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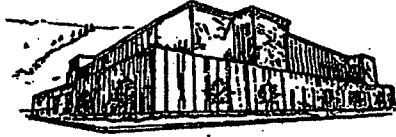
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AN EXAMINATION OF ANGER: DIFFERENCES IN TENNIS AND BASKETBALL
COLLEGE ATHLETES

by

Melanie Swain

B.S. Rocky Mountain College, United States 2000

presented in partial fulfillment of the requirements

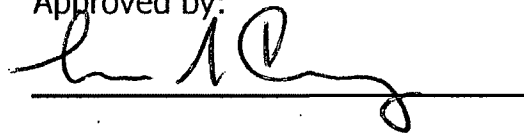
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Master of Science

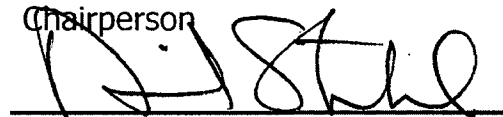
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Abstract

Swain, Melanie B.S., May 2003

Health and Human Performance

An Examination of Anger: Differences in Tennis and Basketball College Athletes

 Director: Lewis A. Curry, P.D.

Research in the area of anger and anger management in athletes is minimal; specifically, tennis athletes have been overlooked. The purpose of the study is to determine if state anger, trait anger, anger-in (suppression), anger-out (expression), and anger control in tennis players (i.e., sport where contact and anger expression is expressly forbidden) differs from basketball players (i.e., sport where contact and anger expression may be more fully expressed) using The State-Trait Anger Expression Inventory (STAXI-2, Spielberger, 1999). NCAA Division 1 basketball and tennis student-athletes ($N= 99$) from four northwest Universities participated. This study yielded no statistical significant differences in anger control and anger expression with tennis and basketball athletes, and these student-athletes did not show any significant differences in trait anger. The belief that gender does not affect anger was supported by this study. Despite these non-significant sport differences results, effect size analysis demonstrated more research may yield different findings and further research in this area was recommended.

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Introduction

In all aspects of our lives, we inevitably experience anger. However, we all differ in how we express and control this anger. Across all cultures and even in the very beginning stages of our lives, we show a facial expression of anger (Ekman, Frieen, & Ellsworth, 1982; Izard, 1977). So, it is no surprise that athletes experience anger while participating in sports. In fact, it is difficult to separate competitiveness and anger expression in sports participation (Green, A.F., Sears, S.F., & Clark, J.E., p. 523).

Does this anger get in the way of performance? It can. One tennis great said, "A good day for me is one without self-disgust. I concentrate hard when I play, too hard. I get ill-tempered as soon as I make a couple of bad shots and thus pull myself farther and farther down" (Steffi Graf, 1996, p. 51). If a person spends a large amount of energy controlling angry feelings, performance is likely to decrease (Spielberger, 1988). Human beings can experience a wide range of emotions, anger being one of them. Anger is often induced by stress, especially in sports, and is linked with arousal in competitions. Performance may be affected by anger, as it can cause disturbances in precision and concentration or lead an athlete to injure another player (Isberg, 2000, p.113). In 1985, Cox gave an example. To help the reader understand, he used playing tennis while spending energy on other tasks:

For example, in a close game of professional tennis, one can expect close calls by line judges to significantly distract each player. The

professional who is able to gate out the adverse decisions and attend the game should have a decisive advantage. This is true because playing flawless tennis and fretting over a bad call both demand information processing space. To try to attend both will result in a decrement in performance. (Cox, p.58)

Though there is a vastly larger quantity of research on emotional problems such as anxiety and depression, research on anger and anger reduction is beginning to receive more attention in applied psychology (Deffenbacher, 1996, p. 131). Past researchers and practitioners have not clearly defined anger. Terms like hostility and aggression have often been used interchangeably with anger (Berkowitz, 1962; Buss, 1961; Stearns, 1972; Deffenbacher, 1996). This inconsistent vocabulary led to the development of anger instruments that lacked consistent validity and reliability (Biaggio, Supplee, & Curtis, 1981; Spielberger, Johnson, Russell, Crane, 1983). Therefore, more instruments have been developed and new concepts introduced (Speilberger, Johnson, Russell, Crane, Jacobs, & Worden, 1985).

1.1 Anger Defined

Anger is one of the least understood human emotions, yet it is also one of the most intriguing (Tavris, 1984). Many different definitions of anger exist. One recent definition is "A negative, phenomenological (or internal) feeling state associated with specific cognitive and perceptual distortions and deficiencies (e.g., misappraisals, errors, and attributions of blame, injustice, preventability,

and/or intentionality), subjective labeling, physiological changes, and action tendencies to engage in socially constructed and reinforced organized behavioral scripts" (Kassinove & Sukhodolsky, 1995). Feshbach (1964) referred to anger as an undifferentiated emotional arousal state. Later, another researcher added the idea of intention of harm to another person to Feshbach's definition (Kaufman, 1970). Stearns (1972) argued that anger was not aggression or hostility, but as a result of suppression, anger could lead to those emotional responses. In an attempt to clear up the massive confusion between anger, hostility, and aggression in the research community, Spielberger et al. (1983) stated.

Anger usually refers to an emotional state that consists of feelings that vary in intensity, from mild irritation or annoyance to intense fury and rage. Although hostility usually involves angry feelings, this concept has the connotation of a complex set of attitudes that motivate aggressive behaviors directed toward destroying objects or injuring other people. . . . While anger and hostility refer to feelings and attitudes, the concept of aggression generally implies destructive or punitive behavior directed towards other persons or objects. (Spielberger, Jacobs, Russell, & Crane, 1983, p. 16)

In another attempt to help clear up the confusion and terminology flaws, Spielberger and his associates adapted the accepted state-trait personality theory to anger (Spielberger, 1988; Spielberger et al., 1983; Spielberger, Krasner, &

Solomon, 1988; Spielberger, Reheiser, & Sydeman, 1995). Following are their definitions of state and trait anger:

State anger (S-anger) was defined as an emotional state or condition that consists of subjective feelings of tension, annoyance, irritation, fury and rage, with concomitant activation or arousal of the autonomic nervous system. We further assumed that S-Anger can vary in intensity and fluctuate over time as a function of perceived affronts or injustice, or frustration resulting from the blocking of goal-directed behavior.

Trait anger (T-anger) was defined as terms of individual difference in the frequency that S-Anger was experienced over time. It assumed that persons high in T-Anger were more likely to perceive a wide range of situations as anger provoking (e.g., annoying, irritating, frustrating), and to respond to such situations with elevations in state-anger. In addition to experiencing the arousal of S-Anger more often, persons high in T-Anger were expected to experience more intense elevations in S-Anger whenever annoying or frustrating conditions were encountered. (Spielberger et al., 1983; pp. 166-167).

Simply articulated, State Anger is the anger that an individual feels at the present time, right now, not what they will feel or how they did feel

earlier, and Trait Anger is unique variation in the rate of recurrence over time that State Anger is experienced.

1.2 Theories of Anger

1.2a Psychoanalytic View

There are many different theories of anger. These theories range from psychological issues to social issues. The traditional psychoanalytic view believes emotions to be related to drive, and that repressing these urges may be unhealthy (Rapaport, 1967). Supporters of the psychoanalytic view believe that for a person to stay healthy, the individual must release their angry feelings. They believe that if a person does not go through this release, he or she risks the chance of suffering physical or psychological sickness (Thomas, 1990). Stuart & Sundeen (1987) contend that a release of tension is vital. Anger may be repressed, but at some point, in some form or another it will be expressed. Mostly professionals and researchers in the medical field support the psychoanalytic theory.

However, every theory has critics. Those who oppose the psychoanalytic theory believe that always venting anger is not the best course of action. Their belief is that the repercussions and consequences of venting should be considered, because releasing tension by venting anger is likely to solve nothing and cause more problems than were present at the beginning (Lerner, 1985). There are studies, which show that venting anger can cause an individual to become more agitated than if they had remained calm. In addition, studies

suggest venting one's anger can cause health related problems (Greer & Morris, 1975; Johnson & Broman, 1987; Kaplan, 1975; Mathews, Glass, Rosenman, and Bortner, 1977).

1.2b Sociocultural View

Another theory on anger is the sociocultural theory. The foundation of this theory lies with the conceptual groundwork of James, Mead, and Vygotsky (Goffman, 1963; Wertsch, 1985). This theory focuses on the repercussions and interactions of people who are the target of anger. When a person's expectations are not met, this individual may experience a form of anxiety (Sullivan, 1953). This anxiety then leads to anger. The anger allows the anxious individual to feel in control of the situation. Sociocultural theorists think that anger is an interpersonal occurrence and that behavior and identity are context specific. Inconsistent social behavior across the different social contexts exists because of the variability in the social relationships that are in these circumstances (Malloy, Albright, Kenny, Agatstein, & Winqvist, 1997).

1.2c Social/Psychological View

Recent theories with a social and psychological basis believe that anger mostly occurs between friends or individuals who are close to one another. If a perceived injustice occurs then anger theoretically will follow (Julius, Harburg, Cottington, & Johnson, 1986; Tavis, 1989). One of the first behavioral theories on anger was the frustration-aggression hypothesis (Dollard, Doob, Miller, Mowrer, & Sears, 1939). In the 1940s and 1950s, this theory quickly became the

principal psychological theory pertaining to aggressive behavior. Supporters of this theory rejected instinctual models of aggression (e.g. Freud, 1933/1959; McDougall, 1908), believing instead that frustration provoked and stirred an internal drive that motivated aggressive behavior. This theory contended that hindrance of an activity where a goal is set leads to an aggressive drive that in turn instigates a behavior that is intended to harm the individual whom it is directed (Bandura, 1977). The frustration-aggression theory has little support by today's professionals because of its insistence that frustration must always lead to aggression.

