = 22.23$, $SD = 10.12$) than the males ($M = 12.46$, $SD = 4.44$) in a study conducted by Spielberger, Reheiser, and Sydeman (1995). The decision to include State-Anger levels instead of Trait-Anger levels was made for two reasons. First, it was based on research that the athlete’s levels of trait anger and aggression are not significantly different from non-athletes (e.g., Smith & Stewart, 2003). Additionally, the purpose of this thesis is to look at sport aggression and so it is thought that an athlete’s state-anger would be more predictive of their aggression in a specific sport situation than trait-anger. This hypothesis was supported. All three predictors combined significantly predicted reactive aggression scores. Interestingly, global anxiety was not a significant predictor of reactive aggression. The data was collected at the end of the school semester and early summer, therefore none of the athletes were currently in season, which may be reason for their low levels of anxiety. When compared to a sample of collegiate football players (Smith et al., 1990) that was collected during the competitive season, the current sample of athletes scored considerably lower on the subscales of anxiety. The current sample’s mean score ($M = 25.73$, $SD = 7.49$) on the global anxiety was approximately 15 points lower than the collegiate football player’s mean ($M = 40.86$, $SD = 9.99$). Therefore, a follow-up trimmed regression was performed with state anger and global perfectionism as predictors of reactive aggression and this equation accounted for slightly more variance in reactive aggression scores than the initial regression formula. These results are consistent with Öngen’s (2010) study that found the maladaptive perfectionism may increase aggressive tendencies in high school students.
Lastly, the fifth hypothesis that the six subscales of perfectionism, both adaptive and maladaptive dimensions, would be predictive of reactive aggression was supported. This is congruent with research that suggests when athletes’ perfectionist orientations are stronger, they are more predisposed to experiencing anger in sport (Vallance, et. al, 2006). However, only the concern over mistakes and organization subscales significantly predicted reactive aggression scores, while the other four subscales, personal standards, perceived parental pressure, perceived coach pressure, and doubts about actions did not significantly predict an athlete’s level of reactive aggressive. Past research has found concern over mistakes to be the most closely and consistently related subscale of perfectionism related to negative reactions (Frost & Henderson, 1991). The subscale has also been correlated with anger dispositions following mistakes (Dunn, et. al, 2006). Given those findings, it was expected that it would also be predictive of reactive aggression. Unexpectedly, the organization subscale was also predictive of reactive aggression. The organization subscale is typically, if not always, associated with adaptive perfectionistic tendencies, not maladaptive tendencies which have been found to be predictive of anger in sport. Although, the findings of this study that adaptive perfectionism was correlated to reactive aggression may provide some explanation for this finding. Given past research findings that maladaptive perfectionism is associated with experiencing anger in sport, it was also surprising that the other dimensions of maladaptive perfectionism were not predictive of reactive aggression.

**Study Limitations**

Although it was found that the variables did account for some variance in the reactive aggression scores of the athletes, there are limitations to this study. The first and most significant limitation is the low number of study participants. The results of this study might be effected with a larger sample size and power, indicating a need to replicate this study with a higher number of athletes.

Second, the State-Anger and Anger Expression Control subscales showed high inter-individual variability thus posing as a potential limitation. A number of the athlete’s scored high on state-anger while others scored relatively low therefore causing a high standard deviation between scores. Thus, the results of this study might not be indicative of the average athlete and state-anger. Truncating the data between athletes with high and low scores of state anger would be one way to account for varying scores in state anger.
A third possible limitation is the data collection procedure. Data was collected at the end of a college semester and in the summer. At the time of data collection, all three sports were out of season. Collecting data out of season is convenient for the athletes and coaches, however athletes might not be able to recall their levels of sport aggression, sport perfectionism, and sport anxiety as well when they are removed from the sport. Additionally, the athletes reported level of anxiety was very low comparable to other study populations that have been collected during the season, therefore the reported levels of anxiety might not be representative of the athlete’s anxiety while competing in sport.

**Future Research Directions**

Results of this study can be used to identify possible future research studies looking at sport aggression and perfectionism. Directions for potential research studies are discussed in the section below.

This is potentially the first study in sport aggression literature examining the relationship between perfectionism and sport aggression and so further research in this area is needed. Future research should utilize a larger sample of contact sport athletes to test the findings in this current study. Also, these results cannot be generalized to all contact sports, female athletes, non-contact sports, or individual team sport athletes and so it would be interesting to see the relationship between perfectionism and aggression in these sport populations. The athletes in this sample were collegiate athletes, and so it would be beneficial to study these relationships in youth athletes as well as elite athletes. Due to the nature of the sports, it would be predicted that non-contact and individual sport athletes may show differences in levels of instrumental aggression, since instrumental aggression or contact between players, is not allowed in these types of sport. Although the research shows that males are more accepting of hostile aggression than females, there might not necessarily be a difference between males and females in regard to the relationship between aggression and perfectionism.

Based on the findings that adaptive and maladaptive dimensions of perfectionism were predictive of reactive aggression, future research should examine the differences between these areas of perfectionism. A qualitative based study with athletes’ experiences of perfectionism may be beneficial in understanding if athletes view their own levels of perfectionism as maladaptive or adaptive. Other constructs in the sport psychology literature, such as passion and athletic identity, may also be of interest to study a possible relationship with aggression.
Due to the high inter-individual variability in the State-Anger subscale, future research should truncate the data to reflect differences between groups of athletes with high state-anger and low state-anger and then compare the means of the aggression and perfectionism measures to see if differences exist. By truncating the data, research could better explain the relationship between athletes with high state-anger and aggression, as well as the relationship between athletes with high state-anger and perfectionism.

