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Philadelphia College of Osteopathic Medicine

Department of Psychology

MEASURING ANGER IN A PRISON POPULATION USING THE ANGER DISORDERS  
SCALE AND THE PERSONALITY ASSESSMENT INVENTORY

By Michael R. Wydo

Submitted in Partial Fulfillment  
of the Requirements for the Degree of

Doctor of Psychology

August 2003

**PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE**

**DEPARTMENT OF PSYCHOLOGY**

**Dissertation Approval**

**This is to certify that the thesis presented to us by Michael R. Wydo on the 1st day of August, 2003, in partial fulfillment of the requirements for the degree of Doctor of Psychology, has been examined and is acceptable in both scholarship and literary quality.**

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### Abstract

In comparison with other emotions, such as anxiety and depression, the research literature on anger-related problems is lacking. Anger, and anger-related behaviors pose a critical problem to clinicians and researchers. The inability to identify and treat individuals with a propensity toward aggressive behavior is related to the insufficient empirical evidence defining anger as a diagnosable disorder. An ongoing argument has existed as to the causes and related concepts of anger and aggression. The present study validates a new assessment measure for anger and explores the correlation between prisoners' offense records and specific type of anger expression. The Anger Disorder Scale (ADS) was used as it is based on criteria developed for the proposal of specific anger disorders. Scores on the ADS were correlated with scores on the Personality Assessment Inventory (PAI) to determine a correlation between anger and specific measures of psychopathology in a population of inmates at a state correctional institution. Scores on the ADS were also correlated with inmate's classification records to provide correctional psychologists with profiles of anger and specific treatment recommendations for each anger profile. A positive correlation was found between the ADS and the PAI aggression scales. No correlations were found between ADS scores and classification records. Factor analysis supports the construct validity of the ADS subscales.

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## Chapter One

### Introduction

#### *Statement of the Problem*

Anger is often called the forgotten emotion. Unfortunately, only a small amount of attention has been paid to anger in the research literature. Based on a keyword search in PsycINFO, Kassinove (1995) reported that the primary interest in the past 25 years has been on anxiety and depression. Anger has been relatively ignored by scientists, thus little empirical help has been provided for practitioners. From 1985 until 1997, approximately one tenth as many articles appeared in professional journals on anger, as did for depression, and one seventh as many for anxiety (DiGiuseppe, 1999). Anger has not been recognized as a distinctive emotional disturbance suitable for inclusion in the DSM-IV (American Psychiatric Association, 1994). Anger is mentioned as a symptom of disorders, such as Conduct Disorder, Oppositional Defiant Disorder, Intermittent Explosive Disorder, Borderline Personality Disorder, and Antisocial Personality Disorder, yet anger does not constitute a separate diagnostic entity. Anger management is also a “condition that may be a focus of clinical attention” classified under physical abuse of adults or children. Anger, and aggression as a related behavior, continue to be a major clinical concern.

Several recent studies have linked anger to cardiovascular illness (Brosschot & Thayer, 1998; Porter, Stone, & Schwartz, 1999; Richards, Hof, & Alvarenga, 2000; Suinn, 2001). According to the National Center for Health Statistics (1995), homicide is the third leading cause of death for adolescent boys (15 to 19 years) and young men (20 to 24 years), after motor

vehicle-related and other types of accidents. The United States Department of Justice (2001) recently reported the average age of violent criminals has declined to include older teens and young adults. For social psychologists, psychotherapists, and other practitioners whose primary focus is anger management, developing a better understanding of anger and aggression would prove beneficial.

The ability to predict violent and aggressive behavior has not been successfully accomplished due to the fact that acts of extreme violence are a relatively rare occurrence. Sylwester (1997) points out that 7% of the population commits 80% of all violent acts. The ability to accurately diagnose individuals with anger disorders, predict aggressive behavior, and treat angry individuals is a vital concern. Responding to this concern are researchers and practitioners who have constructed psychological measures that both describe the cognitive, behavioral and emotional experience of anger, as well as provide recommendations for effective treatment. The present study proposes to advance the understanding and treatment of anger by validating one such measure of anger in a prison population.

### *Purpose of the Study*

The purpose of this study is to further the understanding and treatment implications of anger by studying the psychometric properties of the ADS. Several existing measures have yet to capture the complexity of anger as a construct. Also, few measures provide treatment implications for specific anger profiles. The construct validity of the ADS was examined by studying its factor structure in an inmate population and correlating it with an existing measure;

specifically, subscales on the PAI. In order to facilitate aggression management and anger therapy in forensic settings, the present study proposes the development of anger profiles by comparing scores on the ADS to inmates' classification records.

### *Theoretical Background*

The controversy over whether aggression is an instinctive or learned behavior began with the work of Thomas Hobbs. In his classic work "Leviathan," Hobbs (1651) took the view that humans are naturally "brutes" and that only by enforcing the law and order of society can we curb this natural instinct toward aggression. Elaborating on this view, Sigmund Freud (1930) theorized that humans are born with an instinct toward life he called Eros, and an equally powerful instinct toward death call Thanatos. When turned inward, this instinct manifests itself in self-punishment or even suicide. Turned outward, this instinct manifests itself in hostility.

Similar to other emotions, anger has been viewed as an adaptive function common to most species. In humans, the ability to become angry and aggressive toward a rival was thought to be an inheritable trait necessary for survival during times when competing for food and other resources was necessary. Konrad Lorenz proposed that aggression stems mainly from an inherited "fighting instinct" that human beings share with many other species. Lorenz (1966) proposed that this instinct emerged to disperse populations over a wide range, thus ensuring maximum use of available resources. Lorenz suggested that fighting helps assure that only the strongest and most vigorous individuals will pass on their genes and promote the proliferation of the species.

Aaron Beck also suggests that anger and aggression have adaptive qualities. When angered, a primitive response occurs, which activates a form of primal thinking or “anger mode.” We become prepared for the attack by assuming the cause of the anger is deliberate, preventing us from obtaining a goal, and focusing our efforts on removing the source. Beck (1999) posits that while in an “anger mode” our thinking is both egotistic and absolutistic; thus rapidly processed information is prone to several biased assumptions.

Berkowitz (1990) presents evidence suggesting that aggression can be produced by a variety of extraneous factors, such as foul odors, high temperatures, exposure to painfully cold water and even disgusting scenes. Careful review of an enormous amount of literature testing these hypotheses reveals that aggression is strongly influenced by social, cultural, and interpersonal factors, and “even if it is based on innate tendencies, these are literally overwhelmed by other determinants of such behavior” (Baron & Byrne, 1994 p.437).

The role of cognitions, evaluations, beliefs, attributions, and schema have emerged in modern theories of anger and aggression. Research on what causes anger and aggressive behavior examines how people make sense out of ambiguous situations. Answering the question, “how can the same event cause one person to become angry, another depressed, and another anxious?” researchers have focused on how people perceive, interpret, evaluate, and act on stimuli.

Current findings in anger studies have determined that angry people have cognitive processes that seem to predispose, or lead them to, angry responses. One such study evaluated whether a hostile attribution bias extends to the manner in which aggressive males process incoming information. Courtney and Cohen (1996) posited that aggressive boys will perceive a stream of events differently than less aggressive boys. Subjects in this experiment were 146

elementary school boys who were judged as “aggressive” by their peers. Subjects were shown a 3- minute videotape of two boys playing tag. After a few episodes of tag, one of the boys fell down after being tagged by the other boy, who then ran away. The boy on the ground slowly got up and resumed the chase. The intent of the boy who tagged the other boy was ambiguous. Prior to viewing the videotape, each child received one of three information conditions: benign (the boys were friends), hostile (the boys did not like one another), or neutral (no information). Subjects segmented the action on the videotape by pressing a key when they perceived one action to stop and another to begin. The number of breakpoints was recorded before, during, and after the boy on the tape fell. Courtney and Cohen posited that more breakpoints are marked when a person is attempting to derive additional information from the situation. The authors predicted that subjects exhibiting a hostile attribution bias will need less information and use less segmentation.

Results indicated that when the subjects believed that the targets in the videotape did not like one other, there was no influence of the viewer’s level of aggression or the number of segments produced. When information was not given to help interpret the intent of the boys in the videotape, the viewer’s aggression level was not only related to overall frequency of segmentation before the fall, but also related to change in segmentation frequency following the fall. Courtney and Cohen (1996) concluded that aggressiveness in boys was related to how they evaluated a stream of events that included a potentially ambiguous event. The authors posited that aggressiveness appeared to be related to a heightened vigilance in ambiguous situations. Once an event was observed that fit their schema for interpreting the situation, more aggressive boys marked fewer segments.

In a similar study, Epps and Kendall (1995) investigated attributed hostility bias in adults. Subjects in this experiment were 120 undergraduate students (ages 17 to 38 years old) who were categorized according to their self-reported level of anger and aggressiveness. Each subject filled out a demographics sheet, the State-Trait Anger Expression Inventory, and the Buss-Durkee Hostility Inventory. Subjects read 22 scenarios depicting benign, aggressive, and ambiguous scenes. They then filled out emotional response questionnaires. Results showed that subjects who attributed hostility to another's actions in the absence of sufficient objective evidence also showed greater anger and aggression across multiple self-reported attitude and behavioral indicators. Epps and Kendall (1995) concluded that a significant relationship exists between attributed hostility bias and self-reported anger and aggression.