1.2d Social Learning Theory

The social learning theory predicts behavior by generalized expectancies for problem solving combined with situational expectancies and reinforcement values (Rotter, 1954, 1982; Rotter et al., 1972). This explains aggression as a behavior which individuals learn by watching others. These individuals then model their behaviors after these other people. Next, reinforcement is received for exhibiting similar actions and attitudes. An assortment of responses can be expressed with this view. Depending on what the individual has learned to be an effective coping method to the adverse treatment they received.

This is seen to be true with young athletes who often imitate their favorite players. This patterning can be a very positive experience, but all professional athletes have good and bad qualities. Observing and emulating bad habits only continues the use of negative habits in sport. One example was found in 1988

when Smith discovered that violence in professional hockey is modeled by younger players of all ages. He discovered that being aggressive is accepted and rewarded in hockey, and players learn at an early age that personal recognition is gained through aggressive play. The social learning theory has gained considerable support over the years (Bandura, 1977b; Thierer, 1993).

1.2e Revised Frustration Aggression Hypothesis

Another view was presented by Berkowitz (1989), when he redesigned the frustration-aggression hypothesis (Dollard, Doob, Miller, Mowrer, & Sears, 1939) to state, “. . .frustrations generate aggressive inclinations to the degree that they arouse negative affect” (Berkowitz, 1989, p. 59). Then he says that this negative affect “. . .gives rise automatically to a variety of expressive-motor reactions, feelings, thoughts, and memories that are associated with both flight and fight tendencies, that is with inclinations to escape/avoid and to attack” (Berkowitz, 1989, p. 69). The frequency and intensity of aggression is influenced by increased levels of frustration, higher goal expectations, and/or increased interference with attaining preset goals (Berkowitz, 1989). The increase in arousal and anger only results in aggression if it is accepted socially. In this reformation, Berkowitz linked the frustration-aggression theory to the fight-or-flight behavioral reaction concept of Cannon (1914). Professionals generally agree that frustration arouses anger and provokes aggression (e.g., Averill, 1977; Berkowitz, 1962; 1989). This revision of the frustration-aggression

hypothesis also incorporates the social learning theory. Berkowitz's revised theory is widely accepted.

1.2f AHA! Syndrome

More recently, Spielberger et. al. (1985), propose the AHA! Syndrome. This theory combines anger, hostility, and aggression. This combination was due to the substantial overlap in the fundamental conceptual definitions of anger, hostility, and aggression. In the AHA! Syndrome, the emotion is anger (A), the trait is hostility (H), and the expression style of anger is aggression (A). In this theory, anger is the foundation variable, and then different aspects of this emotion are often accentuated in various forms of hostility and aggression. Spielberger developed the STAXI scales to measure the multidimensional nature of this construct.

1.3 Model of Anger

1.3a. Navaco's Cognitive Model of Anger Arousal (1979). The Cognitive Model of Anger Arousal, Appendix C, (Novaco, 1979) is an accepted anger related model (Tulloch, 1990). The basis of this model is in the concept of stress, and the relationship of the interaction between the angry person and the surrounding environment (Lazarus & Folkman, 1984). According to the Cognitive Model of Anger Arousal, external events, internal processes, and behavioral reactions influence anger. Novaco's model allows for the multidimensional construct of anger by

showing the non-linearity process, the potential for delayed onset of anger, and the importance that anger may carry (Tulloch, 1990).

For this model, anger is viewed as a being shaped by the interaction between external events, the method they are processed cognitively, and the behaviors displayed as a response. Novaco believed that these external events were annoying, frustrating, or upsetting in some manner to the person. The appraisals, expectations and private speech characteristic of the individual were then weighed cognitively. With the final step being the person reacting behaviorally to the perceived negative events through some form of withdrawal, antagonism, or aggression (Navaco, 1979).

Navaco believed that these three determinants of anger mutually influenced one another, yet he placed the cognitive process in the center of the experience of anger. This central role of the cognitive process implies that people who experience anger on a reoccurring basis might have particular maladaptive cognitive styles that prompt them to view events in a negative light (Lopez & Thurman, 1986).

1.4 Effects of Anger

Anger affects us in a three-dimensional way. These three dimensions of anger effect are physiological, psychological, and self-talk. When a person becomes angry, each of these three areas is altered. With athletes, these changes can affect performance. For example, if muscles

tighten, aggressiveness increases, focus decreases, and the athlete talks to himself in a negative manner, it becomes increasingly difficult to perform effectively (Alschuler & Alschuler, 1984; Novaco & Robinson; Tulloch, 1990). When angry, it will then be difficult to perform simple motor tasks (e.g. three-point shot in basketball, hitting the ball inside the lines during a tennis match) much less perform complex motor tasks (e.g. a drop shot in tennis, a free throw shot in basketball).

Outward anger expression has also been associated with coronary artery and heart disease and cardiovascular reactivity (Siegman, et al., 1989, 1996; Helming et al, 1991; Mendes de Leon, 1992; Diamond, 1982; Alexander, 1939; Ayman, 1933). Simply using an angry voice instead of inwardly expressing anger significantly raises cardiovascular levels. Individuals in anger-arousing situations may experience an increase in blood pressure, heart rate, cortisol, and epinephrine (Siegman & Snow, 1997; Everson, et al., 1998). On the other hand, there is also some evidence to suggest that emotion inhibition may aggravate minor ailments (Pennebaker, 1990) and that non-expression may accelerate the development of cancer (Fawzy et al., 1993; Gross, 1989; Spiegel, Bloom, Kraemer, & Gottheil, 1989).

1.5 Emotion Regulation

Our social world is complex and emotional expression may be unwelcome in many situations. Everyday we regulate our emotions, and

because regulation is so common a social emotional outburst or expression stands out. Emotions persuade us to act in certain ways, but they do not force us to act. We can deny expression, and individual difference in expression suggests that the response tendencies of individuals differ (Gross & John, 1997). This difference in expression may begin at several different steps in the process. Day to day experiences vary, which provides different inputs to individual emotional programs. These different inputs may be magnified or weakened by the manner which the individual views them (Gross & John, 1997). The research on temperament implies that individual differences in activation thresholds and response tendencies exist (Davidson, 2000; Diener & Diener, 1996; Eisenberg, et al., 1997; Fox, et al., 2001; Kennedy-Moore & Watson, 1999; Goldsmith, 1993; Kagan & Snidman, 1991). Emotions define the quality of human experience and they motivate thought and action. Strong emotions have the ability to negatively affect task performance (Izard, 2002).

1.6 Current and Past Literature on Anger in Sport

Research in the area of anger and performance is minimal, and where there are studies, many of them have design flaws or have not been replicated by other researchers with similar interests. In the past 20 years, research in the field of sport psychology has focused on elite athletes and coaches. These resources are of utmost importance to understand performance (Mahoney &

Avenor, 1977; Gould, Weiss, & Weinberg, 1981; Mahoney, Gabriel, & Perkins, 1987).

Earlier studies of elite performers used the traditional experimental design with a control group and an experimental group. These studies do not transfer well to the natural setting of the playing field inhabited by athletes and coaches (Striegel, 1992). In the past decade, many researchers have used qualitative methods. These designs have their main focus on studying cases intensively in a natural setting. The researcher then reflects on this personal experience to report the findings. Using qualitative designs has aided in learning about elite performance.

Green et al. (1993) studied the differences between varsity football athletes and intramural football athletes in trait anger, anger expression, and sports orientation using a sample of male varsity and intramural flag football athletes. The main results suggest that varsity athletes did not statistically differ significantly in trait-anger predisposition from intramural athletes. Yet they did report less anger-in (tendency to suppress anger when experienced), anger-out (tendency to express anger toward other people or objects), and anger-control (tendency to control the experience and expression of anger) than the intramural college students. Green et al. suggested that:

A more plausible explanation for the lower report of expression of anger in the varsity athletes may be that their election to participate in high-contact football serves as a control valve or

release for feelings of anger and frustration, which results in minimized self-reports of generalized anger expression. In other words, varsity athletes may 'take their anger out on the field' more than intramural athletes, resulting in less expression of anger in other settings. (Green, 1993, p. 527)

1.7 Current and Past Literature on Anger in Tennis

Popular literature supports the idea that anger is a relevant issue in tennis. However, there is little written pertaining to this construct in the scientific literature. Research in psychology and in sport psychology contributes minimal insight into the relationship between anger and performance in tennis players. Most of these studies do not have a focus on anger, or more specifically, on the role anger plays on the tennis court (McCaffrey & Orlick, 1989; Scanlan, Stein, & Ravizza, 1989, 1991; Hanson, 1992; Ripol, 1992; Lerner, 1992; Striegel, 1993).