Additionally, an ideal way to study sport aggression is through observational data or a longitudinal study. Measuring an athlete’s aggression through game data, in the form of penalties from game summary sheets, may provide a better insight to an athlete’s aggression than recall through surveys. Similar to the Loughead and Leith (2001) study that compared youth athlete’s reported aggression with their actual aggressive tendencies in sport, conducting a study in this manner using perfectionism subscales would add to the literature. Additionally using this method of data collection would investigate how well athletes are at assessing their own levels of aggression. Also, other factors of sport aggression may need to be considered, such as game outcome, playing time, and the coaching style, to better understand how perfectionism may play a role in an athlete’s sport aggression. A longitudinal study would provide researchers will multiple time points to record an athlete’s aggression, such as the beginning of the season, middle of the season, and post season. By conducting a longitudinal study, the researcher could account for other influencing factors of sport aggression previously mentioned.

In conclusion, this is an important area of study due to the severe implications sport aggression can have on sport and athletes. From a practical perspective, given the results of this study, coaches and athletes should recognize that high perfectionistic profiles in conjunction with high state anger may be a recipe for exhibiting reactive aggression in sport. Reactive aggression in sport can have detrimental effects such as fines, suspensions, penalties, and injury. This is also an area of sport that is gaining negative attention in the media further provoking the assumption that athletes are violent and aggressive. In 2011 Sports Illustrated published an article 'Rap Sheets, Recruits, and Repercussions' (Dohrmann & Benedit, 2011) and ESPN published a 'Busted' addition of the magazine with an article entitled, 'The Most Scandalous Year Ever in College Sports' (McGee, 2011) essentially placing a black mark on collegiate sports. Assuming this is not the image collegiate sports would like to project, it is important to
understand what variables effect aggression and essentially understand how to prevent sport aggression.
References


Appendix A: Informed Consent Form

Dear Participant:

You have been asked to take part in the research project described below. If you have any questions, please feel free to contact Megan Byrd, or her thesis advisers (i.e., Melissa Chase, PhD and Rose Marie Ward, PhD).

**Description of the research:** The purpose of the study is to gather information from contact-sport athletes about issues of perfectionism, anger, anxiety, alcohol use, and tendencies for aggression in your sport. By definition, contact sports are aggressive thus some aggressive behaviors are to be expected. When these aggressive acts become hostile and violent problems arise. Silva (1978) defined an aggressive act in sport as a personal, intentional, and observable act committed with the intent to injure. Every effort will be done to ensure confidentiality of your responses.

1. **YOU MUST BE AT LEAST 18 YEARS OLD** to be in this research project.
2. **YOU MUST BE A MALE, CONTACT SPORT ATHLETE** to be in this research project.
3. **Research procedures:** If you decide to take part in this study, your participation will involve filling out a survey pertaining to issues of aggression tendencies. The surveys will ask you questions about perfectionism and your competitive anxiety. Additionally, they will ask about your alcohol intake, anger levels and aggression tendencies in your sport.
4. **Time required for participation:** The survey will take approximately 40-50 minutes to complete.
5. **Potential risks:** The possible risks or discomforts of the study are minimal, although you may feel some embarrassment answering some of the questions about private matters. Resources are provided at the conclusion of this consent form.
6. **Potential benefits:** Although there are no direct benefits of the study, your answers may increase your awareness of issues that arise in your sport. Your answers will serve as a basis for understanding contact – sport athlete behaviors in the literature.
7. **Confidentiality:** Your part in the study is confidential. That means your answers to all questions are private. No one else can find out what your answers are. Scientific reports will be based on group data and will not identify you or any individual as being in this project.
8. **Voluntary participation:** The decision to participate in this research is up to you. You do not have to participate and you can refuse to answer any question.
9. **Compensation for injury:** Participation in this study is not expected to be harmful or injurious to you. However, if this study causes you any injury, you should write or call Megan Byrd at (859) 620-2297
10. **Contact information:** If you have questions about the study, you can contact the investigator, Megan Byrd, 859- 620-2297 or byrdmm@muohio.edu, or her thesis advisors, Melissa Chase, PhD chasema@muohio.edu, Rose Marie Ward, PhD wardrm1@muohio.edu.

If you have any questions or concerns about your rights as a subject, you may contact Miami University’s Office for the Advancement of Research and Scholarship, (513) 529-3600 or humansubjects@muohio.edu.

You are at least 18 years old. You have read the consent form and your questions have been answered to your satisfaction. You signing this form implies your consent to participate in this study.

If these questions are upsetting and you want to talk, please use the phone numbers below:
Miami University Student Counseling Service 529-4634
Community Counseling and Crisis Center 523-4146

Thank you,

*Megan Byrd*
Principal Investigator
Appendix B: Informed Consent Electronic Form  
Sport Aggression

Dear Participant:

You have been asked to take part in the research project described below. If you have any questions, please feel free to contact Megan Byrd, or her thesis advisers (i.e., Melissa Chase, PhD and Rose Marie Ward, PhD).