Research indicates that not only do angry and aggressive people view ambiguous situations as being more hostile, but they also process information differently. These people seem to be more "in tune" to other's actions and look for even the slightest evidence to support the perception that their anger or aggressive behavior is justified. Their mental filters, or schema, actively scan situations to find evidence of hostility. Once angered, their sense of injustice and unfairness is exaggerated. Research on individuals diagnosed with Antisocial Personality Disorder, a diagnosis reserved for exceptionally angry and aggressive individuals, found that the attitudes, beliefs, and thinking patterns in the minds of violent individuals support and promote their antisocial behaviors (Nauth, 1995). Evidence continues to mount on the importance of cognitions in the explanation and treatment of angry and aggressive behaviors (DiGiuseppe, Tafrate, & Eckhardt, 1994) ; however, the origin of these thinking patterns continues to be examined.

The current literature on parent-child interactions indicates the enormous impact parents have on their children's attitudes, beliefs, and behaviors. To determine if mothers of aggressive boys have the same propensity as their sons to infer hostile intentions in ambiguous interpersonal situations, Bickett, Milich, and Brown (1996) examined responses of mothers of aggressive and non-aggressive boys to hypothetical situations. Subjects in this experiment were 50 mothers and their children. The mothers and children were separated into two categories, mothers of aggressive children and mothers of non-aggressive children. Each mother was asked to interpret hypothetical situations involving themselves with their child, their partner, and a peer, as well as hypothetical situations involving their child interacting with classmates and teachers. The sons were also asked to interpret hypothetical situations involving themselves with their mothers, teachers, and classmates. Results indicated that both aggressive boys and mothers of aggressive boys failed to differentiate ambiguous from hostile situations and were likely to infer hostile intentions in ambiguous and hostile situations. The results also suggest a generalized tendency on the part of mothers of aggressive boys to infer negative motives or dispositions when accounting for their sons' offensive behavior. Bickett, et al. concluded that mothers of aggressive boys do share the propensity to infer hostility in ambiguous situations and may, in effect, model a hostile attributional bias.

### *Anger and Aggression Defined*

Anger and aggression are often mentioned interchangeably; however, a clear distinction exists and should be delineated. For the purposes of this study, anger will be operationally

defined as presented in Kassino (1995) as “a negative, internal feeling state associated with specific cognitive distortions, subjective labeling, physiological changes, and action tendencies to engage in socially constructed and reinforced organized behavioral scripts” (p.7). The development, experience, and expression of anger are influenced by neurological, temperament, endocrine, and other physiological processes (Deffenbacher, 1999). As in other emotions, such as anxiety or depression, the level of anger that is experienced and expressed is on a continuum. Anger can range from healthy or disturbed, adaptive or maladaptive, or any point in between. What delineates adaptive from maladaptive anger appears to be the cognitions, goals, and consequences of one’s anger. Adaptive anger is followed by socially appropriate assertion and problem-solving. This type of anger is sometimes viewed as “motivational” and does not cause undesirable consequences. The goal of maladaptive anger is to not only overcome an adversary, but to also seek revenge on an identified target. Maladaptive anger is antecedent to irrational, maladaptive beliefs and usually followed by aggression.

Aggressive behavior is one of several ways a person can express anger. According to Berkowitz (1993), aggression has to do with motor behavior that has a deliberate intent to harm, hurt, or injure another person or object. The relationship between anger and aggression is not always clear. Berkowitz noted that anger is not always goal directed but can be. Anger is sometimes used to maintain dominance, or change the probability of someone repeating an action, such as a parent displaying anger toward a child in order to curtail misbehavior. The distinction becomes less clear when aggressive acts are committed in the absence of anger. Consider the case of the jogger who was beat into a coma by a gang of youths in Central Park. These youths felt no anger toward the jogger yet their actions were clearly aggressive.

Considering the definitions of anger and aggression together, it seems that anger does not necessarily cause aggression, but the presence of anger can make aggressive behavior more available to the individual. Anger, like joy, produces a strong tendency to approach rather than avoid the perceived cause of the emotion. Berkowitz (1993) noted that “anger, as an experience, does not directly instigate aggression but usually only accompanies the inclination to attack a target” (p.20). In other words, the emotional experience of anger triggers a set of behavioral “scripts” available to the individual. Obviously, not everyone who feels anger becomes aggressive and not everyone who acts aggressively does so out of anger. This may be due to different anger “scripts” the individual has learned. Like an architect’s blueprint when building a house, anger makes aggression much easier (Kassinove, 1995).

Vitiello and Stoff (1997) provide evidence for qualitatively distinct subtypes of human aggression. In this study, the authors used clinical observation, laboratory paradigms, and factor analysis to identify four distinctive dichotomies of aggressive behavior; overt versus covert, reactive versus proactive, affective versus predatory, and hostile versus instrumental. Overt behavior, such as arguing, fighting, and tantrums, was contrasted with covert behaviors, such as stealing, truancy, and firesetting. A theoretical difference between hostile aggression (aimed at causing damage to a victim) and instrumental aggression (aimed at attaining other rewards) was proposed. Similar to instrumental aggression, proactive aggression is initiated in order to obtain specific rewards and can be expressed with behaviors, such as coercion, attacks with the purpose to steal, and bullying on younger children. In contrast, reactive aggression is a response to a perceived threat. The existence of a predatory (controlled, goal-orientated, planned) and an affective (uncontrolled, impulsive, unplanned) aggression was delineated.

Vitiello and Stoff (1997) concluded that children with the controlled-proactive-instrumental-predatory subtype of aggression are more likely to respond to behavior therapy as they seem to be able to control their behavior and therefore be more sensitive to environmental reinforcers. Conversely, the impulsive-reactive-hostile-affective subtype appear to be driven to aggression by cognitive distortions and can be expected to respond to pharmacological and psychosocial interventions. Recent studies have also supported this hypothesis. Smithmyer, Hubard, and Simons (2000) argue that the effectiveness of interventions to reduce aggression would be enhanced by matching proactive and reactive patients to interventions based on the specific deficits associated with each type of aggression.

### *Correlates of Anger*

Continued research is needed to further identify individuals with a propensity towards violent behavior; however, until the underlying emotion of anger can be conceptualized, the propagation of this research is limited. Attempts to define, delineate, and understand the construct of anger has led researchers to explore seemingly related and well established emotional constructs, such as anxiety and depression. Most of these studies provided sparse empirical evidence and have done very little to advance the understanding and treatment of anger.

*Depression.* Historically, the treatment of anger and aggressive behaviors has led many clinicians to conceptualize the anger problem as “underlying depression.” Testing Freud’s theory

that anger is related to depression in that it can be defined as anger turned on the self, Beck (1976) examined the thoughts and dreams of depressed patients. Contrary to themes of internalized anger, as would have been predicted by Freud's theory, Beck concluded that depression was characterized by a consistent bias toward negative interpretations of the self, the environment, and the future.

DiGiuseppe (1999) points out commonalities between anger and depression. "Individuals who experience anger and depression are unstable in the way they assign blame and have an unstable sense of self-efficacy" (p.373). What appears to delineate anger from depression is the individual's perceived source of blame. When an individual with high self-efficacy blames another for an event or wrong doing, they experience anger. Conversely, when an individual with low self-efficacy places blame on the self, depression soon follows. Thus, depression is not anger directed inward. Depression is "blame" turned inward, while anger is "blame" turned outward. This hypothesis has led to the idea that anger is a defense against an underlying depression or feelings of low self-worth.

Presenting evidence that a wide variety of unpleasant feelings, such as depression, can give rise to anger and aggression, the Cognitive-Neoassociationistic model was proposed by Berkowitz (1990). This model posits that aversive stimuli, such as foul odors, cold temperatures, and loud noises, automatically trigger negative affectivity. Berkowitz postulates that negative affect will then activate ideas, memories, and motor reactions associated with anger and aggression. However, in the development of psychometric instruments to define the construct of anger, several researchers have found anger to be a distinctively different construct than anxiety and depression.. The scale scores from both the ADS (DiGiuseppe & Tafrate, 2000) and the

STAXI (Spielberger, 1988) loaded on a factor separate from negative affectivity, suggesting that anger is a different emotional experience than anxiety and depression.

*Self-Esteem.* Recently, the association of anger with self-esteem has received much needed attention in the research literature. An ongoing debate has unfolded between those who maintain that high levels of anger are associated with low levels of self-esteem, and those who maintain that high anger is associated with high, even narcissistic, levels of self-esteem. The debate has been caused by the public opinion that violent individuals are egotistical and arrogant, then adding the assumption that they must have low underlying self-esteem. Those holding that low self-esteem is the impetus behind high levels of anger and aggression posit that certain people are prompted by their inner self doubts and self dislike to lash out against other people, possibly as a way of gaining self-esteem or simply because they have nothing to lose (Bushman & Baumeister, 1998). Avril (1982) posits that low self-esteem may be associated with greater anger and hostility because threats to an already low self view are likely to be aversive. Evolutionary psychology argues that each successful social interaction enhances the level of the neurotransmitter serotonin in the brain, thus increasing motor coordination and self-esteem (Sylwester, 1997). Failure and negative social feedback is believed to inhibit the effects of serotonin and lead to lower self-esteem, irritability, impulsivity, and violence.