In one existing study, Striegel (1993) used nine male professional tennis players in a qualitative study on anger management and performance. All the tennis players observed had previously been ranked in the United States Tennis Association's (USTA) top ten list at least five times. The major categories in this study were: anger and the developmental years, the expression of anger, causes of anger, effects of anger on performance, coping with anger, and using anger to one's benefit. Striegel stated that his findings could not be generalized to the larger population, but did provide a deeper understanding of the nine professional tennis athletes and their beliefs about the relationship between

anger and performance. These athletes believed that getting angry on the court was unavoidable. In such an intense competition, emotions will naturally run high and often find outward expression (Striegel, 1993, p. 78). However, they also believed that there are ways in which a player can deal with this anger without letting it affect his performance in a negative manner. Another idea broached in this study discussed controllable and uncontrollable situations and how they lead to anger. The sample of professional tennis athletes believed that controllable situations (e.g., getting to the match in time to warm up properly and being prepared mentally and physically) should be dealt with before the start of the match. Uncontrollable situations however (e.g., close line calls and bad weather), are unavoidable and should be dealt with on a case-by-case basis. For athletes, the primary cause of anger is frustration. In order to avoid high levels of frustration, one must possess the ability to brush aside the past and move toward the future. One must be so engrossed by the present that the previous game, set, or point has no bearing (Striegel, 1993, p. 80). The researchers in this study provide preliminary findings on anger and performance.

More preliminary data was provided by Gould et. al. (1999). Gould polled 153 junior tennis coaches to determine their opinions about the importance of specific mental skills training, what mental skills they taught, and circumstances that hindered the teaching of mental skills. These researchers found that emotional control is a mental skill that is rated high in importance, taught to athletes of all ages, but rather difficult to teach effectively.

Van Raalte et al. (2000) examined the consequences and antecedents of self-talk in competitive tennis performance. They used eighteen adult USTA tournament tennis players. These athletes were observed during USTA sanctioned matches. The audible self-talk, noticeable gestures, and tennis scores were recorded. Results indicated that all athletes used observable gestures and self-talk during matches, and the circumstances in the match (e.g., aftermath of the point and serving standing) predicted the use of negative self-talk.

In another area of anger research, authors suggest that behavioral interventions dealing with anger in sport can be effective (Jones, 1993; Daw & Burton, 1994; Allen, 1998). Jones (1993) reported a successful intervention using a top-10 female racket sport player. This elite athlete had a problem with her on-court temperament. She became extremely angry and frustrated in pressure situations. The governing body of her sport had previously fined and suspended this athlete due to her temperament on the court, and she was referred to a sport psychologist. The researchers in this study then presented the elite athlete with anger management problems, a cognitive behavioral intervention which proved to be successful.

Another intervention case study (Allen, 1998) used a 14-year old male tennis player who had a long history of anger control problems during matches. At first, this intervention was extremely successful, but after a period of time, the young man did revert back to some of his previous habits.

The literature also provides examples of research coinciding with an athlete to prevent psychological problems. In 1994, Daw and Burton, examined the impact of a comprehensive psychological skills training program on male and female college tennis athletes. Some of the skill components were relaxation, arousal regulation, and focusing. These researchers found both practical and statistical significance in their case study with intra-team and inter-team results. All the players in the sample benefited from the psychological skills training program implemented.

When studying anger, it is important to understand the differences in gender and the effect that gender may have on anger. There are many research studies on the relationship of gender and anger expression that use self-report measures of anger (Greenglass & Julkunun, 1989; Kopper, 1993; Kopper & Epperson, 1991; Thomas, 1989; Thomas & Williams, 1990). In 1996, Bartz, Blume, and Rose investigated gender differences in anger control, expression, and experience. They used 509 men and women students from two private mid-western colleges. Contrary to what one might have thought, no significant gender effects on the expression and control of anger were found. A similar study in 1994 by Ewart and Kolodner found no gender differences among adolescents on self-reported anger arousal or range of anger. Kopper (1993) found no gender differences on the Anger-In, Anger-Out, and Anger-Control scales using Spielberger's Anger Expression Scale. When the original norms for the STAXI were processed, there were no gender differences found for a sample

of college students (Spielberger, 1988). Kopper and Epperson (1996) used a sample of 705 male and female college students to investigate the relationships between the expression and experience of anger and gender, gender role characteristics, and several other mental health variables. Again, gender was not significantly related to anger suppression. Like the previously mentioned studies, these results support the idea that there is no significant difference in the expression of anger based on gender.

The cathartic theory of aggression is presently not being supported by researchers (Berkowitz, 1964; Layman, 1970; Huang, Cherek, & Lane, 1999). This theory believes that athletes who perform alone during competition or have low/no contact with opposing views/opponents will express a higher need to be aggressive or to express anger (Edwards, 1959; Berger, 1977). Studies both support and refute this theory (Ostrow, 1974; Berger, 1977; Greene, Sears, & Clark, 1993; Huang, Cherek, & Lane, 1999), the author believes that like many hypotheses and theories we do not know enough to reject it completely.

1.8 Purpose of the Present Study

The purpose of the study is to determine if trait anger, anger-in (suppression), anger-out (expression), and anger control in tennis players differs from basketball players. Tennis is a sport that requires the athletes to play extremely aggressive yet there is no contact or release of this aggression. Basketball athletes were chosen as the comparison sport because basketball is a contact sport, which requires athletes to compete at a high level of aggression.

Another purpose of this study is to lend support to the catharsis theory, as tennis athletes may have greater problems with anger due to the lack of acceptable physical contact in their sport.

1.9 Hypothesis

There are five main hypotheses in this research study.

1.9a Hypothesis #1. Due to the lack of emotional catharsis gained by physical rough play with opponents as part of acceptable behaviors in sport, tennis players lack a physical release of tension as demonstrated by a higher level of anger expression when compared to basketball players.

1.9b Hypothesis #2. Due to the lack of emotional catharsis gained by physical rough play with opponents as a part of acceptable behaviors in sport, tennis players lack a physical release of tension as demonstrated by a lower level of anger control when compared to basketball players.

1.9c Hypothesis #3. Basketball and tennis athletes will not differ in their levels of trait anger as measured by the STAXI-2 (Spielberger, 1999).

1.9d Hypothesis #4. Basketball and tennis athletes will not differ in their levels of state anger as measured by the STAXI-2 (Spielberger, 1999).

1.9e Hypothesis #5. Gender will have no effect on the scores.

1.10 Significance of Study

The significance of this study is to aid in filling a gap in the literature. There is a limited amount of research on anger in tennis players, and research focusing on anger management, anger control, and anger expressing in tennis

athletes is minimal. The results of this study will assist tennis coaches and athletes by helping them to understand anger.

Methodology

2.1 Participants

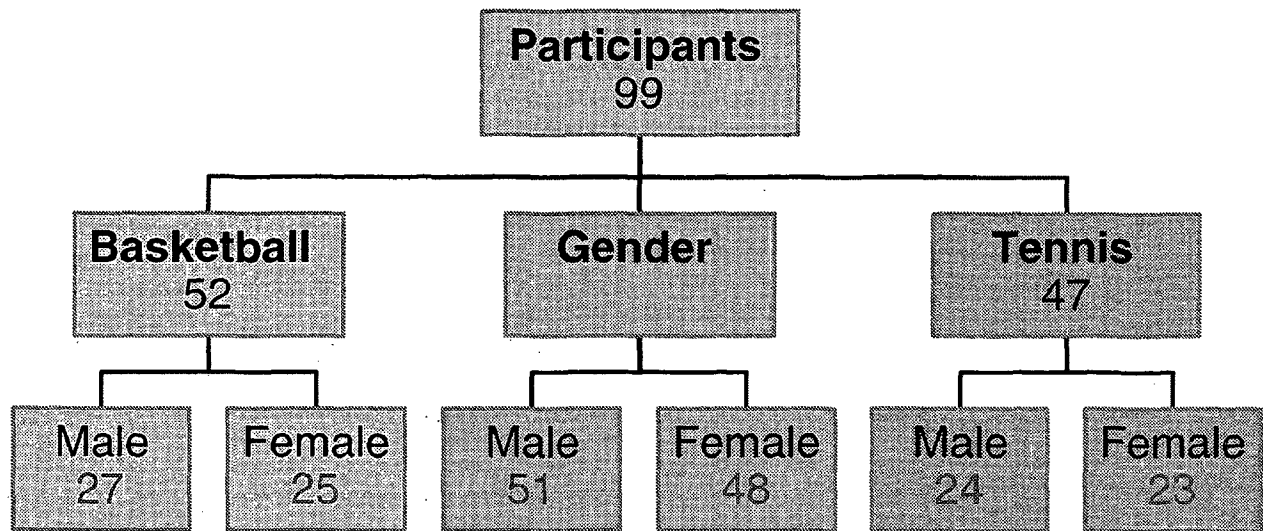
The subjects for this research were both male and female varsity basketball and tennis teams from four NCAA Division 1 Universities in the northwest. These basketball and tennis teams are affiliated with the University of Montana, Stanford University, University of Idaho, and Washington State University.

2.1a Criteria for inclusion in the study. To be qualified to participate in the study, all of the individuals were NCAA eligible athletes and current members of their respective teams.

2.1b Recruitment of the subjects. This researcher contacted each individual coach by telephone and email, to gain permission to meet with their athletes. Once permission was granted a date and time was established at the convenience of the coach and their team.

2.1c Characteristics of subject population. There were 99 total subjects for this study. These subjects were both male and female Division 1 tennis and basketball athletes. There were 51 male participants and 48 females. Basketball players accounted for 52 of the subjects with 47 participants tennis athletes. Of the 52 basketball athletes, 27 were male and 25 were female. With the 47 tennis athletes, there were 24 males and 23 females. This population represented freshmen, sophomore, junior, senior, and graduated level academic years, and their ages ranged from 18 to 26 years old with a mean of 20.3.