Description of the research: The purpose of the study is to gather information from contact-sport athletes about issues of perfectionism, anger, anxiety, alcohol use, and tendencies for aggression in your sport. By definition, contact sports are aggressive; thus some aggressive behaviors are to be expected. When these aggressive acts become hostile and violent, problems arise. Silva (1978) defined an aggressive act in sport as a personal, intentional, and observable act committed with the intent to injure. Every effort will be done to ensure confidentiality of your responses.

11. **YOU MUST BE AT LEAST 18 YEARS OLD** to be in this research project.
12. **YOU MUST BE A MALE, CONTACT SPORT ATHLETE** to be in this research project.
13. **Research procedures:** If you decide to take part in this study, your participation will involve filling out a survey pertaining to issues of aggression tendencies. The surveys will ask you questions about perfectionism and your competitive anxiety. Additionally, they will ask about your alcohol intake, anger levels, and aggression tendencies in your sport.
14. **Time required for participation:** The survey will take approximately 40-50 minutes to complete.
15. **Potential risks:** The possible risks or discomforts of the study are minimal, although you may feel some embarrassment answering some of the questions about private matters. Resources are provided at the conclusion of this consent form.
16. **Potential benefits:** Although there are no direct benefits of the study, your answers may increase your awareness of issues that arise in your sport. Your answers will serve as a basis for understanding contact-sport athlete behaviors in the literature.
17. **Confidentiality:** Your part in the study is confidential. That means your answers to all questions are private. No one else can find out what your answers are. Scientific reports will be based on group data and will not identify you or any individual as being in this project.
18. **Voluntary participation:** The decision to participate in this research is up to you. You do not have to participate and you can refuse to answer any question.
19. **Compensation for injury:** Participation in this study is not expected to be harmful or injurious to you. However, if this study causes you any injury, you should write or call Megan Byrd at (859) 620-2297.
20. **Contact information:** If you have questions about the study, you can contact the investigator, Megan Byrd, 859-620-2297 or byrdmm@muohio.edu, or her thesis advisors, Melissa Chase, PhD chasema@muohio.edu, Rose Marie Ward, PhD wardrm1@muohio.edu.

If you have any questions or concerns about your rights as a subject, you may contact Miami University’s Office for the Advancement of Research and Scholarship, (513) 529-3600 or humansubjects@muohio.edu.

You are at least 18 years old. You have read the consent form and your questions have been answered to your satisfaction.

Do you wish to participate in this study?  
(Drop down box: Option Yes: take to question one.  
Option no: take to debrief form) 
If these questions are upsetting and you want to talk, please use the phone numbers below: 
Miami University Student Counseling Service 529-4634 
Community Counseling and Crisis Center 523-4146

Thank you,  
Megan Byrd  
Principal Investigator
Appendix C: Debriefing Form

Debrief

Research Description: Examining the relationship between perfectionism, anxiety, alcohol use, and tendencies for aggression in male contact-sport athletes.

Thank you for helping us with our study. The purpose of the study is to gather information from male athletes about issues of aggression in contact sports. By definition, contact sports are aggressive thus some aggressive behaviors are to be expected. When these aggressive acts become hostile and violent problems arise. Silva (1978) defined an aggressive act in sport as a personal, intentional, and observable act committed with the intent to injure. The relationship between anxiety and perfectionism has not been studied as influencing factors to aggression. It is our hope that through the answers we get from you and others like you, we will begin to understand the issues surrounding aggression in contact sports. Your answers provide us with a bridge to understanding these issues.

Unfortunately, incidents of sport violence are all too common. The possible ramifications of sport violence are harm to yourself or teammates in the form of penalties, ejections, and serious injuries. The NCAA, National Football League, and National Hockey League are putting rules into effect regarding unsportsmanlike conduct and unnecessary roughness. Your answers can help us build interventions which decrease the likelihood of these incidents and help keep contact sports safe.

We appreciate your participation in this study.

If these questions were upsetting and you want to talk, please use the phone numbers below:
Miami University Student Counseling Service 529-4634
Psychology Clinic Psychology Building 529-2423
Community Counseling and Crisis Center 523-4146

If you have questions/comments, or if you are interested in getting information about the results, please call Megan Byrd at 859-620-2297 or e-mail byrdmm@muohio.edu.

For more information, please see the following references:


Please keep this for your records.
Appendix D: Debriefing Form Electronic Copy

Debriefing Form

Research Description: Examining the relationship between perfectionism, anxiety, alcohol use, and tendencies for aggression in male contact-sport athletes.

Thank you for helping us with our study. The purpose of the study is to gather information from male athletes about issues of aggression in contact sports. By definition, contact sports are aggressive thus some aggressive behaviors are to be expected. When these aggressive acts become hostile and violent problems arise. Silva (1978) defined an aggressive act in sport as a personal, intentional, and observable act committed with the intent to injure. The relationship between anxiety and perfectionism has not been studied as influencing factors to aggression. It is our hope that through the answers we get from you and others like you, we will begin to understand the issues surrounding aggression in contact sports. Your answers provide us with a bridge to understanding these issues.

Unfortunately, incidents of sport violence are all too common. The possible ramifications of sport violence are harm to yourself or teammates in the form of penalties, ejections, and serious injuries. The NCAA, National Football League, and National Hockey League are putting rules into effect regarding unsportsmanlike conduct and unnecessary roughness. Your answers can help us build interventions which decrease the likelihood of these incidents and help keep contact sports safe.

We appreciate your participation in this study.