The other side of the debate, that high self-esteem is related to anger, has been gaining popularity as it generates strong empirical evidence. Kernis, Grannemann, and Barclay (1989) report mounting evidence that suggests high self-esteem is associated with greater proneness toward anger and hostility. Subjects in this experiment carried paging devices for a period of 1

week. They were signaled at various times to complete measures of self-esteem. After 1 week, subjects completed four standard anger and hostility measures. Subjects with high but unstable self-esteem reported the highest tendencies toward hostility and anger, whereas stable high self-esteem reported the lowest. Kernis, et al. concluded that individuals with unstable high self-esteem have the most to lose from a self-esteem threat due to a positive, yet fragile self concept. In contrast, individuals with stable high self-esteem have little reason to feel threatened by provocations because they are secure in their self values.

Citing research linking high self-esteem with narcissism, Bushman & Baumeister (1998) examined the link between narcissism and aggression. In this experiment, subjects completed measures of narcissism and self-esteem and were then exposed to an evaluation that was either an ego threat or an ego boost. The experimenters then measured the amount of aggression each subject exhibited toward the person who had delivered the evaluation. Subjects were asked to write a one paragraph essay on abortion. The essay was reviewed by a confederate, who evaluated the essay either positively or negatively. The next part of the procedure was presented as a competitive reaction time task. Subjects were allowed to administer blasts of noise to confederates with slow reaction times. Noise intensity and noise duration were measured as the same construct: aggressive behavior. Bushman and Baumeister (1998) found that ego threat, in the form of an insulting essay evaluation, led to higher aggression than the nonthreatening, favorable evaluation.

Thus far, the relationship between anger and self-esteem has only begun to be established in school aged children. One study found that children with unstable self-esteem were more likely to report they would become angry following an aversive interpersonal event (Waschell &

Kernis, 1996). This study represented the first time the relationship between anger and ego involvement were studied in children. Despite the fact that this relationship continues to be validated through adult populations, several research questions remain unanswered. Does level or stability of self-esteem affect anger and aggressive behavior the same way for children? Are there developmental issues regarding the relationship between anger and self-esteem? Can self-esteem and anger be linked to describe a specific diagnostic category for children?

*Anxiety.* A clear cognitive and behavioral separation exists between anger and anxiety. Both anger and anxiety are emotional states, which occur in response to a real or imagined threat. The separation first occurs at the cognitive level, where an analysis of the perceived risk and the ability to cope with the threat occurs. The inherent emotion is anger, which evokes an “approach” response when the perception of the ability to effectively deal with the threat outweighs the perceived risk. Thus, anger is used to overcome the physical or emotional threat, perceived injustice, or counter the insult. In contrast, when the perception of risk or harm outweighs the ability to successfully cope with the situation, the underlying emotion is anxiety, which evokes an “avoidant” response.

Physiologically, anger consists of sympathetic arousal, increased muscle tension, release of adrenal hormones and other elements of the “flight or fight” response (Deffenbacher, 1999). Physiologically, anger resembles anxiety and has been correlated highly in several research experiments, including validation studies on anger instruments (DiGiuseppe & Tafrate, 2000). Anxiety and anger however, have emerged as separate physiological constructs when regional blood flow is examined (Kimbrell et. al, 1999). Using positron emission tomography (PET) to

measure cerebral blood flow, Kimbrell et. al. found significant differences among anxiety, anger, and neutral emotions. Subjects achieved differential emotions by recalling prior life events while viewing affect-appropriate faces. Results show that when compared to the neutral induction, both anxiety and anger conditions were associated with increased normalized regional cerebral blood flow in left inferior frontal and left temporal pole regions, as well as decreased regional cerebral blood flow in right posterior temporal, parietal, and right superior cortex. However, anxiety was associated with increased regional cerebral blood flow in right medial frontal cortex, while the anger induction was uniquely associated with increased regional cerebral blood flow in right temporal pole and thalamus. Results of this study suggests that there is not only a cognitive and behavioral difference between anger and anxiety, but also a physiological difference.

### *Related Research*

Psychological measures are available to evaluate the experience, expression, and control of anger, such as the STAXI (Spielberger, 1988), the Clinical Anger Scale (CAS) (Snell et al., 1995), and the Novaco Anger Scales (Novaco, 1994). However, the ability to distinguish between angry, aggressive, and potentially violent individuals in the general public has not been reached. A recent study explored the thinking and behavior of all 83 persons known to have attacked a prominent public figure in the United States since 1949. Fein and Vossekuil (1999) gathered data about each attack, including each subject's demographic and background characteristics, as well as each individual's ideas and actions in the days and weeks before the attacks. Questions were examined about each subjects movement from the idea for the attack to

actual attack, motives, selection of targets, planning, communication of threat or intent, symptoms of mental illness, and significant life events. The purpose of this study was to gather and analyze information that Secret Service agents and other law enforcement professionals could use to prevent attacks on public officials.

Fein and Vossekuil (1999) provided the following results: 86% were male, 77% were Caucasian, 66% presented a prior history of incarceration, 61% were ever evaluated or treated by a mental health professional, 24% presented a history of suicide attempts, and 39% presented a history of substance abuse. Results also indicated that no attackers communicated a direct threat about their target to the target or to law enforcement agencies before their attack. Two-fifths of the subjects had been psychiatrically hospitalized at least once. In every case, Fein and Vossekuil found a discernable pattern of thinking and “attack-related” behaviors, such as stalking.

Another study investigated the utility of self-reported anger in assessing the potential for aggressive behavior among incarcerated juvenile offenders (Cornell, Peterson, & Richards, 1999). Participants in this study completed the Novaco Anger Scales (Novaco, 1994) and the State-Trait Anger Expression Inventory (Spielberger, 1988). Subjects were observed by facility counselors for 3 months who carefully documented each incident of both physical and verbal aggression. Results indicated that none of the anger scales were significantly correlated with the subject’s number of prior offenses; however, anger scores from both measures were predictive of subsequent physical and verbal aggression. Physical aggression was significantly correlated with Trait Anger ( $r = .28$ ), Anger Out ( $r = .25$ ), and Anger Control ( $r = -.35$ ). Verbal aggression was significantly correlated with Trait Anger ( $r = .35$ ), Anger Out ( $r = .33$ ), and NAS-A ( $r = .29$ ).

The role of cognitions, beliefs, and attitudes has contributed to the understanding of anger and has led researchers to examine these factors in the development of instruments used to assess anger problems. The Anger Disorders Scale (DiGiuseppe & Tafrate, 2002) was developed to assess clinical populations for anger problems. The items are based on criteria developed for a proposed anger disorder in future versions of DSM. The ADS generates a total anger score, a total aggression score, and three higher-order factor scores. This scale has shown good internal consistency and test-retest reliability. Good convergent validity was established through correlations with the Spielberger (1988) State Trait Anger Expression Inventory (STAXI) and the Buss and Perry (1992) Aggression Questionnaire (AQ).

The Anger Disorders Scale (ADS) is a 74-item inventory assessing five specific domains of emotional experiences; arousal, provocations, cognitions, motives, and behavioral expressions. Provocations correspond to the triggers, or eliciting stimuli that precede emotions. Within the provocations domain there are two subscales; scope of provocations and hurt/social rejection. The arousal domain corresponds to the physiological arousal, intensity, and duration of the emotional experience. The subscales in this domain are: physiological arousal, duration of anger as a problem, and episode length. The cognitive domain reflects the beliefs, schema, and information processing elements that occur when one experiences the emotion. Subscales in this domain are: suspicion, resentment, poor self control and rumination. The motivation domain has scales measuring coercion, tension reduction, and revenge motives. The behavioral domain reflects the most empirically demonstrated behaviors elicited by anger. Subscales in this domain are: anger in, physical aggression, verbal expression, relational aggression, passive aggression, and indirect aggression.

All items are answered on a 5-point Likert scale. The anchors for the Likert scales differ for some of the subscales. Although all items have a 5-point Likert format, they do not share the same choices. Example items include, “I get angry about”: 1) almost nothing, 2) only one thing in my life, 3) several things in my life, 4) many things in my life, 5) almost everything in my life. “When I get mad, I stay mad for about”: 1) only a few minutes, 2) a few hours, 3) several days, 4) about a week, 5) a month or more. All items contribute to only one subscale.

A recent study explored the psychometric properties of the ADS and provided support for the factor structure of the instrument (DiGiuseppe, Leis, & Tafrate, 2001). The ADS was administered to 640 subjects who, were recruited primarily at their place of employment. Data was analyzed using a principal axis factor analysis resulting in a 12-factor solution. All test items loaded on their particular scale items and only loaded on a single factor providing support for the structure of the scales. The experimenters then submitted the 18 ADS subscales to a principal axis factor analysis, which yielded a 3- factor solution. Only Anger in and Verbal Expression loaded on a single factor, while all of the other behavioral scales loaded on the second factor. This solution failed to support the major distinction between anger-in and anger-out; however, the 3 factors significantly explained distinct aspects of anger and were labeled as separate higher order factors.