Figure 2.1



2.2 Measures

The State-Trait Anger Expression Inventory (STAXI-2, Spielberger, 1999) is a revision of the State-Trait Anger Expression Inventory (STAXI) (Spielberger, 1988). The inventory was expanded from the original 44 items to 57. Another modification was the inclusion of an eight-item scale to assess the control of anger-in. In the state-anger section, three different components were added. These new components are Feeling Angry, Feel Like Expressing Anger Verbally, and Feel Like Expressing Anger Physically. The Trait-Anger, Anger-In, and Anger-Out scales from the STAXI were untouched and re-included in the STAXI-2 (Spielberger, 1999). The STAXI-2 (Spielberger, 1999) has six major scales and five subscales. These subscales evaluate the experience, expression, and control of anger.

Since the STAXI-2 (Spielberger, 1999) is a new instrument, there are few reliability and validity studies. However, the STAXI showed reliable and valid scores for samples with same characteristics of my participants.

2.3 Procedures

Each of the 16 athletic teams met with this researcher separately at their respective universities. As a group, the procedure of the study was described, and participants were informed of what was expected from them personally. The researcher explained to the athletes that their participation was voluntary. Then the informed consent form (Appendix A) was passed out to the group. Once the subjects had a chance to read the consent form, the researcher asked if there were any questions. When all questions were answered the athletes were asked to sign the consent form. After the completion of this form, a demographic survey was administered to each participant. Next, the athletes completed the STAXI-2 (Spielberger, 1999). When all participants finished the STAXI-2 (Spielberger, 1999), they were thanked for their participation, and the team meeting was adjourned.

2.4 Data Analysis

A series of parallel analyses consisting of 2 (gender: male, female) x 2 (sport: tennis, basketball) Univariate Analyses of Variance (ANOVA) evaluating the main effects and interactions were conducted. Each analysis will have gender and sport as fixed factors. Conversion to t-scores was performed in an attempt to equalize the scores of males and females. State Anger, Feeling Angry, Feeling

Like Expressing Anger Verbally, Feeling Like Expressing, Anger Physically, Trait Anger, Angry Reaction, Angry Temperament, Anger Control Out, Anger Control In, Anger Expression Out, Anger Expression In, and Anger Expression Index were all dependent variables. The independent variables were gender and sport.

Along with the 2x2 ANOVA, Cohen *d* effect size analyses were conducted to measure the meaningfulness of possible differences. Significance for this study was set at .05.

Results

For each ANOVA procedure, there was limited significant interaction; therefore, analysis focused on main effect differences. Further, specific to gender differences, all STAXI-2 (Spielberger, 1999) Anger subscales yielded non significant main effect differences by gender; these results support hypothesis 5, that gender has no effect on anger. ANOVA results presented below focused on sport differences specific to the hypotheses of the study.

3.1 Anger Expression Out

Basketball athletes ($M = 15.10$, $SD = 3.77$) and tennis athletes ($M = 16.21$, $SD = 3.56$) did not differ in their scores on the Anger Expression Out scale ($F [1,95] = 2.282$, $p = .134$, $d = .30$ ns). These results do not support hypothesis one.

3.2 Anger Expression In

On the Anger Expression In scale, there were no significant differences ($F [1,95] = .323$, $p = .571$, $d = -.114$ ns) in the scores of the tennis ($M = 17.11$, $SD = 4.34$) and basketball athletes ($M = 17.58$, $SD = 3.91$). Results do not support hypothesis one.

3.3 Anger Expression Index

Tennis ($M = 35.98$, $SD = 12.45$) and basketball ($M = 33.17$, $SD = 11.99$) players did not show a statistical difference on the Anger Expression Index ($F [1,95] = 1.304$, $p = .256$, $d = .23$ ns). Hypothesis one was not supported by these results.

3.4 Anger Control Out

Results for athletes, tennis ($M=22.98$, $SD=4.68$) and basketball ($M=24.77$, $SD=4.88$) on the Anger Control Out scale yielded no difference ($F[1,95]=3.452$, $p=.066$, $d=-.38$). This result does not support hypothesis two.

3.5 Anger Control In

The results showed no significant difference in scores for tennis players ($M=22.36$, $SD=4.99$) and basketball players ($M=22.94$, $SD=4.88$) on the Anger Control In scale ($F[1,95]=.342$, $p=.56$, $d=.12$ ns). Hypothesis two was not supported.

3.6 Trait Anger

There were no Trait Anger differences shown between the scores of basketball ($M=16.58$, $SD=5.05$) and tennis ($M=18.28$, $SD=5.55$) athletes ($F[1,95]=2.545$, $p=.114$, $d=.32$ ns), therefore, hypothesis three was supported.

3.7 Angry Reaction

Basketball athletes ($M=7.52$, $SD=2.71$) and tennis athletes ($M=8.34$, $SD=2.50$) did not differ in the Angry Reaction subscale ($F[1,95]=2.441$, $p=.121$, $d=.31$ ns). Hypotheses three was supported.

3.8 Angry Temperament

Tennis ($M=6.72$, $SD=2.63$) and Basketball ($M=5.83$, $SD=2.18$) players did not differ in their Angry Temperament scores ($F[1,95]=3.444$, $p=.067$, $d=.37$ ns), this supports hypothesis three.

3.9 State Anger

Results revealed basketball players ($M = 23.35$, $SD = 10.14$) and tennis players ($M = 18.11$, $SD = 7.34$) had significantly different state anger scores ($F[1,95] = 8.509$, $p = .004$, $d = -.59$). Since basketball players revealed higher state anger than tennis players, hypotheses four was not supported.

3.10 Feeling Angry

Basketball athletes ($M = 9.40$, $SD = 4.51$) and tennis athletes ($M = 6.28$, $SD = 2.58$) yielded a significant difference in feeling angry scores ($F[1,95] = 17.452$, $p < .001$, $d = -.84$). The higher Feeling Angry score by basketball players does not support hypotheses four.

3.11 Feeling Like Expressing Anger Verbally

The main effect for sport and feeling like expressing anger verbally reached significance with ($F[1,95] = 7.037$, $p = .009$, $d = -.53$). Tennis players ($M = 6.06$, $SD = 2.63$) scored lower than basketball players ($M = 7.88$, $SD = 3.98$) on Feeling Like Expressing Anger Verbally, which does not support hypotheses four.

3.12 Feeling Like Expressing Anger Physically

Results revealed no significant difference in the scores of tennis athletes ($M = 5.72$, $SD = 2.38$) and basketball athletes ($M = 6.27$, $SD = 2.87$) on Feeling Like Expressing Anger Physically subscale ($F[1,95] = 1.047$, $p = .309$, $d = -.21$ ns). Hypothesis four was partially supported.

Discussion

The present study was an attempt to broaden the athletic community's awareness of anger and anger management. It also attempted to fill the gap in the current literature. There is a limited amount of research in the area of anger with athletes, specifically tennis athletes.

The presence and expression of anger can negatively alter athletic performance (Alschuler & Alschuler, 1984; Novaco & Robinson, 1984; Tulloch, 1990; Izard, 2002). If a person spends a large amount of energy controlling angry feelings, performance is likely to decrease (Spielberger, 1988). Discovering which athletes experience anger and proactively seeking out the angry athletes that are attempting to control the experience of anger in competition, would in the end improve the performance of these angry prone athletes. This belief led to the following hypotheses and the meaningfulness of this research.

Five main hypotheses were analyzed in this study. These hypotheses looked at State Anger, Trait Anger, Anger Control, and Anger Expression in tennis and basketball athletes. Gender differences in these areas were also observed. The researcher hypothesized that there would be no difference in gender, State anger, and Trait anger. It was also hypothesized that tennis athletes would measure higher in the area of Anger expression and lower in Anger control than basketball athletes.

4.1 Between Subject Effect Size

Many researchers believe that it is important to report some estimation of

meaningfulness in all studies and significant tests (Cohen, 1990; Serlin, 1987, Thomas, Salazar, & Landers, 1991). This study showed a statistical significance in 3 scales, and the results approached significance in two other scales. Since significance was approached, the researcher proceeded to run between subject effect size. The effect size results showed a small to moderate effect for each variable with a few reaching the moderate to high level. This occurrence leads the researcher to believe that there might be significant differences not found in these data, a Type II error. Cohen's effect size convention gives the verbal description of effect size differences as small being >0.20 , medium > 0.50 (but larger than the small category at 0.20), and large > 0.80 (Cohen, 1988).

4.2 Results and Hypotheses

Hypothesis 1 focused on Anger Expression In (suppression of anger or one's tendency to experience anger but hold it in, Kropper & Epperson, 1991), Anger Expression Out (one's tendency to express anger at people or objects in the surrounding environment, Kropper & Epperson, 1991), and Anger Expression Index (regardless of the direction of expression, a generalized index of frequency that anger is expressed and experienced, Spielberger, 1995)) scores. No statistical difference occurred between tennis and basketball athletes in these areas, and the effect size numbers were all in the small range. These results did not support the hypothesis that tennis athletes would have higher anger expression out scores, higher anger expression in scores, and a higher anger expression index scores. The results showed that there were no difference in

scores of basketball athletes and tennis athletes in this area. There was a trend for tennis athletes to have a higher mean score than basketball athletes in Anger Expression Out and Anger Expression Index. The Anger Expression In score was slightly smaller than the basketball athletes. This suggests to the researcher that with an increase in sample size, significance might be reached lending support to hypothesis one. Future research is need to support the findings of this study, which suggest, that basketball (a contact sport) and tennis (non contact sport) athletes do not differ in the expression of anger. This also suggests that the release of anger through physical contact in sport does not affect the levels anger expression in, anger expression out, or both anger expressions.