If these questions were upsetting and you want to talk, please use the phone numbers below:
Miami University Student Counseling Service 529-4634
Psychology Clinic Psychology Building 529-2423
Community Counseling and Crisis Center 523-4146

If you have questions/comments, or if you are interested in getting information about the results, please call Megan Byrd at 859-620-2297 or e-mail byrdmm@muohio.edu.

For more information, please see the following references:


Please print and keep this for your records.
Appendix E: Debriefing Form- University Specific

Debrief

Research Description: Examining the relationship between perfectionism, anxiety, alcohol use, and tendencies for aggression in male contact-sport athletes.

Thank you for helping us with our study. The purpose of the study is to gather information from male athletes about issues of aggression in contact sports. By definition contact sports are aggressive, thus some aggressive behaviors are to be expected, however when these aggressive acts become hostile and violent problems arise. Silva (1978) defines an aggressive act in sport as a personal, intentional, and observable act committed with the intent to injure. The relationship between anxiety and perfectionism has not been studied as influencing factors to aggression. It is our hope that through the answers we get from you and others like you, we will begin to understand the issues surrounding aggression in contact sports. Your answers provide us with a bridge to understanding these issues.

Unfortunately, incidents of sport violence are all too common. The possible ramifications of sport violence are harm to yourself or teammates in the form of penalties, ejections, and serious injuries. The NCAA, National Football League, and National Hockey League are putting rules into effect regarding unsportsmanlike conduct and unnecessary roughness. Your answers can help us build interventions which decrease the likelihood of these incidents and help keep contact sports safe.

We appreciate your participation in this study.

If these questions were upsetting and you want to talk, please use the phone numbers below:
Miami University Student Counseling Service (513) 529-4634
Bowling Green State University Counseling Service (419) 372-2081
Psychology Clinic Psychology Building (513) 529-2423
Community Counseling and Crisis Center (513) 523-4146

If you have questions/comments, or if you are interested in getting information about the results, please call Megan Byrd at 859-620-2297 or e-mail byrdmm@muohio.edu. If you have any questions about your rights as a participant please contact Miami’s Office for the Advancement of Research and Scholarship (OARS) 529-3600 and humansubjects@muohio.edu

For more information, please see the following references:

Please print and keep this for your records.
Appendix F: Recruiting Script

“Hello, my name is Megan Byrd and I am in the second year of my Master’s program in the Kinesiology and Health department. First of all, thank you for your time today. As part of my degree requirements I am conducting research on the relationship between perfectionism, anxiety, anger, and aggression in male contact sport athletes. Participation would entail filling out five questionnaires that should take approximately 20 to 30 minutes. Participation is strictly voluntary. You can stop taking the surveys at any time without any consequence. Your answers will be strictly confidential and your name will never be attached to your answers. If you choose to participate, you will be part of a larger study establishing norms for contact athletes on the State-Trait Anger Inventory.”

“Due to NCAA regulations, I cannot give you any incentives for participation, however if you are interested in your own results or the results of the study I’d be happy to share those with you.”

“If you’re interested in participating in the study, I will set up a time with Coach (___) to complete the surveys.”

“Thanks again for your time and I look forward to working with you in the future.”
Appendix G: Recruitment E-mail

Athlete,

Below is a link to a survey examining the role perfectionism, anxiety, anger, and alcohol use may play on aggression in male collegiate contact sport athletes. Your answers will be completely confidential. Your name, as well as University information will NOT be collected nor attached to the surveys in any way. I would be happy to share the overall results with you; my contact information is on the survey. Completion of the survey should only take 20 to 30 minutes. Thank you!

https://survey.muohio.edu/Checkbox/Aggression.aspx

Megan Byrd
Miami University
Department of Kinesiology and Health
Graduate Assistant
205b Phillips Hall
Byrdmm@muohio.edu
Appendix H: Questionnaires

DEMOGRAPHIC INFORMATION

Age: _______

Grade Level: Freshman   Sophomore   Junior   Senior   Graduate

GPA: __________

Height: _______                      Weight: _______

Race/Ethnicity: ______________________

Estimated Family Income: Less than $20,000   $20,000 to $40,000   $40,000 to $60,000

$60,000 to $80,000   $80,000 to $100,000   $100,000 +

Sport: __________________________________________

Primary sport position: ____________________________

Years experience in specific sport: ____________________

Please estimate how many physical fouls or personal fouls you’ve received in your college career?
BAAGI Instructions

The instrument includes a number of statements which people use to describe themselves in specific sport situations. Your decision, in each instance, should be in terms of what you believe, how you feel, or how you would react, not in terms of what you think you should believe, feel or respond. Your responses will be kept strictly confidential.

Respond to each item on the answer sheet which has been provided. Use this code for responses to the BAAGI:

1. Strong Agreement
2. Agreement
3. Disagreement
4. Strong Disagreement
1. _____ I am usually unaware of angry feelings when I compete
2. _____ During an athletic performance, I am often more irritated than people may think.
3. _____ I enjoy frustrating my opponent
4. _____ When things go wrong in a game, I do not tend to take it out on my opponent.
5. _____ I relish picking my opponent apart piece by piece until that individual has nothing left.
6. _____ When I have an opponent down, I delight in keeping him/her down.
7. _____ When my opponent gets the best of me, I often get mad enough to throw something.
8. _____ At times I cannot control my urge to harm an opponent.
9. _____ At times I am surprised by my anger toward an opponent
10. _____ When the unexpected happens in a contest, I always adjust without becoming irritated.
11. _____ I am usually calm and poised before participating in an athletic event.
12. _____ It is easier for me to compete against an opponent I do not know personally.
13. _____ Performing well is more important to me than the satisfaction I get from beating somebody.
14. _____ It does not take much to upset me in an athletic contest.
15. _____ There have been times when I have “rubbed it in” after I have done something well, or my rival has done something poorly.
16. _____ You have to punish people if you want to win.
17. _____ When my coach doesn’t treat me right, I can feel resentment build up inside myself.
18. _____ I generally perform better when I keep my emotions under control and concentrate solely on performance.
19. ______ I usually do not withdraw from my teammates after frustrating competitive experiences.