The first factor was labeled Anger Expression. Scales that loaded very highly on this factor included verbal expression, poor self control, rumination, physiological arousal, and duration of anger as a problem. The second factor was labeled Anger-In. Scales that loaded very highly on this factor included anger-in, hurt, and suspiciousness. The third factor was labeled Vengeance. Scales that loaded very highly on this factor included revenge, coercion, and most of

the behavior scales including physical aggression, passive aggression, relational aggression, and indirect aggression. DiGiuseppe, Leis, and Tafrate (2001) concluded that both anger-in and anger-out are major means of anger expression; however, anger-out can be expressed as separate factors of verbal or physical aggression.

The Personality Assessment Inventory (PAI) has been established as a valuable diagnostic tool in the forensic setting (Salekin, Rogers, Ustad, & Sewell, 1998; Wang et. al, 1997). In a recent study, Rogers, et al. examined the convergent validity of the PAI using emergency referrals in a metropolitan correctional facility. A sample of 80 referrals completed two phases of an assessment study. As a measure of convergent validity, results of PAI scales were compared to the Schedule of Affective Disorders and Schizophrenia (SADS), the Structured Interview of Reported Symptoms (SIRS), and the Suicide Probability Scale (SPS). Results indicated good convergent validity for screening for feigned profiles. No significant differences were observed between genuine patients and feigners with respect to age,  $p = .92$ ; education,  $p = .88$ , or racial composition,  $p = .99$ . Results indicated good convergent validity for establishing clinical correlates of common disorders. The strongest finding was for the evaluation of depression ( $r = .67$ ), whereas the Schizophrenia scale (SCZ) did not appear to have discriminant validity in this study ( $r = .46$ ). Results also indicated good convergent validity for evaluating the potential for suicidal ideation. The PAI SUI scale had a moderately high correlation,  $r = .74$ , with the suicide subscale of the SPS.

Studies on the utility of the PAI Aggression subscales to predict violence have been favorable. A recent study indicated the Antisocial Personality Style and Aggression subscales on the PAI to be a reliable predictor of verbal and physical aggression in male prisoners (Wang,

1999). This study constructed a structured model of the influences of verbal and physical aggression on the following factors: anger, antisocial personality style, criminal history, impulsiveness, and social context. The investigator used the PAI in conjunction with the Buss-Perry Aggression Questionnaire and previous criminal history. Results indicated that a structural model, including anger, antisocial personality style, impulsivity, current violent offense, and ethnicity, accounted for 94 % of the variance of physical aggression, 87% of the variance of verbal aggression, and 80% of the total variance. In sum, the PAI has demonstrated clinical utility in the forensic setting. However, continued research is needed to establish correlates with specific subtypes of anger expression

#### *Specific Hypotheses.*

Several hypotheses were proposed for this study. 1: The ADS will correlate highly and show good convergent validity with the Aggression subscale of the PAI. 2; The ADS will show good internal consistency; 3. The factor structure of the ADS is expected to be supported; 4. Severity of Current Offense are expected to positively correlate with the following ADS scales: Revenge Motives, Episode Length, Anger In-factor score, Indirect Aggression, Resentment, and Rumination, while a significant negative correlation is expected for Impulsivity, Arousal, Tension Reduction, Relational and Verbal Aggression, Hurt, and Coercion.

## Chapter Two

### Method

#### *Participants*

Subjects in this study were 213 inmates from the State Correctional Institute in Dallas Pennsylvania. Permission was obtained to gather data at this facility as stated in The Commonwealth of Pennsylvania Department of Corrections Policy 2.1.2.-Research Activities. There are currently 1,898 male inmates residing at this institution. Of these, .21% are Asian, .27% American Indian, 55.86% African American, 8.69% Hispanic, 34.59% Caucasian, and .27% are classified as Other. The average age of an inmate is 38. The minimum sentence at the SCI-Dallas is 94.56 months, with the maximum time being served is 204.93 months. A total of 398 inmates are serving life sentences.

#### *Measures*

*Psychopathology.* Psychopathology was measured via the Personality Assessment Inventory (Morey, 1991). The Personality Assessment Inventory (PAI) is a self administered, objective test of personality and psychopathology. The clinical syndromes assessed by the PAI were selected on the basis of two criteria: the stability of their importance within the nosology of mental disorder, and their significance in contemporary diagnostic practice (Morey, 1996). The test contains 344 items that are answered on a four-alternative scale, with the anchors Totally

False, Slightly True, Mainly True, and Very True. The 344 items of the PAI comprise 22 non-overlapping full scales: 4 validity, 11 clinical, 5 treatment consideration, and 2 interpersonal scales.

The validity scales were developed to provide an assessment of the potential influence of certain response tendencies on PAI test performance. Two of the scales (Infrequency and Inconsistency) were developed to assess deviations from conscientious responding, whereas the other two validity scales (Negative Impression and Positive Impression) were developed to provide an assessment of efforts at impression management by the respondent. The clinical scales were constructed to provide information about critical diagnostic features of 11 constructs. The 11 scales are divided into three classes of disorders; neurotic, psychotic, and behavioral problems. The neurotic scales include: Somatic Complaints, Anxiety, Anxiety Related Disorders, and Depression. The psychotic scales include: Mania, Paranoia, and Schizophrenia. The scales associated with behavioral disorders or impulse control problems include; Borderline Features, Antisocial Features, Alcohol Problems, and Drug Problems.

The five treatment consideration scales were constructed to provide indicators of potential complications in treatment. Two of these scales measure the potential for harm to self or others (Aggression and Suicidal Ideation), two measure the subject's environmental circumstances (Stress and Nonsupport), and one measure of the subject's motivation for treatment (Treatment Rejection). The two interpersonal scales were designed to provide an assessment of the interpersonal style of subjects along two dimensions: (a) warmly affiliative versus cold and rejecting (Warmth), and (b) dominating and controlling versus submissive (Dominance).

The PAI is a widely used instrument with good psychometric properties. The internal consistency alphas for the PAI full scales are satisfactory. Morey (1991) reports median alphas for the full scales of .81, .82, and .86 for normative, college, and clinical samples, respectively. Several different instruments were used in the examination of external correlates of different PAI scales. In addition to instruments which were used for a specific scale (such as the Beck Depression Inventory), a number of broad-band assessment devices were used to provide referents for a wide variety of PAI scales. These scales included the domain and facet scales of the NEO-PI (Costa & McCrae, 1985), MMPI (Hathaway & McKinley, 1967) clinical, content, and personality disorders scales, and the eight octant scores of the Interpersonal Adjective Scales-R (Wiggins, Trapnell, & Phillips, 1988).

*Anger Disorders Scale.* Level of anger was measured using the Anger Disorders Scale (DiGiuseppe & Tafrate, 2002). This scale has shown good internal consistency and test-retest reliability. Good convergent validity was established through correlations with the Spielberger (1988) State Trait Anger Expression Inventory (STAXI) and the Buss and Perry (1992) Aggression Questionnaire (AQ). The Cronbach Alpha coefficient for the total scale is .97. The alpha coefficients for the higher-order factor scales range from .91 to .95. The alpha coefficients for the 18 subscales range from .70 to .92.

In addition to having adequate internal consistency, support for the structure of the individual subscale comes from factor analysis of each of the theoretical domains, and factor analysis of all the items. Factor analysis of the nine items in the provocations domain yielded a two-factor solution that accounted for 62.6% of the variance (Hurt and Social Rejection). Factor

analysis of the fifteen items in the cognitive domain yielded a four-factor solution that accounted for 71.8% of the variance (Rumination, Resentment, Poor self Control, and Suspiciousness). Factor analysis of the 11 items in the arousal domain yielded a three factor solution that accounted for 72.5% of the variance (Physiological Arousal, Duration of Anger Problems, and Episode Length). A factor analysis of the eleven items in the Motives domain yielded a three-factor solution that accounted for 65.7% of the variance (Coercion, Revenge, and Tension Reduction). Factor analysis of the 26 items in the behavior domain yielded a five-factor solution that accounted for 61.4% of the variance (Anger In, Verbal Aggression, Passive Aggression, Indirect Aggression, and Relational Aggression).

The 18 subscales of the ADS were factor analyzed and yielded three factors. The results of this analysis were used to construct three higher-order factor scales. The first factor, Anger In, includes the behavior subscale of Anger-In and the scores from the Hurt/Social Rejection, Suspiciousness, Resentment, and Episode Length scales. The second factor, Verbal Expression, consists of the subscales Scope of Provocations, Physiological Arousal, Verbal Aggression, Rumination, Impulsivity, and Duration of Anger Problems. The third factor, Vengeance, consisted of the subscales Physical Aggression, Coercion, Relational Aggression, Revenge Motives, Passive Aggression, and Indirect Aggression.

*Classification Records.* Each inmate at State Correctional Institute-Dallas is classified both initially and annually using a systematic classification system. Inmates are classified initially on seven factors resulting in an overall score. These factors are: 1) Severity of Current Offense (low, medium, and high); 2) Severity of Criminal History (none, low, medium, and high). Both of these factors are based on offense gravity score in sentencing guidelines (Appendix A); 3)

Escape History (none, walkoff >3 years ago, walkoff < 3 years ago, Escape > 3 years ago, and Escape < 3 years ago); 4) Prior Institutional Adjustment (unknown, good, satisfactory, marginal, and poor); 5) Number of Prior Commitments (none, one, two, three or more); 6) Time to Expected Release ( 0-23 months, 24-59 months, 60-179 months, 180-999 months, Life sentence or Execution); and 7) Stability Factors (age, marital status, and employment).