Anger Control In (individual frequency differences in a persons attempts to control inward expressions of anger, Spielberger, 1999) and Anger Control Out (individual frequency differences in a persons attempts to control outward expression of anger, Spielberger, 1995) were used to determine support for hypothesis 2. Anger Control Out showed no statistical significance with any of the dependent variables, and the effect size was small to moderate at ($d = -.38$). The dependent variable, Anger Control In, also showed no statistical significance between sports, and it yielded a small effect size value ($d = .12$). With no significant difference in tennis athletes and basketball athletes shown, hypothesis two was not supported. In the case of hypothesis two and Anger Control, basketball athletes did have a Mean score higher than that of tennis athletes. This score was not statistically significant, but once again, the small to moderate

effect size of Anger Control Out ($d = -.38$) leads this researcher believes that with an increase in the sample size significance might be found. This could also suggest that these athletes do not differ from basketball athletes in inwardly controlling their anger, but when it comes to outwardly controlling their anger; tennis athletes more frequently control outward expressions of anger. Future research with more tennis athletes would lend support to this thought or lend support to the belief that tennis athletes and basketball athletes do not differ in the frequency in which they control both inward and outward anger expression.

Hypothesis 3 observed the Trait anger scale (assesses individual differences in the tendency to feel annoyed or frustrated by a large range of situations and responding with increased S-Anger, Spielberger, 1995) and the two subscales, Angry Reaction (differences in one's nature to feel angry when unfairly treated or criticized, Spielberger, 1995) and Angry Temperament (general disposition differences in individuals to experience anger with little or no specific irritation, Spielberger, 1995). The results for the Trait Anger scale yielded no statistical significance with a small to moderate effect size ($d = .32$). The dependent variable, Angry Reaction showed no statistical significance with any of the independent variables. The effect Size for Angry Reaction was small to moderate, ($d = .31$). Angry Temperament also yielded no values of statistically significant differences in basketball and tennis athletes, and it had a medium effect size with a value of ($d = .37$). However, Angry Temperament approached significance at ($p = .067$). This approach to significance suggests that the tennis

athletes in this study tend to experience anger with little or no specific irritation (Spielberger, 1995). Trait Anger and the two subscales, Angry Reaction and Angry Temperament, showed no statistical significance. Tennis athletes had a non-significant higher mean score than that of the basketball athletes in these scales. The non-significant differences could be linked to the sample size limitation or the fact that these athletes really do not differ in Trait anger. Results support hypothesis three that tennis athletes and basketball athletes would not differ in the presence of Trait Anger. This research follows the previous study of Green et al. (1993) when no significant difference was shown between intramural football athletes and varsity football athletes.

Hypothesis 4 examined the State Anger scale (assess individual difference in anger proneness as a personality trait, Kropper & Epperson, 1991) and the three subscales, Feeling Angry, Feeling Like Expressing Anger Verbally, and Feeling Like Expressing Anger Physically. With the dependent variable State Anger and the independent variable sport, significance occurred ($p = .004$). The between subject effect size yielded a medium to high level ($d = -.59$). Feeling Angry and sport also yielded significance with ($p < .001$) with a high between subject effect size of ($d = -.84$). Sport and Feeling Like Expressing Anger Verbally reached significance with ($p = .009$). The effect size was medium ($d = -.53$). Mean scores for basketball athletes were higher than the tennis athletes in all three of these areas. No significant difference was reached between sports and the dependent variable, Feeling Like Expressing Anger Physically. The effect size for

this variable was small yielding ($d = -.21$). Three of the four scale and sub-scales showed statistical difference in State Anger. However, the other sub-scale (Feeling like Expressing Anger Physically) yielded a non-significant difference ($p = .309$) between the athletes. If basketball players are angrier than tennis players, they feel angry, and they feel like verbally expressing this anger, then why don't they want to physically express this anger? This difference could suggest that these athletes are satisfied with the release of tension they are afforded in their sport or that angrier personalities choose to participate in certain sports?

Since significance was reached with three of the four dependent variables, Hypothesis 4 is therefore not supported. In fact, the opposite occurred. The area of State Trait anger was an interesting aspect of this study. State Anger between sports, happened to be the only area where statistical significance was reached. All athletes were sampled under the same conditions, yet State Anger results suggested that basketball athletes were significantly angrier at the time that they participated in this study. These results might be explained by the changing of importance in the time of the athletic season or a non-related environmental aspect upsetting the individual basketball athletes or basketball teams before participating in the study. However, more research focusing in this aspect would be beneficial to further explain these differences.

The fifth hypothesis evaluates Gender differences. All the main effects for gender were non significant. Results of this study supported hypothesis five by

showing no difference in scores by gender. Previous research suggests that gender does not affect anger (Bartz, Blume, & Rose, 1996; Ewart & Kolodner, 1994; Kopper, 1993; Kopper and Epperson, 1996; Spielberg, 1988). Overall, this study lends support to the belief that there are no significant gender differences in the area of Anger and Gender. Maybe it is time to use this common belief and explore why male basketball athletes express their anger on the court more than the female athletes or why there seem to be more bench clearings at a baseball game than at a softball game.

One interesting trend in the results was that tennis athletes had mean scores higher than basketball athletes in the areas of Anger Expression Out ($d = .30$), Angry Reaction ($d = .31$), Trait Anger ($d = .32$), Angry Temperament ($d = .37$), and Feeling like Expressing Anger Physically ($d = .21$). These areas relate to with ones tendency to feel angry by many different situations, which may or may not have any specific irritation and the desire to physically express this anger on outward objects or people. Yet basketball athletes' State Anger ($d = -.59$), Feeling Angry ($d = -.84$), Feeling like Expressing Anger Verbally ($d = -.53$), and Anger Control Out ($d = -.38$) mean scores were higher than the tennis athletes. This suggests that the basketball athletes were generally angrier, yet their method of expression was verbally, inward, or controlled. Anger Expression Index, Anger Expression In, Anger Control In, yielded virtually no differences. With this trend, this researcher believes that there may be real differences in physical expression of anger in tennis athletes and basketball athletes, and the

emotional catharsis gained by physical rough play aids basketball players (contact sport) in controlling their angry personalities. More research in this area is needed to help explain these possible differences.

4.3 Limitations

The lack of statistical significance in this study could be linked to many things. Instrumentation and sample size may account for some of the lack of power and the non-significant results. Size is the first concern; this study had a medium number of participants for a quantitative study, and this research could have benefited greatly by an increase in this number. Behind sample size, a major concern is the team sport athlete and the individual sport athlete variable. This variable might be one worth controlling or looking at in more depth. Team sport athletes may possess traits that would affect the outcome of a study focusing on differences between them and individual sport athletes. With the differences suggested by the moderate range effect sizes, a Type-II error could have occurred by not showing a difference that is actually there, and future research in this area is worth considering.

Another problem could be linked to the measure used. More self-report measures to assist (i.e. a personality assessment) the STAXI-2 (Spielberger, 1999) might have been beneficial to this research. Also, this study may have improved by choosing another psychological measure or a different research method. Observing each athlete in competition and recording outburst and outcome along with the STAXI-2 (Spielberger, 1999) and other measurements

would be another way to research anger in sport. Using both quantitative and qualitative methods could have allowed the researcher to dive into the athlete's anger at a more thorough depth.

4.4 Future Research and Conclusions

There is no question that mental skills training and research is important to athletes (Gould, 1999), and that tennis athletes would benefit through more research in the area of anger and anger management. Additional research using this subject matter could enhance our knowledge and assist the further development of the entire athletic community.

With anger and sport, maybe the specific sport differences are not a concern, suggesting that anger is the same across the entire sport community or similar within individual or team sport divisions. Athletes in general may be experiencing, expressing, and controlling heightened levels of anger due to the frustrations and intensity required or encountered in competition. In this study, maybe the non-significant differences in anger between tennis and basketball players is an accurate finding. For this idea to be forwarded, future research in the area of anger and sport should focus on sports other than basketball and tennis to ensure that no difference in anger and sport really exists.

Research investigating whether certain sports are more likely to attract athletes that are prone to being angry could further our understanding of anger in athletics. This study, suggests that basketball athletes (a contact sport where expression is accepted) were angrier at the time of the questionnaire than tennis

athletes, yet their desire to express this anger was less than the tennis athletes. Does the contact they have in competition satisfy their need to express the anger that they are feeling? Future studies in this area are necessary to support this idea. A multi-sport exploration of anger, anger differences, anger experience, and anger control comparing the athletic population against each other would lead to better specific studies. For example, a study using football, basketball, hockey, soccer, baseball, softball, volleyball, tennis, wrestling, and golf athletes and quantitative instruments dealing with anger and personalities could show trends and differences within the athletic community. This broad research would lead to better research hypotheses and to more specific studies. These specific studies could then help narrow down origins, causes, situations, and irritations of the angry athlete. A better understanding would aid in the preparation of coaches and sport psychology specialists on how to help the athletes.

The specific hypotheses proposed in this research with anger and tennis were probably a bit premature. Outbursts of anger by tennis athletes are more pronounced to the spectator leading researchers to possibly support anecdotal examples not to be supported in experimental design research. It may be just as plausible to hypothesize that sport where anger can be vented as a part of normal play attracts athletes that are prone to experience anger outbursts, and that this attraction stems from the very fact that normal play allows acceptable anger that would not be appropriate in other sports. Especially in light of this study's findings supporting that the basketball athletes are angrier than tennis

athletes; contact and sports that allow physical rough play may prove to be the significantly greater place to find anger control out, anger expression out, anger expression index, and state anger. Specific to tennis, basketball, and this study, foundational research using non-directional or null hypothesis questions will need to be asked until empirical finding points us in one direction or the other.