20. ______ Seldom is my opponent able to pressure me into making an error.

21. ______ There have been times, in the heat of competition, when I have become aware of another side of me that I didn’t realize existed.

22. ______ I have never had a temper tantrum in a competitive sport situation.

23. ______ During competition, I more often go into an inner shell to listen to my own voice than listen to the outside noise.

24. ______ A winner is someone whose performance is completely detached from emotional responses to other people.

25. ______ I like to compete because I can take my frustrations out on my opponent in a sport event.

26. ______ My anger against officials seldom goes unchecked.

27. ______ It is easier for me to get psyched up for a competitive situation by thinking negative thoughts about my rival.

28. ______ I have never intensely disliked an opponent.

29. ______ I have never felt any desire to harm an opponent.

30. ______ I am aware of my opponent only for the sake of strategy.
Competitive Orientations Scale (Sport-MPS-2)

INSTRUCTIONS The purpose of this questionnaire is to identify how players view certain aspects of their competitive experiences in sport. Please help us to more fully understand how players view a variety of their competitive experiences by indicating the extent to which you agree or disagree with the following statements. (Circle one response option to the right of each statement). Some of the questions relate to your sport experiences in general, while others relate specifically to experiences on the team that you have most recently played with. There are no right or wrong answers so please don’t spend too much time on any one statement; simply choose the answer that best describes how you view each statement.

<table>
<thead>
<tr>
<th>To what extent do you agree or disagree with the following statements?</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If I do not set the highest standards for myself in my sport, I am likely to end up a second-rate player.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Even if I fail slightly in competition, for me, it is as bad as being a complete failure.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. I usually feel uncertain as to whether or not my training effectively prepares me for competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>4. My parents set very high standards for me in my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>5. On the day of competition I have a routine that I try to follow.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>6. I feel like my coach criticizes me for doing things less than perfectly in competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>7. In competition, I never feel like I can quite meet my parents’ expectations.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>8. I hate being less than the best at things in my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>9. I have and follow a pre-competitive routine.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>10. If I fail in competition, I feel like a failure as a person.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>11. Only outstanding performance during competition is good enough in my family.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>12. I usually feel unsure about the adequacy of my pre-competition practices.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>13. Only outstanding performance in competition is good enough for my coach.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>14. I rarely feel that my training fully prepares me for competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>15. My parents have always had higher expectations for my future in sport than I have.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>16. The fewer mistakes I make in competition, the more people will like me.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please complete the remaining items in this questionnaire on the next page.
<table>
<thead>
<tr>
<th></th>
<th>To what extent do you agree or disagree with the following statements?</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.</td>
<td>It is important to me that I be thoroughly competent in everything I do in my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>18.</td>
<td>I follow pre-planned steps to prepare myself for competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>19.</td>
<td>I feel like I am criticized by my parents for doing things less than perfectly in competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>20.</td>
<td>Prior to competition, I rarely feel satisfied with my training.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>21.</td>
<td>I think I expect higher performance and greater results in my daily sport-training than most players.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>22.</td>
<td>I feel like I can never quite live up to my coach’s standards.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>23.</td>
<td>I feel that other players generally accept lower standards for themselves in sport than I do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>24.</td>
<td>I should be upset if I make a mistake in competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>25.</td>
<td>In competition, I never feel like I can quite live up to my parents’ standards.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>26.</td>
<td>My coach sets very high standards for me in competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>27.</td>
<td>I follow a routine to get myself into a good mindset going into competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>28.</td>
<td>If a team-mate or opponent (who plays a similar position to me) plays better than me during competition, then I feel like I failed to some degree.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>29.</td>
<td>My parents expect excellence from me in my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>30.</td>
<td>My coach expects excellence from me at all times: both in training and competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>31.</td>
<td>I rarely feel that I have trained enough in preparation for a competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>32.</td>
<td>If I do not do well all the time in competition, I feel that people will not respect me as an athlete.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>33.</td>
<td>I have extremely high goals for myself in my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>34.</td>
<td>I develop plans that dictate how I want to perform during competition.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>35.</td>
<td>I feel like my coach never tries to fully understand the mistakes I sometimes make.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>

Please complete the remaining items in this questionnaire on the next page.
<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>36. I set higher achievement goals than most athletes who play my sport.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>37. I usually have trouble deciding when I have practiced enough</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>heading into a competition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. I feel like my parents never try to fully understand the mistakes I</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>make in competition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>39. People will probably think less of me if I make mistakes in</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>competition.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. My parents want me to be better than all other players who play my</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>sport.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>41. I set plans that highlight the strategies I want to use when I</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>compete.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. If I play well but only make one obvious mistake in the entire game,</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I still feel disappointed with my performance.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
State-Trait Anger Expression Inventory