Each inmate is reclassified annually with four additional factors included. These factors are: 1) History of Institutional Violence (none, assault not involving a weapon or injury, assault with a weapon or causing injury, and assault occurring in the last 6 months); 2) Number of Disciplinary Reports (ranging from none in the last 12 months to more than two in the last 6 months); 3) Most Severe Disciplinary Report Received (Class I-A to Class II); and 4) Program participation, work performance, and housing performance.

The total score on the classification record leads to the assigned custody level of the inmate. The custody level is used to describe the degree of staff supervision and control necessary to monitor the behavior of the inmate (Appendix B). Custody is provided at the following gradations: Level-1 (Community Corrections), Level-2 (Minimum), Level-3 (Medium), Level-4 (Close), and level-5 (Maximum). Newly received inmates who are unclassified are assigned to Custody Level-4.

### *Procedures*

Inmates were randomly chosen by means of the prison roster to report to the school auditorium. Fifteen subjects a week volunteered for this experiment for 14 weeks. The purpose

and voluntary nature of the experiment was explained to each subject. A consent form explaining the nature of the experiment and requesting permission to review their PAI scores and classification records was distributed. All subjects read and signed the consent form. Each subject then filled out the ADS and returned it to the examiner. After completing the ADS each subject was debriefed.

## Chapter Three

### Results

The demographic data of the subjects will be presented first. The reliability coefficients of the Anger Disorders Scale and three higher-order factor scores will be presented next. The correlations between the Anger Disorders Scale and the Personality Assessment Inventory will then be presented, followed by the correlations between the Anger Disorders Scale and classification records. The results of the factor analysis will be presented, starting with the principal axis factoring of all ADS items and followed by a principal axis factoring of ADS subscales.

#### *Descriptive Statistics*

A total of 213 subjects completed this experiment. Of them, 85 were Caucasian (39%), 114 were African American (53.5 %), and 14 were Hispanic (6.6%). ADS Total scores ranged from 34 to 88 with a mean of 48 and standard deviation of 9.8. Table 1 presents a summary of the demographic data. The mean age of the subjects was 34.22 (SD =12.10). Each inmate is administered a standardized battery of psychological testing upon initial classification to include intelligence and personality measures. The mean IQ of the sample as measured by the BETA Intelligence Test was 91.96 (SD =12.47). The mean reading score as measured by the Wide Range of Achievement Test (WRAT) was 8.4 (SD =3.5). Reading, Spelling , and Arithmetic scores on the WRAT are presented as grade equivalents.

Table 1

*Demographic Data of Sample*

	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
<b>Age</b>	18	71	34.22	12.10
<b>IQ</b>	60	120	91.86	12.47
<b>Reading</b>	2.00	14.90	8.41	3.51
<b>Spelling</b>	2.00	13.00	6.74	3.17
<b>Arithmetic</b>	2.00	13.00	6.45	2.54
<b>Highest Grade Completed</b>	2	14	10.93	1.78
<b>ADS Total Score</b>	34	88	48	9.8

Note: ADS scores are presented as linear t-scores

Classification data were also gathered for each subject. The Offense Code Listing for Classification (Department of Corrections, 1993) was used to determine type of offense. Table 2 presents frequencies for Current Offense. The majority of the subjects (53.1%) were incarcerated for a Non Violent/Non Sexual Offense. For example, Tax Evasion, Counterfeiting, or Forgery. A small number of subjects (9.95) were convicted of a Violent/Sexual Offense, such as Rape. Few subjects (.9%) were incarcerated for a Non Violent/Sexual Offense, such as Public Lewdness. Records obtained for each subject's prior convictions demonstrated a similar frequency with the majority of the subjects (45.1%) having pre-existent convictions for Non Violent /Non Sexual offenses. Table 3 presents frequencies for Past Offense.

Table 2

*Current Offense*

<b>Offense</b>	<b>Frequency</b>	<b>Percent</b>
<b>Non Violent, Non Sexual</b>	113	53.1%
<b>Non Violent, Sexual</b>	2	0.9%
<b>Violent, Non Sexual</b>	70	32.9%
<b>Violent, Sexual</b>	21	9.9%
<b>Missing</b>	7	3.3%
<b>Total</b>	213	100%

Table 3

*Past Offense*

<b>Offense</b>	<b>Frequency</b>	<b>Percent</b>
<b>Non Violent, Non Sexual</b>	96	45.1%
<b>Non Violent, Sexual</b>	3	1.4%
<b>Violent, Non Sexual</b>	71	33.3%
<b>Violent, Sexual</b>	26	12.2%
<b>Missing</b>	17	8%
<b>Total</b>	213	100%

Inmates detained in the Restricted Housing Unit (RHU) were classified as a high-security risk (Level Five) and unavailable for inclusion in the study. These inmates were unable to move freely within the prison without an escort and restraints. Also, inmates residing in community housing (Level One) were not included in the study. These inmates resided outside of the prison parameter and were not able to enter the prison without escort. Appendix B reviews criteria for each custody level. Only three subjects (1.4%) did not have recorded custody level data. The majority of the subjects (49.8%) resided in a Level Two area in the prison. Several of the subjects (16.9%) resided in a highly secure area of the prison (Level 4) but were allowed to volunteer for this study. Table 4 presents frequencies for Current Custody Level.

Table 4

*Current Custody Level*

<b>Custody Level</b>	<b>Frequency</b>	<b>Percent</b>
<b>Level One</b>	Unavailable	0%
<b>Level Two</b>	106	49.8%
<b>Level Three</b>	68	31.9%
<b>Level Four</b>	36	16.9%
<b>Level Five</b>	Unavailable	0%
<b>Missing</b>	3	1.4%
<b>Total</b>	213	100%

Inmates who are reprimanded for violating a code of conduct are issued a written misconduct by prison staff. The most severe misconduct is kept in the inmate's file for 18 months. Misconducts range from minor infractions (Class II) such as smoking where prohibited, to additional criminal charges (Class 1A) such as Assault, Rape, and Escape. Table 5 presents Severity of Most Recent Misconduct. The majority of the subjects (72.8%) did not have a misconduct within 18 months of this experiment. Most of those subjects who had a recorded conduct violation had Class 1B violations (14.1%). Only 4.2% of the subjects had a major conduct violation.

Table 5

*Severity of Most Recent Misconduct*

	Frequency	Percent
<b>No Misconduct</b>	155	72.8%
<b>Class 1A</b>	9	4.2%
<b>Class 1B</b>	30	14.1%
<b>Class 1C</b>	2	.9%
<b>Class 1D</b>	10	4.7%
<b>Class 2</b>	2	.9%
<b>Missing</b>	5	2.3%
<b>Total</b>	213	100%

### *Coefficient Alpha.*

Results of this analysis indicate the ADS demonstrates good reliability. The reliability coefficient for the 74 items comprising the total scale (Alpha =.97). The reliability coefficient for the 25 items comprising the first higher order-factor score (Alpha =.94). The reliability coefficient for the 21 items comprising the second higher-order factor score (Alpha =.92). The reliability coefficient for the 25 items comprising the third higher-order factor score (Alpha =.93).

### *Correlations*

*ADS & PAI-Aggression Scale.* Sixty eight subjects were not administered the PAI upon initial classification due to an alternate personality measure (MMPI-II) used prior to 1999. Also, the scores of 17 subjects were not used in data analysis due to generating invalid PAI profiles. Linear t-scores of the ADS and the valid PAI profiles were submitted to a bivariate correlation. Overall, results of the correlations support the hypothesis that the ADS correlates highly with the aggression scale of the PAI ( $r=.537, p<.0001$ ). Also, the third higher-order factor scale of the ADS (Revenge) correlated highly with the PAI aggression scale ( $r=.531, p<.0001$ ). Nearly all subscales of the ADS correlated moderately with the aggression subscale of the PAI. Only the Tension Reduction subscale demonstrated no correlation ( $r=.044, p=.623$ ). Table 6 presents a summary of these correlations.