However, staying with the idea that physical contact does make a difference; future researchers could use a mixed method research design, combining both qualitative and quantitative measures with a respectable number of participants. Observing the athletes in competition enhances our knowledge of how these athletes respond to different situations or irritations and how they react under the pressure of competition. This type of knowledge cannot be gained by quantitative research or self-reporting instruments. It would also be beneficial to control for the team and individual sport differences by researching team sports against other team sports (i.e. basketball and volleyball) or an individual sport against another individual sport (i.e. tennis and wrestling). By controlling this factor, any individual or team sport differences would not affect or taint the data.

Future research could also increase the number of sports evaluated (tennis, wrestling, gymnastics; fencing, basketball, volleyball, soccer, and baseball). There may be differences within contact sports due to the nature of play. For example, football is extremely different than basketball, and these pronounced differences could significantly change the types of expression and

experiences of anger on and off the field of competition. Basketball athletes may feel prone to throw an elbow or mouth off at an official when angry leaving the situation hyped up and fuming, but football athletes may give or take that major hit and walk away excited but with an eerie calmness. Equally, non-contact sports may yield differences. Anecdotal evidence support few if any anger problems in golf and substantial problems in tennis, why is this? What causes the tennis athlete to scream or throw the racquet after a poor shot when it is almost unheard of for a golfer to throw his golf club? These questions are worthy of further exploration, especially since many professionals are developing sport-specific mental skills interventions for anger management. We can deny expression, and individual difference in expression suggests that the response tendencies of individuals differ (Gross & John, 1997). The more we can learn about specific differences in the experience and expression of anger the better we can help the athlete.

General training on how to deal with anger outside and on the playing field is essential. In tennis, one must be so engrossed by the present that the previous game, set, or point has no bearing (Striegel, 1993, p. 80). Limiting uncontrollable irritations during competition and dealing with controllable irritations before the contest will help limit the presence of anger and negative affects of this experienced anger during competition. Previous research suggests that behavioral interventions dealing with anger in sport can be effective (Jones, 1993; Daw & Burton, 1994; Allen, 1998). All athletes can benefit from general

anger training, but future research needs to help differentiate which athletes need more specific interventions and emotional training in anger.

In conclusion, specific to this study, although statistical significance was not reached in many areas, this researcher believes that there is merit to further research into this study's hypotheses. The lack of statistical significance could be linked to many different reasons. These reasons range from a flawed methodology to a problem with the sample size. The small to moderate effect sizes in several areas suggest that there might be something occurring with the data. As for the belief that gender does not affect anger, this study lends support to those previous findings. Further research in anger control, anger expression, and the presence of anger in sport would greatly benefit the athletic community in general. Whether it is found that there is no difference in sport and how it relates to the emotion anger, or it is shown that some sports encourage the experience of anger; this is something that athletes, coaches, and sport psychologists alike could all use to enhance athletic performance.

References

- Alexander, F. (1939). Emotional factors in essential hypertension. Psychosomatic Medicine, 1, 173-179.
- Allen, K.D. (1998). The use of an enhanced simplified habit-reversal procedure to reduce disruptive outburst during athletic performance. Journal of Applied Behavior Analysis, 31, 489-492.
- Alschuler, C.F., & Alschuler, A.S. (1984). Developing health responses to anger: The counselor's role. Journal of Counseling and Development, 63, 26-29.
- Averill, J.R. (1977, November). Anger. Paper presented at the Nebraska.
- Ayman, D. (1933). The personality type of patients with arteriolar essential hypertension. American Journal of Medical Science, 186, 213-223.
- Bandura, A. (1977b). Social learning theory. Englewood Cliffs, NJ: Prentice Hall.
- Bartz, A.E., Blume, N.E., & Rose, J. (1996). Gender differences in self-report measures of anger: The role of social desirability and negative affect. Journal of Social Behavior and Personality, 11, 5, 241-253.
- Berger, B.B. (1977). Effect of uncertainty, physical harm, and competition upon selected characteristics of athletes. International Journal of Sport Psychology, 8, 3, 198-209.
- Berkowitz, L. (1962). Aggression: A social psychological analysis. New York: McGraw-Hill.
- Berkowitz, L. (1964). Aggressive cues in aggressive behavior and hostility catharsis. Psychological Review, 71, 104-122.
- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformation. Psychological Bulletin, 106, 59-73.
- Biggio, M.K., Supplee, K., & Curtis, N. (1981). Reliability and validity of four anger scales. Journal of Personality and Assessment, 45, 639-648.
- Buss, A.H. (1961). The psychology of aggression. New York: Wiley and Sons.
- Cannon, W.B. (1914). The interrelations of emotions as suggested by recent physiological research. American Journal of Psychology, 25, 252-282.

- Catanzaro, S.J., & Mearns, J. (1990). Measuring generalized expectations for negative mood regulation: Initial scale development and implications. Journal of Personality Assessment, *54*, 546-563.
- Cohen, J. (1988). Statistical power analysis for the behavioral sciences. (2nd ed.). New York: Academic Press.
- Cohen, J. (1990). Things I have learned so far. The American Psychologist, *45*, 12, 1304-1309.
- Cox, R.H. (1985). Sport psychology: Concepts and applications. Dubuque, Iowa: Brown.
- Daw, J. & Burton, D. (1994). Evaluation of comprehensive psychological skills training program for collegiate tennis players. The Sport Psychologist, *8*, 37-57.
- Deffenbacher, J.L., Oetting, E.R., Thwaites, G.A., Lynch, R.S., Baker, D.A., Stark, R.S., Thacker, S., & Eiswerth-Cox, L. (1996). State-Trait anger theory and the utility of the Trait Anger Scale. Journal of Counseling Psychology, *43*, 2, 131-148.
- Diamond, E.L. (1982). The role of anger and hostility in essential hypertension and coronary heart disease. Psychological Bulletin, *92*. 410-433.
- Dollard, J., Doob, L., Miller, N., Mowrer, O., & Sears, R. (1939). Frustration and aggression. New Haven, CT: Yale University Press.
- Ekman, P., Friesen, W.V., & Ellsworth, P.C. (1982). What are the similarities and differences in facial behavior across cultures? In P. Ekman (Ed.), Emotion in the human face (2nd ed.; pp. 128-143).
- Everson, S.A, Goldberg, D.E., Kaplan, G.A., Julkunen, J., & Salonen, J.T. (1998). Anger Expression and Incident Hypertension. Psychosomatic Medicine, *60*, 6. 730-735.
- Ewart, C.K., & Kolodner, K.B. (1994). Negative affect, gender, and expression styles predict elevated ambulatory blood pressure in adolescents. Journal of Personality and Social Psychology, *66*, 596-605.
- Fawzy, F.I., Fawzy, N.W., Hyun, C.S., Elashoff, R., Guthrie, D., Fahey, J.L., & Morton, D.L. (1993). Malignant melanoma: Effects of an early structured psychiatric intervention, coping, and affective state on recurrence and survival 6 years later. Archives of General Psychiatry, *50*. 681-689.

- Feshbach, S. (1964). The function of aggression and regulation of aggressive Drive. Psychological Review, 71, 257-272.
- Freud, S. (1959). Why war? In J. Strachey (Ed.), Collected papers (Vol. 5). London: Hogarth. (Original work published 1933).
- Greene, A.F., Sears, S.F., & Clark, J.E. (1993). Anger and sports participation. Psychological Reports, 72, 523-529.
- Greenglas, E.R. (1989). Construct validity and sex differences in Cook-Medly Hostility. Personality and Individual Differences, 10, 209-218.
- Greer, S., & Morris, T. (1975). Psychological attributes of women who develop breast cancer: A controlled study. Journal of Psychosomatic Research, 19, 147-153.
- Gross, J. (1989). Emotional expression in cancer onset and progression. Social Science and Medicine, 28. 1239-1248.
- Goffman, E. (1963). Behavior in public places. New York: Free Press.
- Gould, D., Weiss, M., & Weinberg, R.S. (1981). Psychological characteristics of successful and unsuccessful Big Ten wrestlers. Journal of Sport Psychology, 3, 69-81.
- Gould, D., Medbery, R., Damarjian, N., & Lauer, L. (1999). A survey of mental skills training knowledge, opinions, and practices of junior tennis coaches. Journal of Applied Sport Psychology, 11, 28-50.
- Hawkridge, R. (1996, October). Profile: Graf. Panorama, 51-53.
- Helmig, L., Houston, B.K., Vavak, C.R., & Mullin, J. (1991). Hostility related variables, self-schemata and CHD. Presented at the meetings of the Society for Behavioral Medicine, Washington, D.C.
- Huang, D.B., Cherek, D.R., & Lane, S.D. (1999). Laboratory measurement of aggression in high school age athletes: Provocation in a non-sporting context. Psychological Reports, 85, 1251-1262.
- Isberg, L. (2000). Anger, aggressive behavior, and athletic performance. In Y.L. Hanin (Ed.), Emotions in Sport. Champaign, IL: Human Kinetics. pp. 113-133.
- Izard, C.E. (1977). Human Emotions. New York: Plenum Press.