Part 1 Directions: A number of statements that people use to describe themselves are given below. Read each statement and then circle the appropriate number to indicate how you feel right now. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to best describe your present feelings.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not At All</th>
<th>Somewhat</th>
<th>Moderately So</th>
<th>Very Much So</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am furious</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. I feel irritated</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I feel angry</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. I feel like yelling at somebody</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I feel like breaking things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I am mad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I feel like banging on the table</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I feel like hitting someone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I feel like swearing</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. I feel annoyed</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I feel like kicking someone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. I feel like cursing out loud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I feel like screaming</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. I feel like pounding somebody</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I feel like shouting out loud</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

Part 2 Directions: Read each of the following statements that people have used to describe themselves, and then circle the appropriate number to indicate how you generally feel or react. There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer which best described how you generally feel or react.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>16. I am quick tempered</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>17. I have a fiery temper</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>18. I am a hotheaded person</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>19. I get angry when I’m slowed down by others’ mistakes</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>20. I feel annoyed when I am not given recognition for doing good work</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>21. I fly off the handle</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>22. When I get mad, I say nasty things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>23. It makes me furious when I am criticized in front of others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>24. When I get frustrated, I feel like hitting someone</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>
25. I feel infuriated when I do a good job and get a bad evaluation 1 2 3 4

**Part 3 Directions:** Everyone feels angry or furious from time to time, but people differ in the way that they react when they are angry. A number of statements are listed below, which people use to describe their reactions they feel angry or furious. Read each statement and then circle the appropriate number to indicate how often you generally react or behave in the manner described when you are feeling angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement.

<table>
<thead>
<tr>
<th>WHEN ANGRY OR FURIOUS...</th>
<th>Almost Never</th>
<th>Sometimes</th>
<th>Often</th>
<th>Almost Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>26. I control my temper</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>27. I express my anger</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>28. I take a deep breath and relax</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>29. I keep things in</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>30. I am patient with others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>31. If someone annoys me, I'm apt to tell him or her how I feel</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>32. I try to calm myself as soon as possible</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>33. I pout or sulk</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>34. I control my urge to express my angry feelings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>35. I lose my temper</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>36. I try to simmer down</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>37. I withdraw from people</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>38. I keep my cool</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>39. I make sarcastic remarks to others</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>40. I try to soothe my angry feelings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>41. I boil inside, but I don't show it</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>43. I do things like slam doors</td>
<td>1</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>44. I endeavor to become calm again</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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<tr>
<td>45. I tend to harbor grudges that I don't tell anyone about</td>
<td>1</td>
<td>2</td>
<td>3</td>
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<tr>
<td>46. I can stop myself from losing my temper</td>
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<td>3</td>
<td>4</td>
</tr>
<tr>
<td>47. I argue with others</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>48. I reduce my anger as soon as possible</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>49. I am secretly quite critical of others</td>
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<tr>
<td>50. I try to be tolerant and understanding</td>
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<tr>
<td>51. I strike out at whatever infuriates me</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>52. I do something relaxing to calm down</td>
<td>1</td>
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<td>3</td>
<td>4</td>
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<tr>
<td>53. I am angrier than I am willing to admit</td>
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<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>54. I control my angry feelings</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>55. I say nasty things</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
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</table>
56. I try to relax  
57. I’m irritated a great deal more than people are aware of  

**REACTIONS TO PLAYING SPORTS**

**DIRECTIONS:** Many athletes get tense or nervous before or during games, meets, or matches. This happens even to pro athletes. Please read each question. Then, circle the number that says how you **USUALLY** feel before or while you compete in sports. There are no right or wrong answers. Please be as truthful as you can.

**BEFORE OR WHILE I COMPETE IN SPORTS:**

<table>
<thead>
<tr>
<th></th>
<th>Not At All</th>
<th>A Little Bit</th>
<th>Pretty Much</th>
<th>Very Much</th>
</tr>
</thead>
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<tr>
<td>1. It is hard to concentrate on the game.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>2. My body feels tense.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>3. I worry that I will not play well.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>4. It is hard for me to focus on what I am supposed to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>5. I worry that I will let others down.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>6. I feel tense in my stomach</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>7. I lose focus on the game.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>8. I worry that I will not play my best.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>9. I worry that I will play badly.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>10. My muscles feel shaky.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>11. I worry that I will mess up during the game.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>12. My stomach feels upset.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>13. I cannot think clearly during the game.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>14. My muscles feel tight because I am nervous.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>15. I have a hard time focusing on what my coach tells me to do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
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</tr>
<tr>
<td>Term</td>
<td>Definition</td>
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<tr>
<td>---------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<td></td>
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</tr>
<tr>
<td>Aggression</td>
<td>The infliction of an aversive stimulus, physical, verbal or gesture upon one person by another (Tenenbaum, et al. 1996).</td>
<td></td>
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<tr>
<td>Anger</td>
<td>An emotional state or condition marked by subjective feelings that vary in intensity from mild irritation or annoyance to intense fury and rage (Spielberger, et al., 1983).</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assertion</td>
<td>Forceful, directed behaviors which are not intended to injure an opponent. (Husman &amp; Silva, 1984).</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Hostile aggression</td>
<td>Behavior performed with the sole intention of inflicting harm on a person (Silva, 198).</td>
<td></td>
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</tr>
<tr>
<td>Reactive aggression</td>
<td>Hostile aggression in response to a perceived injustice, insult, or wrongdoing (Abrams, 2010).</td>
<td></td>
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<tr>
<td>Instrumental aggression</td>
<td>Behavior against another person that is used as a means of securing some reward or to achieve an external goal, such as victory. The harm to other is incidental and is not the perceived goal (Silva, 1983).</td>
<td></td>
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<tr>
<td>Violence</td>
<td>Harm-inducing behavior outside the rules of sport, bearing no direct relationship to the competitive goals of sport (Terry &amp; Jackson, 1985).</td>
<td></td>
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<tr>
<td>Contact sport</td>
<td>Sports that allow physical contact between players (Smith &amp; Stewart, 2003)</td>
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<tr>
<td>Collision sport</td>
<td>Sports with a large number of physical collisions and tackles (Gabbett, 2005)</td>
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<tr>
<td>Non-contact sport</td>
<td>Sports that do not permit physical contact between players (Smith &amp; Stewart, 2003)</td>
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Table 2