Table 6

*Correlations Between ADS and PAI Aggression Scale*

<b>ADS Subscale</b>		<b>PAI Aggression Scale</b>
Anger In	Pearson Correlation Sig. (2-tailed)	.433 p <.0001
Physiological Arousal	Pearson Correlation Sig. (2-tailed)	.371 p <.0001
Physical Aggression	Pearson Correlation Sig. (2-tailed)	.383 p <.0001
Verbal Aggression	Pearson Correlation Sig. (2-tailed)	.398 p <.0001
Rumination	Pearson Correlation Sig. (2-tailed)	.351 p <.0001
Poor Self Control	Pearson Correlation Sig. (2-tailed)	.435 p <.0001
Coercion	Pearson Correlation Sig. (2-tailed)	.365 p <.0001
Duration of Anger as a Problem	Pearson Correlation Sig. (2-tailed)	.395 p <.0001
Episode Length	Pearson Correlation Sig. (2-tailed)	.360 p <.0001
Scope of Anger	Pearson Correlation Sig. (2-tailed)	.410 p <.0001
Hurt / Social Rejection	Pearson Correlation Sig. (2-tailed)	.283 p <.001
Resentment	Pearson Correlation Sig. (2-tailed)	.286 p <.001
Suspiciousness	Pearson Correlation Sig. (2-tailed)	.207 p <.019
Relational Aggression	Pearson Correlation Sig. (2-tailed)	.204 p <.021
Tension Reduction	Pearson Correlation Sig. (2-tailed)	.044 p <.623
Revenge Motives	Pearson Correlation Sig. (2-tailed)	.443 p <.0001

<b>ADS Subscale</b>		<b>PAI Aggression Scale</b>
Passive Aggression	Pearson Correlation Sig. (2-tailed)	.351 p <.0001
Indirect Aggression	Pearson Correlation Sig. (2-tailed)	.514 p <.0001
ADS Total Score	Pearson Correlation Sig. (2-tailed)	.537 p <.0001
Higher Order One	Pearson Correlation Sig. (2-tailed)	.489 p <.0001
Higher Order Two	Pearson Correlation Sig. (2-tailed)	.422 p <.0001
Higher Order Three	Pearson Correlation Sig. (2-tailed)	.531 p <.0001

There is a positive correlation between the Anger In subscale of the ADS and the aggression subscale of the PAI ( $r = .433, p < .0001$ ). A positive correlation was found between the Verbal Aggression subscale of the ADS and the Aggression subscale of the PAI ( $r = .398, p < .0001$ ). A positive correlation was observed between the Poor Self-Control subscale of the ADS and the Aggression subscale of the PAI ( $r = .435, p < .0001$ ). There is a positive correlation between the Duration of Anger as a Problem subscale of the ADS and the Aggression subscale of the PAI ( $r = .395, p < .0001$ ). There is a positive correlation between the Scope of Anger subscale of the ADS and the Aggression subscale of the PAI ( $r = .410, p < .0001$ ). A positive correlation was found between the Indirect Aggression subscale of the ADS and the Aggression subscale of the PAI ( $r = .514, p < .0001$ ).

Moderate correlations were detected between the Hurt and Resentment subscales and the Aggression subscale of the PAI. A correlation was not detected between the Tension Reduction subscale of the ADS and the Aggression subscale of the PAI ( $r = .044, p = .623$ ). Two additional ADS subscales rendered significant, yet weak correlations. Suspiciousness ( $r = .207, p = .019$ ), and Relational Aggression ( $r = .204, p = .021$ ). These three ADS scales appear to measure unique qualities of anger expression which, were not assessed by the PAI.

*ADS & PAI Aggression Subscales.* The Aggression Scale of the PAI is divided into three subscales: Aggressive Attitudes, Physical Aggression, and Verbal Aggression. Linear t-scores of the ADS and the Aggression subscales of the valid PAI profiles were submitted to a bivariate correlation. Table 7 presents a summary of these correlations. The results substantiate the hypothesis that the ADS will correlate highly with the PAI Aggression subscales. The ADS Total

Score significantly correlated with the Aggressive Attitude subscale ( $r = .484, p < .0001$ ), and the Physical Aggression subscale ( $r = .456, p < .0001$ ). A low correlation was detected between the ADS Total Score and the Verbal Aggression subscale ( $r = .296, p < .004$ ). The ADS-Physical Aggression subscale significantly correlated with the PAI-Physical Aggression subscale ( $r = .318, p < .002$ ). The ADS-Verbal Aggression subscale significantly correlated with the PAI-Verbal Aggression subscale ( $r = .302, p < .003$ ).

Most of the ADS subscales correlated significantly with the three Aggression subscales of the PAI. The most robust correlations appeared between the ADS subscales and the PAI Aggressive Attitude subscale. The three ADS higher order factor scores strongly correlated with the three PAI Aggression subscales. The ADS-Hurt/Social Rejection and Relational Aggression subscales demonstrated no correlation with the Aggressive Attitude and Verbal Aggression subscales of the PAI, however weak, yet significant, correlations were detected between these subscales and the PAI-Physical Aggression subscale. The ADS-Rumination subscale demonstrated no correlation with the PAI-Verbal Aggression subscale but correlated highly with the PAI-Aggressive Attitude and Physical Aggression subscales. Once again, the ADS-Tension Reduction subscale demonstrated no correlation with any of the PAI Aggression subscales.

Table 7

*Correlations Between ADS and PAI Aggression Subscales*

<b>ADS Subscale</b>		<b>Aggressive Attitude</b>	<b>Verbal Aggression</b>	<b>Physical Aggression</b>
Anger In	Pearson Correlation Sig. (2-tailed)	.433 p <.0001	.159 p <.120	.365 p <.0001
Physiological Arousal	Pearson Correlation Sig. (2-tailed)	.366 p <.0001	.127 p <.216	.309 p <.002
Physical Aggression	Pearson Correlation Sig. (2-tailed)	.238 p <.019	.239 p <.018	.318 p <.002
Verbal Aggression	Pearson Correlation Sig. (2-tailed)	.389 p <.0001	.302 p <.003	.386 p <.0001
Rumination	Pearson Correlation Sig. (2-tailed)	.373 p <.0001	.090 p < .381	.296 p <.003
Poor Self Control	Pearson Correlation Sig. (2-tailed)	.348 p <.0001	.212 p <.037	.385 p <.0001
Coercion	Pearson Correlation Sig. (2-tailed)	.394 p <.0001	.310 p <.002	.363 p <.0001
Duration	Pearson Correlation Sig. (2-tailed)	.404 p <.0001	.127 p <.216	.288 p <.004
Episode Length	Pearson Correlation Sig. (2-tailed)	.385 p <.0001	.223 p <.028	.275 p <.006
Scope of Anger	Pearson Correlation Sig. (2-tailed)	.527 p <.0001	.248 p <.014	.341 p <.001
Hurt / Social Rejection	Pearson Correlation Sig. (2-tailed)	.187 p <.067	.138 p <.177	.236 p <.020
Resentment	Pearson Correlation Sig. (2-tailed)	.289 p <.004	.197 p <.055	.269 p <.008
Suspiciousness	Pearson Correlation Sig. (2-tailed)	.212 p <.038	.132 p <.201	.271 p <.008
Relational Aggression	Pearson Correlation Sig. (2-tailed)	.125 p <.224	.138 p <.178	.213 p <.037

ADS Subscale		Aggressive Attitude	Verbal Aggression	Physical Aggression
Tension Reduction	Pearson Correlation Sig. (2-tailed)	-.137 p <.181	.024 p <.814	-.052 p <.613
Revenge Motives	Pearson Correlation Sig. (2-tailed)	.454 p <.0001	.258 p <.011	.426 p <.0001
Passive Aggression	Pearson Correlation Sig. (2-tailed)	.291 p <.004	.162 p <.113	.314 p <.002
Indirect Aggression	Pearson Correlation Sig. (2-tailed)	.419 p <.0001	.355 p <.001	.481 p <.0001
ADS Total Score	Pearson Correlation Sig. (2-tailed)	.484 p <.0001	.296 p <.004	.456 p <.0001
Higher Order One	Pearson Correlation Sig. (2-tailed)	.494 p <.0001	.222 p <.029	.398 p <.0001
Higher Order Two	Pearson Correlation Sig. (2-tailed)	.397 p <.0001	.220 p <.032	.379 p <.0001
Higher Order Three	Pearson Correlation Sig. (2-tailed)	.446 p <.0001	.329 p <.001	.476 p <.0001

*ADS & Demographic Data.* Data regarding subject's Current Offense and Most Recent misconduct was submitted to a Point-biserial correlation. Results of this analysis indicate no correlation between subject's Current Offense and scores on the ADS. Results also indicate no correlation between Severity of Most Recent Misconduct and scores on the ADS. The hypothesis that ratings of Violent current offenses will positively correlate with the Revenge Motives, Episode Length, Anger in factor score, Indirect Aggression, Resentment, and rumination scales was not supported.

#### *Factor Analysis.*

*Analysis of ADS Items.* All ADS items were submitted to a Principal Axis factor analysis with an Oblimin rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy for this analysis was very good at .889. The Bartlett Test of Sphericity was significant  $X^2(2701) = 12829.478, p < .0001$ . Table 8 presents the eigenvalues, percent of variance explained, and cumulative percent of variance explained for these results. Using the eigenvalue greater than one rule, this analysis yielded a 16 factor solution accounting for 74.316% of the variance.