- Izard, C.E. (2002). Translating emotion theory and research into preventive Interventions. Psychological Bulletin, *128*, 5. 796-824.
- Johnson, E.H. & Browman, C.L. (1987). The relationship of anger expression to health problems among Black Americans in a national survey. Journal of Behavioral Medicine, *10*, 103-116.
- Jones, G. (1993). The role of performance profiling in cognitive behavioral interventions in sport. The Sport Psychologist, *7*, 160-170.
- Julius, M., Harburg, E., Cottingham, E., & Johnson, E. (1986). Anger coping types, blood pressure and all-cause mortality: A follow-up in Tecumseh, Michigan (1971-1983). American Journal of Epidemiology, *124*, 220-233.
- Kaplan, R. (1975). The cathartic value of self-expression: Testing catharsis, dissonance, and interference explanations. Journal of Social Psychology, *97*, 195-208.
- Kassinove, H. & Sukhodolsky, D.G. (1995). Anger disorders: Basic science and practice issues. In H. Kassinove (Eds.), Anger disorders; definition, diagnosis, and treatment. Washington, D.C.: Taylor & Francis.
- Kaufman, H. (1970). Aggression and altruism. New York: Holt.
- Kopper, B.A. (1993). Role of gender, sex role identity, and Type A behavior in anger expression and mental health functioning. Journal of Counseling Psychology, *40*, 232-237.
- Kopper, B.A., & Epperson, D.L. (1991). Women and anger: Sex and sex role comparisons in the expression of anger. Psychology of Women Quarterly, *15*, 7-14.
- Layman, E. (1970). Reaction: Aggression in relation to play and sports. In G.S. Kenyon (Ed.), Contemporary Psychology of Sport: Proceedings of the Second International Congress of Sport Psychology. Chicago: Athletic Institute.
- Lazarus, R.S., & Folkman, S. (1984). Stress appraisal and coping. New York: Springer.
- Lerner, H. (1985). The dance of anger. New York: Harper & Row.

- Lopez, F.G, & Thurman, C.W. (1986). A cognitive-behavioral investigation of anger among college students. Cognitive Therapy and Research, 10, 245-256.
- Mahoney, M.J., & Avenor, M. (1977). Psychology of the elite athlete: An exploratory study. Cognitive Therapy and Research, 1, 135-141.
- Mahoney, M.J., Gabriel, T.J., & Perkins, T.S. (1987). Psychological skills and exceptional athletic performance. The Sport Psychologist, 1, 181-199.
- Malloy, Thomas E., Albright, Linda, Kenny, David A., Agatstein, Fredric, Winquist, Lynn. (1997). Interpersonal perception and metaperception in nonoverlapping social groups. Journal of Personality and Social Psychology, 72, 2. 390-398.
- Mathews, K.A., Glass, D.C., Rosenman, R.H., & Bortner, R.W. (1977). Competitive drive, Pattern A, and coronary heart disease: A further analysis of some data from the Western Collaborative Group Study. Journal of Chronic Diseases, 30, 489-498.
- McCaffrey, N. & Orlick, T. (1989). Mental factors related to excellence among top professional golfers. International Journal of Sport Psychology, 20, 256-278.
- McDougall, W., (1908). An introduction to social psychology. London: Methuen.
- Mendes de Leon, C.F. (1992). Anger and impatience/irritability in patients of low socioeconomic status with acute coronary heart disease. Journal of Behavioral Medicine, 15, 273-284.
- Navaco, R.W. (1979). The cognitive regulation of anger and stress. In P.C. Kendall & S.D. Hollon (Eds.), Cognitive-behavioral interventions: Theory, research, and procedures. (pp. 240-285). New York: Academic Press.
- Navaco, R.W., & Robinson, G.L. (1984). Anger and aggression among military personnel. In R.M. Kaplan, V.J. Konecin, & R.W. Novaco (Eds.), Aggression in children and youth (pp. 209-232). Boston: Martinus Nijhoff Publishers.
- Ostrow, A.C. (1974). The aggressive tendencies of male intercollegiate tennis team players as measured by selected psychological tests. The New Zealand Journal of Health, Physical Education and Recreation, 6, 2, 19-21.

- Pennebaker, J. (1990). *Opening up: The healing powers of confiding in others*. New York: Morrow.
- Rapaport, D. (1967). The collected papers of David Rapaport. New York: Basic Books.
- Rotter, J.B. (1954). *Social learning and clinical psychology*. Englewood Cliffs, NJ: Prentice-Hall.
- Rotter, J.B., Chance, J.E., & Phares, E.J. (Eds.). (1972). *Applications of a social learning theory of personality*. New York: Holt, Rinehart & Winston.
- Rotter, J.B. (1982). *The development and application of social learning theory: Selected papers*. New York: Paeger.
- Scanlan, T., Stein, G., & Ravizza, K. (1989). An in-depth study of former elite figure skaters: II. Sources of enjoyment. Journal of Sport and Exercise Psychology, *11*, 65-83.
- Scanlan, T., Stein, G., & Ravizza, K. (1991). An in-depth study of former elite figure skaters: III. Sources of stress. Journal of Sport and Exercise Psychology, *13*, 103-120.
- Serlin, R.C. (1987). Hypothesis testing, theory building, & the philosophy of science. Journal of Counseling Psychology, *34*, 365-371.
- Siegmán, A.W. (1989). The role of hostility, neuroticism, and speech style in Coronary artery disease. In A.W. Siegmán & T.M. Dembroski (Eds.), In search of coronary-prone behavior: Beyond Type A. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Siegmán, A.W., Townsend, S., & Blumenthal, R. (1996). Anger-out, Anger-in, hostility, and CHD. Paper presented at the 4th International Congress of Behavioral Medicine. Washington, DC.
- Siegmán, A.W. & Snow, S.C. (1997). The outward expression of anger, the Inward experience of anger and CVR: The role of vocal expression. Journal of Behavioral Medicine, *20*, 1. 29-45.
- Smith, M.D. (1988). Interpersonal sources of violence in hockey: The influence of parents, coaches, and teammates. In F.L. Smoll, R.A. Magill, & M.J. Ash (Eds.), Children in Sport (3rd ed., pp. 301-313). Champaign, IL: Human Kinetics.

- Spiegel, D., Bloom, J.R., Kraemer, .C., Gottheil, E. (1989). Effect of psychosocial treatment on survival of patients with metastatic breast cancer. Lancet, 2. 888-891.
- Spielberger, C.D., Jacobs, G., Russell, S., & Crane, R. (1983). Assessment of anger: The State-Trait Anger Scale. In J.N. Butcher & C.D. Spielberger (Eds.), Advances in personality assessment (Vol. 2). Hillside, NJ: LEA.
- Spielberger, C.D., Johnson, E.H., Russell, S.F., Crane, R.J., Jacobs, G.A., & Worden, T.J. (1985) The experience and expression of anger: construction and validation of an anger expression scale. In M.A. Chesney & R.H. Rosenman (Eds.), Anger and hostility in cardiovascular and behavioral disorders. New York: Hemisphere/McGraw-Hill.
- Spielberger, C.D. (1988). State-Trait Anger Expression Inventory. Orlando, FL: Psychological Assessment Resources.
- Spielberger, C.D., Krasner, S.S., & Solomon, E.P. (1988). The experience, expression, and control of anger. In M.P. Janisse (Ed.), Health psychology: Individual differences and stress (pp. 89-108). New York: Springer Verlag.
- Spielberger, C.D., Reheiser, E.C., & Sydeman, S.J. (1995). Measuring the experience, expression, and control of anger. In H. Kassinove (Ed.), Anger disorders: Definition, diagnosis, and treatment (pp. 49-67) Washington, DC: Taylor & Francis.
- Spielberger, C.D. (1999). State-Trait Anger Expression Inventory II. Orlando, FL: Psychological Assessment Resources.
- Stearns, F.R. (1972). Anger: Psychology, physiology, pathology. Springfield, IL: Charles C. Thomas.
- Striegel, D.A. (1992). Qualitative methods: A legitimate alternative. Contemporary Thought on Performance Enhancement, 1, 41-48.
- Striegel, D.A. (1993). Anger in tennis: Part I, the developmental years, the expression of anger, and the causes of anger. Contemporary Thought on Performance Enhancement, 2, 54-81.
- Stuart, G.W., & Sundeen, S.J. (1987). Principles and practice of psychiatric nursing (3rd ed). St. Louis: C.V. Mosley.
- Sullivan, H.S. (1953). The interpersonal theory of psychiatry. New York: W.W. Norton.

- Tavris, C. (1984). On the wisdom of counting to ten: Personal and social dangers of anger expression. In P. Shaver (Ed.), Review of personality and social psychology (pp. 170-191). Beverly Hills, CA: Sage.
- Tavris, C. (1989). Anger: The misunderstood emotion. (2nd ed.). New York: Simon & Schuster.
- Thirer, J. (1993). Aggression. In R.N. Singer, M. Murphey, L.K. Tennant (Eds.), Handbook of research on sport psychology (pp. 365-378). New York: Macmillan.
- Thomas, J.R., Salazar, W., & Landars, D.M. (1991). What is missing in $p < .05$? Effect size. Research Quarterly for Exercise and Sport, 62, 344-348.
- Thomas, S.P. (1989). Gender differences in anger expression: Health implications. Research in Nursing and Health, 12, 389-398.
- Thomas, S.P. (1990). Theoretical and empirical perspectives on anger. Issues in Mental Health Nursing, 11, 203-216.
- Thomas, S.P., & Williams, R.L. (1990, April). Gender differences in modes of anger expression: Health implications. Paper presented at the 11th Annual meeting of the Society of Behavioral Medicine, Chicago, IL.
- Tulloch, R. (1990). Cognitive perspectives on anger and anger control training. In W. Dryden & M. Scott (Eds.), An introduction to cognitive-behavioral therapy: Theory and applications (pp. 79-98). Loughton, Essex: Gale Centre Publications.
- VanRaalte, J.L., Cornelus, A.E., Brewer, B.W., & Hatten, S.J. (2000). The antecedents and consequences of self-talk in competitive tennis. Journal of Sport & Exercise Psychology, 22, 345-356.
- Wertsch, J.V. (1985). Culture Communication, and Cognition: Vygotskion Perspectives. New York: Cambridge University Press.