Correlation Data Showing Relationships Between Measures of Aggression, Perfectionism, Anxiety, and Anger

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<td>.02</td>
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<td>10.12</td>
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<td>.96</td>
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<td>19.42</td>
<td>4.84</td>
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*p <.05. **p<.01. ***p=.001.
### Table 3

**Descriptive Data for All Study Variables**

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<th>Possible Range</th>
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<td>14.0 to 56.0</td>
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<td>42.0</td>
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<td>15.0 to 60.0</td>
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<td>60.0</td>
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<td>Trait-Anger</td>
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<td>4.84</td>
<td>10 to 40.0</td>
<td>11.0</td>
<td>32.0</td>
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<tr>
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<td>11.87</td>
<td>32.0 to 128.0</td>
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<td>Perceived Coach Pressure</td>
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<td>.71</td>
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<td>1.17</td>
<td>5.00</td>
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<td>Doubts About Actions</td>
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<td>1.0 to 5.0</td>
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<td>5.00</td>
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<td>1.0 to 4.0</td>
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<td>4.00</td>
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<tr>
<td>Concentration Disruption</td>
<td>1.36</td>
<td>.46</td>
<td>1.0 to 4.0</td>
<td>1.00</td>
<td>2.40</td>
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<tr>
<td>Global Anxiety</td>
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<td>7.48</td>
<td>15.0 to 60.0</td>
<td>15.00</td>
<td>43.0</td>
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### Table 4