Table 8

*Eigenvalues, Total Variance Explained, and Cumulative Percent of Variance Explained for the Principle Axis Factoring of all ADS Items*

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	25.573	34.558	34.558	25.274	34.154	34.154	12.709
2	3.740	5.054	39.612	3.414	4.613	38.767	8.838
3	3.065	4.142	43.754	2.759	3.729	42.496	9.366
4	2.813	3.802	47.556	2.477	3.347	35.843	3.490
5	2.493	3.370	50.925	2.209	2.985	48.828	5.874
6	2.259	3.053	53.978	1.895	2.561	51.389	2.635
7	2.140	2.892	56.87	1.835	2.480	53.869	8.583
8	1.926	2.603	59.473	1.614	2.181	56.05	9.790
9	1.765	2.385	61.859	1.486	2.008	58.059	7.972
10	1.690	2.283	64.142	1.350	1.824	59.882	4.454
11	1.501	2.029	66.171	1.176	1.589	61.471	6.292
12	1.357	1.834	68.005	1.045	1.412	62.883	10.093
13	1.266	1.710	69.715	0.926	1.252	64.135	4.653
14	1.186	1.603	71.318	0.873	1.180	65.315	9.431
15	1.161	1.569	72.887	0.799	1.080	66.395	8.248
16	1.058	1.429	74.316	0.714	0.964	67.359	3.894

Table 9 presents the Oblimin rotation pattern matrix for ADS items. A value greater than .5 was considered significant. The first factor had significant loadings only from items on the Revenge Motives scale. All five items significantly loaded on this scale. One item from the Indirect aggression subscale approached significance (.415). Considering the population, revenge is most likely accomplished through indirect methods in the prison community. The second factor had significant loadings from both the Resentment and Suspiciousness subscales. All but two items from the Suspiciousness subscale significantly loaded on Factor Two. Factor Three fully captured the Hurt subscale with significant loadings of all items. Only one item from the Physical Aggression subscale loaded on the fourth factor with two additional items from this subscale approaching significance. Also, one item for the Relational Aggression subscale (.481) and one item from the Poor Self-Control (.417) subscale approached significance. Consequences for acts of physical aggression by inmates are clear and consistent. Factor Four demonstrates that inmates who display acts of physical aggression do so impulsively and for the purpose of defaming an enemy or gaining the favor of a particular group.

Factor Five represented items from the Coercion subscale with four out of five items significantly loading on this factor. Only one item from this subscale did not load on this factor. One item from the Physical Aggression subscale approached significance (.491). This finding suggests that acts or threats of physical violence are used by inmates to control or manipulate others. All three items of the Tension Reduction subscale significantly loaded on Factor Six. Factor Seven contained significant loadings of four of the seven Verbal Aggression subscale items, with an additional item approaching significance (.477). One item from the Poor Self-Control subscale also reached significance indicating the impulsive nature of verbal

outbursts. Factor Eight contained significant loading for all four items of the Scope subscale. Factor Nine contained significant loadings from the indirect Aggression subscale. Two items reached significance, with two additional items approaching significance (.481 and .495).

Two of the three items for the Relational Aggression subscale loaded on Factor Ten. Two of the three items from the Episode Length subscale reached significance, with the third item approaching significance (.381). Factor Twelve contained significant loadings for all four items from the Passive Aggression subscale. Only one item from the Anger In subscale significantly loaded on Factor Thirteen. Two additional items from this subscale approached significance (.357 and .381), while two items demonstrated no significance. This suggests that Anger In is a quality of anger expression shared by several other means of anger formulation. Considering the consequences of physically or verbally expressing anger in the prison system, such as a written reprimand, a loss of privileges, provoking enemies, the suppression of angry thoughts and feelings is most likely a common occurrence among incarcerated individuals.

Factor Fourteen contained significant loadings for all four items of the Physiological Arousal subscale. Factor Fifteen contained significant loadings for all three items of the Duration of Anger as a Problem subscale. Two items from the Rumination subscale approached significance on Factor Fifteen (.412 and .381). The only subscale that did not demonstrate a distinct factor was Poor Self-Control. One item from this subscale significantly loaded on the Verbal Aggression factor with an additional item approaching significance (.417) on the Physical Aggression factor.

The repercussions of displaying physical or verbal aggression by prison inmates should again be considered. The penalty for threatening or striking another inmate or prison staff is total

restriction, additional criminal charges, and a longer prison sentence. This suggests that acts of physical or verbal aggression in an environment where the behavioral contingencies are well established appears to be done without thinking of the consequences or by those who lack the ability to delay their actions.

Table 9

*Oblimin Rotation with Kaiser Normalization for the Pattern Matrix of all ADS Items*

ADS Items	Factor							
	1	2	3	4	5	6	7	8
RVMOT_57	<b>.540</b>	-.052	-.010	.006	.085	.127	.144	.093
RVMOT_64	<b>.700</b>	-.022	.121	-.047	.166	.045	.075	.027
RVMOT_70	<b>.800</b>	-.049	.027	.079	.069	.077	.013	.043
RVMOT_72	<b>.540</b>	.063	.030	.058	-.027	-.048	.025	.042
RVMOT_74	<b>.648</b>	-.088	.077	-.014	.083	.054	.047	.085
RSMT_47	.075	<b>.722</b>	-.082	.044	.021	.021	-.041	.015
RSMT_48	-.049	<b>.717</b>	.014	.026	-.040	.033	-.033	.022
RSMT_49	-.104	<b>.601</b>	.172	.015	-.076	.116	.094	.074
RSMT_50	-.085	<b>.573</b>	.069	.060	.092	-.080	.017	.093
SUSP_51	.018	<b>.507</b>	.079	-.016	.099	.111	-.030	.089
SUSP_52	.218	.372	.227	-.113	.059	.018	.110	-.048
SUSP_53	.142	<b>.543</b>	.066	-.060	-.028	.044	.090	.068
SUSP_54	.123	.310	.146	.020	.094	.053	-.041	-.030
HURT_04	.020	-.052	<b>.538</b>	.023	.066	-.059	.047	.124
HURT_14	.147	-.060	<b>.505</b>	.191	-.116	.137	-.001	.119
HURT_24	.009	.083	<b>.654</b>	-.039	.089	.048	.037	.151
HURT_36	.078	.082	<b>.583</b>	-.075	-.028	.003	.049	-.031
HURT_42	.034	.067	<b>.655</b>	.077	.043	.045	.038	.029
PA_34	.084	.020	-.159	.357	.007	.047	-.080	.248
PA_40	-.046	-.047	.070	.357	.491	.041	-.211	-.094
PA_43	-.065	.030	.026	<b>.715</b>	.124	-.065	.203	.033
COERC_07	.261	.095	.037	-.043	.098	-.099	-.008	.159
COERC_12	.041	.015	.040	-.246	<b>.589</b>	-.033	-.014	.129
COERC_17	-.052	-.050	.224	-.040	.462	.015	.021	-.074
COERC_23	.138	.008	-.041	-.017	<b>.700</b>	.013	.104	.074
COERC_38	.125	.063	.024	.184	<b>.785</b>	-.057	.050	.062
TENRED_56	-.100	-.051	.107	-.091	-.042	<b>.707</b>	.018	.037
TENRED_62	.020	.083	-.070	.058	.029	<b>.813</b>	-.009	-.045
TENRED_68	.110	.007	-.041	.004	-.019	<b>.796</b>	-.034	-.020
VA_15	.016	-.025	.187	-.073	.097	.008	.447	.040
VA_18	.079	.187	.117	.010	.066	.043	<b>.614</b>	-.011
VA_20	.174	.005	.184	-.056	.032	.007	<b>.570</b>	-.077
VA_27	.015	.061	.085	.226	.097	-.007	<b>.614</b>	.050
VA_28	-.020	.041	-.052	-.159	.098	.021	.270	.208
VA_29	.026	-.111	-.060	-.008	.033	.022	<b>.658</b>	.140
SCOPE_01	.031	.123	-.011	.044	.005	-.081	.049	<b>.764</b>

ADS Items	Factor							
	1	2	3	4	5	6	7	8
SCOPE_22	-.011	.090	.012	.174	.011	.008	.005	<b>.758</b>
SCOPE_33	-.017	-.092	.056	-.137	.150	.102	-.024	<b>.717</b>
SCOPE_35	.020	-.121	.121	-.098	-.069	.001	-.072	<b>.882</b>
INAGG_59	.046	.041	-.023	.044	-.033	.082	.089	.085
INAGG_63	.040	.134	.025	.080	-.085	.062	.016	.107
INAGG_66	.415	.165	.214	-.124	.096	-.006	-.074	-.004
INAGG_67	.232	.038	.167	-.126	-.162	-.109	-.062	-.033
INAGG_73	.236	.026	.137	.035	.092	-.072	.063	.036
RELAG_60	.147	.059	.222	.481	-.020	-.048	-.232	.022
RELAG_65	.035	-.050	-.011	-.079	.094	.005	.142	-.027
RELAG_69	.119	.105	.054	.293	.113	.071	-.085	-.066
EL_06	.043	.024	.096	.004	.033	.017	-.167	.132
EL_13	.110	.132	-.036	-.037	.041	-.033	.115	.106
EL_45	.183	.284	.100	.129	-.054	.055	-.022	.060
PAGG_55	.007	-.067	-.019	.058	.069	.056	.053	-.071
PAGG_58	.005	.097	.107	.081	.087	.060	.128	.144
PAGG_61	.156	-.118	-.047	.001	-.041	.054	.014	.029
PAGG_71	.010	.098	-.006	-.068	.025	.036	-.034	.011
IN_02	-.028	.071	-.077	.112	.122	.007	.003	.075
IN_03	.119	.149	-.022	.045	-.050	-.049	-.081	.085
IN_09	.114	.221	.113	.037	-.088	-.081	-.040	.013
IN_30	.035	.121	.086	-.032	-.169	.041	.068	.009
IN_32	.042	.101	-.022	-.078	.140	.057	.075	.025
PHYS_08	.101	.144	-.052	-.132	-.004	-.037	.090	.153
PHYS_10	.023	-.127	.105	.077	-.094	-.009	.083	.015
PHYS_19	.250	.103	-.069	.093	-.119	.063	.324	.086
PHYS_16	.055	.032	-.058	-.043	.183	.006	.107	.079
PHYS_41	-.062	-.061	.074	.197	.092	.011	.012	-.019
DUR_05	-.067	.095	-.017	.046	.025	-.034	-.021	.141
DUR_11	.066	.072	-.001	-.052	.202	.040	-.055	.049
DUR_31	-.038	-.004	.093	.014	.072	-.004	.058	.030
RUM_21	.057	.023	.053	.116	-.051	.039	.331	.089
RUM_25	.142	.119	.147	-.069	.088	.010	.188	.073
RUM_37	-.007	.119	.129	-.078	-.048	.015	.094	.102
RUM_44	.245	.133	.081	.068	-.036	-.023	.226	.049
PSC_26	.133	-.005	.118	.103	.012	-.077	<b>.529</b>	.051
PSC_39	.205	.028	.160	.417	-.097	-.027	.195	.062
PSC_46	.102	.028	-.008	.394	.035	.021	.503	-.044

Table 9 Cont.