Appendix A

STUDENT ATHLETE INFORMED CONSENT STATEMENT

CONSENT FORM AND SUBJECT INFORMATION

INVESTIGATOR: Melanie Swain, B.S. Principal Investigator Health and Human Performance 109 McGill Hall The University of Montana Missoula, MT 59812 770-957-3284 mswain78@hotmail.com	Lewis A. Curry, Ph.D. Supervising Investigator Health and Human Performance 210 McGill Hall The University of Montana Missoula, MT 59812 406-243-5242 curry58@selway.umt.edu
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Special Instructions:

Both the Department of Health and Human Performance and the University support the practice of protection of human subjects participating in research. Provided below is information to aid you in your decision to participate in the present study.

Additional information can be provided at anytime before, during, or after completion by contacting the investigator by phone, mail, or email. You will also be given a copy of this consent form.

If there are any words in this consent that are new to you or are not clear in any way, please ask the person who gave you this form to explain them to you.

Purpose:

You are being asked to take part in a research study comparing anger in student athletes while performing athletics. You were chosen because of your involvement with NCAA Division 1 Intercollegiate Athletics in the northwest.

Procedure:

For this study you will be asked to complete a standardized survey and demographic information sheet. Completion of this survey takes less than 30 minutes.

Risks/Discomforts:

There are no foreseen risks or discomforts to the participant.

Benefits:

There are no direct benefits to you, however by participating in this survey you will help us to assess student-athletes and anger that they experience.

Confidentiality:

Your name will not be associated in any way with the research findings of this study. The results of this survey will only be used as a summary. There will be no identification of individual student athletes.

Compensation for Injury:

Although we do not foresee any risk in taking part in this study, the following liability statement is required in all University of Montana consent forms. "In the event that you are injured as a result of this research you should individually seek appropriate medical treatment. If the injury is caused by the negligence of the University or any of its employees, you may be entitled to reimbursement or compensation pursuant to the Comprehensive State Insurance Plan established by the Department of Administration under the authority of M.C.A., Title2, Chapter 9. In the event of a claim for such injury, further information may be obtained from the University's Claims representative or University Legal Counsel."

Voluntary Participation/Withdrawal:

Your participation is solicited, but is strictly voluntary. Even if you agree to participate in this study, you are free to withdraw at any time without penalty.

Questions:

If you have any questions about the research now or during the study, feel free to contact: Melanie Swain at 770-957-3284 or Dr. Lew Curry at 406-243-5242.

Subjects Statement of Consent:

I have read the above description of this research study. I have been informed of the risks and benefits involved, and all my questions have been answered to my satisfaction. Furthermore, I have been assured that any future questions I may have will be answered by a member of the research team. I voluntarily agree to take part in this study. I understand I will receive a copy of this consent form.

Name (Please Print)

Signature of Subject

Date
Date Approved by UM IRB: 8/24/01
Approval Expires on 5/28/02

IRB Chair

Appendix B



Item Booklet (Form HS)

Instructions

In addition to this Item Booklet you should have a STAXI-2 Rating Sheet. Before beginning, enter your name, gender, and age; today's date; years of education completed, your marital status, and your occupation in the spaces provided at the top of the STAXI-2 Rating Sheet.

This booklet is divided into three Parts. Each Part contains a number of statements that people use to describe their feelings and behavior. Please note that each Part has *different* directions. Carefully read the directions for each Part before recording your responses on the Rating Sheet.

There are no right or wrong answers. In responding to each statement, give the answer that describes you best. **DO NOT ERASE!** If you need to change your answer, mark an "X" through the incorrect response and then fill in the correct one.

Examples				
1.	①	<input checked="" type="radio"/>	●	④
2.	①	●	③	④

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Part 1 Directions

A number of statements that people use to describe themselves are given below. Read each statement and then blacken the appropriate circle on the Rating Sheet to indicate how you feel *right now*. There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer that *best* describes your *present feelings*.

Fill in ① for *Not at all* Fill in ② for *Somewhat* Fill in ③ for *Moderately so* Fill in ④ for *Very much so*

How I Feel Right Now

1. I am furious
2. I feel irritated
3. I feel angry
4. I feel like yelling at somebody
5. I feel like breaking things
6. I am mad
7. I feel like banging on the table
8. I feel like hitting someone
9. I feel like swearing
10. I feel annoyed
11. I feel like kicking somebody
12. I feel like cursing out loud
13. I feel like screaming
14. I feel like pounding somebody
15. I feel like shouting out loud

Part 2 Directions

Read each of the following statements that people have used to describe themselves, and then blacken the appropriate circle 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 that *best* describes how you *generally* feel or react.

Fill in ① for *Almost never* Fill in ② for *Sometimes* Fill in ③ for *Often* Fill in ④ for *Almost always*

How I Generally Feel

16. I am quick tempered
17. I have a fiery temper
18. I am a hotheaded person
19. I get angry when I'm slowed down by others' mistakes
20. I feel annoyed when I am not given recognition for doing good work
21. I fly off the handle
22. When I get mad, I say nasty things
23. It makes me furious when I am criticized in front of others
24. When I get frustrated, I feel like hitting someone
25. I feel infuriated when I do a good job and get a poor evaluation

Part 3 Directions

Everyone feels angry or furious from time to time, but people differ in the ways that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel *angry* or *furious*. Read each statement and then blacken the appropriate circle 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.

Fill in ① for *Almost never*.

Fill in ② for *Sometimes*.

Fill in ③ for *Often*.

Fill in ④ for *Almost always*.

How I Generally React or Behave When Angry or Furious...

26. I control my temper
27. I express my anger
28. I take a deep breath and relax
29. I keep things in
30. I am patient with others
31. If someone annoys me, I'm apt to tell him or her how I feel
32. I try to calm myself as soon as possible
33. I pout or sulk
34. I control my urge to express my angry feelings
35. I lose my temper
36. I try to simmer down
37. I withdraw from people
38. I keep my cool
39. I make sarcastic remarks to others
40. I try to soothe my angry feelings
41. I boil inside, but I don't show it
42. I control my behavior
43. I do things like slam doors
44. I endeavor to become calm again
45. I tend to harbor grudges that I don't tell anyone about
46. I can stop myself from losing my temper
47. I argue with others
48. I reduce my anger as soon as possible
49. I am secretly quite critical of others
50. I try to be tolerant and understanding
51. I strike out at whatever infuriates me
52. I do something relaxing to calm down
53. I am angrier than I am willing to admit
54. I control my angry feelings
55. I say nasty things
56. I try to relax
57. I'm irritated a great deal more than people are aware of

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STAXI-2 Rating Sheet (Form HS)

Name/ID No. _____ Gender: F M Age _____ Today's Date ____/____/____

Education _____ Marital Status _____ Occupation _____

PART 1

① = Not at all ② = Somewhat ③ = Moderately so ④ = Very much so

How I Feel Right Now				
1.	①	②	③	④
2.	①	②	③	④
3.	①	②	③	④
4.	①	②	③	④
5.	①	②	③	④
6.	①	②	③	④
7.	①	②	③	④
8.	①	②	③	④
9.	①	②	③	④
10.	①	②	③	④
11.	①	②	③	④
12.	①	②	③	④
13.	①	②	③	④
14.	①	②	③	④
15.	①	②	③	④

PART 3

① = Almost never ② = Sometimes ③ = Often ④ = Almost always

How I Generally React When Angry or Furious				
26.	①	②	③	④
27.	①	②	③	④
28.	①	②	③	④
29.	①	②	③	④
30.	①	②	③	④
31.	①	②	③	④
32.	①	②	③	④
33.	①	②	③	④
34.	①	②	③	④
35.	①	②	③	④
36.	①	②	③	④
37.	①	②	③	④
38.	①	②	③	④
39.	①	②	③	④
40.	①	②	③	④
41.	①	②	③	④
42.	①	②	③	④
43.	①	②	③	④
44.	①	②	③	④
45.	①	②	③	④
46.	①	②	③	④
47.	①	②	③	④
48.	①	②	③	④
49.	①	②	③	④
50.	①	②	③	④
51.	①	②	③	④
52.	①	②	③	④
53.	①	②	③	④
54.	①	②	③	④
55.	①	②	③	④
56.	①	②	③	④
57.	①	②	③	④

PART 2

① = Almost never ② = Sometimes ③ = Often ④ = Almost always

How I Generally Feel				
16.	①	②	③	④
17.	①	②	③	④
18.	①	②	③	④
19.	①	②	③	④
20.	①	②	③	④
21.	①	②	③	④
22.	①	②	③	④
23.	①	②	③	④
24.	①	②	③	④
25.	①	②	③	④

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Appendix C

Cognitive Model of Anger Arousal (Novaco, 1979)