**Mean Differences by Sport Type**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Ice Hockey</th>
<th>Football</th>
<th>Rugby</th>
<th>F-Test</th>
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<tbody>
<tr>
<td>Reactive Aggression</td>
<td>34.17 (6.14)</td>
<td>34.1 (3.53)</td>
<td>33.9 (5.4)</td>
<td>F(2, 57) = 0.10, p = .99</td>
</tr>
<tr>
<td>Instrumental Aggression</td>
<td>33.89 (4.11)</td>
<td>33.47 (6.11)</td>
<td>35.1 (1.37)</td>
<td>F(2, 57) = .43, p = .65</td>
</tr>
<tr>
<td>Anger Expression and Control</td>
<td>38.81 (11.88)</td>
<td>39.36 (10.62)</td>
<td>42.5 (15.42)</td>
<td>F(2, 26) = .24, p = .79</td>
</tr>
<tr>
<td>State-Anger</td>
<td>20.69 (9.39)</td>
<td>24.59 (11.15)</td>
<td>23.38 (10.94)</td>
<td>F(2, 54) = .88, p = .42</td>
</tr>
<tr>
<td>Trait-Anger</td>
<td>18.25 (4.43)</td>
<td>20.88 (4.66)</td>
<td>21.5 (6.41)</td>
<td>F(2, 54) = 2.38, p = .10</td>
</tr>
<tr>
<td>Somatic Anxiety</td>
<td>8.74 (2.65)</td>
<td>8.93 (3.17)</td>
<td>11.0 (7.07)</td>
<td>F(2, 46) = .56, p = .58</td>
</tr>
<tr>
<td>Worry Anxiety</td>
<td>9.76 (3.86)</td>
<td>10.25 (2.7)</td>
<td>11.5 (7.78)</td>
<td>F(2, 45) = .25, p = .78</td>
</tr>
<tr>
<td>Concentration-Disruption</td>
<td>6.77 (2.43)</td>
<td>6.92 (2.06)</td>
<td>7.0 (2.83)</td>
<td>F(2, 47) = .03, p = .97</td>
</tr>
<tr>
<td>Global Anxiety</td>
<td>25.41 (7.6)</td>
<td>26.0 (5.89)</td>
<td>29.5 (17.68)</td>
<td>F(2, 45) = .28, p = .75</td>
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<tr>
<td>Maladaptive Perfectionism</td>
<td>3.17 (0.51)</td>
<td>3.42 (0.44)</td>
<td>3.49 (0.27)</td>
<td>F(2, 45) = 1.78, p = .18</td>
</tr>
<tr>
<td>Adaptive Perfectionism</td>
<td>4.0 (0.51)</td>
<td>3.95 (0.61)</td>
<td>4.17 (0.58)</td>
<td>F(2, 46) = .25, p = .78</td>
</tr>
<tr>
<td>Global Perfectionism</td>
<td>3.11 (0.50)</td>
<td>3.14 (0.39)</td>
<td>3.27 (0.44)</td>
<td>F(2, 44) = .22, p = .80</td>
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<tr>
<td>Personal Standards</td>
<td>3.92 (0.60)</td>
<td>4.1 (0.66)</td>
<td>4.39 (0.21)</td>
<td>F(2, 47) = 1.34, p = .27</td>
</tr>
<tr>
<td>Concern Over Mistakes</td>
<td>2.96 (0.70)</td>
<td>3.34 (0.72)</td>
<td>3.75 (0.71)</td>
<td>F(2, 48) = 3.05, p = .06</td>
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<td>Perceived Parental Pressure</td>
<td>2.18 (0.99)</td>
<td>1.87 (0.52)</td>
<td>2.19 (1.04)</td>
<td>F(2, 48) = .56, p = .58</td>
</tr>
<tr>
<td>Perceived Coach Pressure</td>
<td>3.38 (0.73)</td>
<td>3.69 (0.70)</td>
<td>3.17 (0.33)</td>
<td>F(2, 48) = 1.29, p = .29</td>
</tr>
<tr>
<td>Doubts About Actions</td>
<td>2.46 (0.75)</td>
<td>2.49 (0.79)</td>
<td>2.42 (0.17)</td>
<td>F(2, 49) = .16, p = .98</td>
</tr>
<tr>
<td>Organization</td>
<td>4.03 (0.68)</td>
<td>3.77 (0.94)</td>
<td>3.92 (1.07)</td>
<td>F(2, 47) = .52, p = .60</td>
</tr>
<tr>
<td>Variable</td>
<td>Freshman</td>
<td>Sophomore</td>
<td>Junior</td>
<td>Senior</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>--------------</td>
<td>-------------</td>
<td>-------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Reactive Aggression</td>
<td>30.0 (1.0)</td>
<td>32.13 (4.76)</td>
<td>32.79 (7.16)</td>
<td>34.25 (4.03)</td>
</tr>
<tr>
<td>Instrumental Aggression</td>
<td>34.67 (4.16)</td>
<td>33.47 (3.73)</td>
<td>36.0 (3.06)</td>
<td>33.09 (6.53)</td>
</tr>
<tr>
<td>Anger Expression and Control</td>
<td>49.0 (0.00)</td>
<td>41.9 (8.84)</td>
<td>44.09 (9.86)</td>
<td>39.64 (13.36)</td>
</tr>
<tr>
<td>State-Anger</td>
<td>40.0 (0.00)</td>
<td>22.47 (6.13)</td>
<td>27.38 (14.91)</td>
<td>20.64 (7.26)</td>
</tr>
<tr>
<td>Trait-Anger</td>
<td>20.67 (6.03)</td>
<td>21.38 (3.62)</td>
<td>22.21 (5.60)</td>
<td>16.67 (3.63)</td>
</tr>
<tr>
<td>Somatic Anxiety</td>
<td>12.0 (1.73)</td>
<td>9.56 (2.65)</td>
<td>9.54 (3.09)</td>
<td>8.5 (3.31)</td>
</tr>
<tr>
<td>Worry Anxiety</td>
<td>9.5 (2.12)</td>
<td>9.88 (4.01)</td>
<td>9.84 (3.58)</td>
<td>10.92 (4.60)</td>
</tr>
<tr>
<td>Concentration-Disruption</td>
<td>9.67 (2.51)</td>
<td>9.67 (2.60)</td>
<td>6.54 (2.15)</td>
<td>7.17 (2.33)</td>
</tr>
<tr>
<td>Global Anxiety</td>
<td>33.5 (3.54)</td>
<td>26.11 (7.83)</td>
<td>25.92 (8.03)</td>
<td>26.58 (8.18)</td>
</tr>
<tr>
<td>Maladaptive Perfectionism</td>
<td>3.34 (0.34)</td>
<td>3.41 (0.55)</td>
<td>3.27 (0.60)</td>
<td>3.23 (0.43)</td>
</tr>
<tr>
<td>Adaptive Perfectionism</td>
<td>3.82 (0.82)</td>
<td>4.13 (0.51)</td>
<td>4.30 (0.37)</td>
<td>3.73 (0.52)</td>
</tr>
<tr>
<td>Global Perfectionism</td>
<td>3.31 (0.27)</td>
<td>3.35 (0.65)</td>
<td>3.14 (0.50)</td>
<td>3.06 (0.35)</td>
</tr>
<tr>
<td>Personal Standards</td>
<td>26.0 (6.08)</td>
<td>28.5 (4.04)</td>
<td>29.54 (2.82)</td>
<td>27.08 (4.06)</td>
</tr>
<tr>
<td>Concern Over Mistakes</td>
<td>25.0 (4.36)</td>
<td>26.63 (6.05)</td>
<td>25.3 (8.47)</td>
<td>23.83 (4.53)</td>
</tr>
<tr>
<td>Perceived Parental Pressure</td>
<td>25.0 (3.0)</td>
<td>22.75 (10.74)</td>
<td>17.0 (8.38)</td>
<td>19.75 (6.50)</td>
</tr>
<tr>
<td>Perceived Coach Pressure</td>
<td>22.0 (1.0)</td>
<td>22.44 (2.13)</td>
<td>21.31 (5.75)</td>
<td>20.5 (3.83)</td>
</tr>
<tr>
<td>Doubts About Actions</td>
<td>17.33 (2.08)</td>
<td>15.44 (4.39)</td>
<td>12.15 (4.81)</td>
<td>16.0 (4.35)</td>
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</tbody>
</table>