ADS Items	Factor							
	9	10	11	12	13	14	15	16
RVMOT 57	-.188	.157	.122	.056	.110	.110	-.127	-.051
RVMOT 64	-.060	-.089	.016	-.020	.045	-.056	-.036	.027
RVMOT 70	-.032	-.031	.048	-.070	.077	.025	-.040	.080
RVMOT 72	-.130	-.183	.142	-.057	-.029	.172	.068	-.060
RVMOT 74	-.142	-.050	.139	-.040	.069	.044	.041	.063
RSMT 47	-.115	.006	.110	.032	.003	.002	-.041	.189
RSMT 48	-.052	-.078	.094	.000	.036	.085	-.100	.101
RSMT 49	.034	-.068	.061	.039	.013	.000	-.234	.018
RSMT 50	-.116	-.111	.023	-.153	.060	-.177	-.002	.017
SUSP 51	-.077	.049	.100	-.083	.083	.110	.160	-.094
SUSP 52	-.003	.140	-.070	-.033	.142	-.118	-.096	-.162
SUSP 53	-.045	.058	-.119	-.027	.090	.088	-.126	-.257
SUSP 54	-.098	.075	-.031	-.070	.266	.185	-.068	.018
HURT 04	-.017	.064	.106	-.024	.090	.053	-.048	-.030
HURT 14	.074	.091	.203	.002	.144	-.008	-.036	.005
HURT 24	.037	.047	-.079	-.064	.022	.069	.006	-.055
HURT 36	-.111	-.098	.059	-.005	-.081	-.033	-.010	.121
HURT 42	-.131	-.093	-.013	.011	-.066	-.063	-.013	.025
PA 34	-.068	-.059	-.270	-.024	.047	.231	-.089	.188
PA 40	-.152	-.195	-.041	.091	.055	.244	-.046	-.011
PA 43	-.098	.020	.049	-.066	.071	-.017	-.044	-.046
COERC 07	-.038	.049	-.065	-.134	.109	.245	.158	.094
COERC 12	-.078	-.181	.078	.015	.107	.078	-.121	-.007
COERC 17	-.177	-.041	.087	-.064	.207	-.036	-.096	.029
COERC 23	.153	-.003	.015	-.155	-.079	.003	-.029	-.021
COERC 38	.096	-.028	.014	.052	-.133	.003	-.073	.059
TENRED 56	-.025	.037	-.056	.000	.045	.057	-.019	-.016
TENRED 62	.008	.013	.045	-.030	-.134	-.037	-.015	.053
TENRED 68	.013	-.080	-.011	.010	.023	-.051	.062	-.047
VA 15	-.084	-.030	.016	-.055	.017	.169	.165	.120
VA 18	.058	.033	-.017	-.008	-.194	.201	-.160	.080
VA 20	.030	-.078	-.006	-.042	-.045	-.012	-.112	.237
VA 27	-.194	.012	-.095	-.088	.161	.003	.115	.122
VA 28	.002	-.390	-.077	.112	.238	-.108	-.160	.199
VA 29	-.107	-.067	.096	-.187	.080	.033	-.055	-.047
SCOPE 01	.031	.039	.015	-.046	.010	-.099	-.017	-.024
SCOPE 22	-.036	.107	.074	.057	-.065	.022	-.032	.002
SCOPE 33	-.035	-.130	.076	.047	.053	.075	-.037	.013

ADS Items	Factor							
	9	10	11	12	13	14	15	16
SCOPE 35	-.091	-.008	.011	-.035	-.012	.051	-.008	.007
INAGG 59	<b>-.784</b>	-.053	.006	-.058	.019	-.066	-.107	-.060
INAGG 63	<b>-.767</b>	.046	-.031	-.073	-.009	-.046	-.047	-.050
INAGG 66	-.165	-.026	-.053	-.156	-.131	-.057	.041	-.004
INAGG 67	<b>-.495</b>	-.079	.139	-.017	-.140	.120	-.036	.175
INAGG 73	-.481	-.031	.064	.099	-.092	.206	-.046	.067
RELAG 60	-.007	-.323	-.247	-.195	-.026	-.081	.013	.089
RELAG 65	-.101	<b>-.684</b>	.164	-.051	.033	.061	.054	-.004
RELAG 69	.050	<b>-.629</b>	.025	-.119	.009	.025	.096	-.021
EL 06	-.010	-.067	<b>.763</b>	-.043	.020	.049	-.049	.035
EL 13	-.040	-.145	<b>.707</b>	.017	-.034	.007	-.072	-.020
EL 45	.005	.183	.381	-.158	.039	.005	-.048	.117
PAGG 55	-.097	.022	.134	<b>-.640</b>	.139	.017	-.123	-.045
PAGG 58	.090	-.039	-.043	<b>-.547</b>	.005	-.045	-.023	.069
PAGG 61	-.163	.032	-.068	<b>-.532</b>	-.073	.040	-.300	.188
PAGG 71	-.123	-.372	.063	<b>-.552</b>	-.182	.144	-.030	-.081
IN 02	-.080	.009	.221	-.110	.236	.046	-.051	.171
IN 03	.058	-.093	.075	.030	<b>.508</b>	.044	-.194	-.068
IN 09	.074	-.029	-.039	-.049	.381	.095	-.220	-.134
IN 30	.025	-.020	.040	-.342	.357	.212	.039	.147
IN 32	-.174	.095	.188	-.127	.257	.044	.086	.196
PHYS 08	-.003	-.010	.013	-.054	.048	<b>.615</b>	.037	.093
PHYS 10	.089	.049	.205	-.088	.152	<b>.535</b>	-.125	.138
PHYS 19	.063	-.163	-.006	-.021	-.014	.344	-.182	.157
PHYS 16	-.058	-.064	.064	-.075	-.078	<b>.691</b>	.004	.015
PHYS 41	-.105	-.075	.034	-.029	.138	<b>.574</b>	-.209	-.045
DUR 05	-.061	-.001	.091	-.134	.036	-.063	<b>-.633</b>	.038
DUR 11	-.068	.037	.012	-.037	.060	.031	<b>-.697</b>	.055
DUR 31	-.146	.106	.072	-.123	.059	.128	<b>-.626</b>	-.033
RUM 21	-.046	-.010	.110	-.108	.357	.026	-.045	.261
RUM 25	.163	.097	.045	-.068	-.092	.153	-.175	.412
RUM 37	.043	-.088	.156	-.236	-.112	.191	-.165	.381
RUM 44	.033	-.162	.083	-.141	.194	.190	-.044	.091
PSC 26	.018	-.110	.113	-.146	-.091	.197	-.081	-.221
PSC 39	.009	-.203	-.035	-.120	-.082	.346	-.072	-.102
PSC 46	-.177	-.106	.103	-.004	-.024	.109	-.191	-.115

Note: Numbers next to the subscale represent test item number. RVMOT=Revenge Motives, RSMT=Resentment, SUSP=Suspiciousness, PA=Physical Aggression, COERC=Coercion, TENRED=Tension Reduction, VA=Verbal Aggression, INAGG=Indirect Aggression, EL=Episode Length, PAGG=Passive Aggression, IN=Anger In, PHYS=Physiological Arousal, DUR=Duration of Anger Problem, RUM=Rumination, PSC=Poor Self Control.

*Analysis of ADS Subscales.* Linear t-scores of the ADS subscales were submitted to a Principal Axis factor analysis with an Oblimin rotation. The Kaiser-Meyer-Olkin measure of sampling adequacy for this analysis was excellent at .931. The Bartlett Test of Sphericity was significant  $X^2(153) = 21875.447, p < .0001$ . Table 10 presents the eigenvalues, percent of variance explained, and cumulative percent of variance explained for these results. Using the eigenvalue greater than one rule, this analysis yielded a three-factor solution accounting for 62.636% of the variance.

Table 10

*Eigenvalues, Total Variance Explained, and Cumulative Percent of Variance Explained for the Principal Axis Factoring of ADS Subscales*

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total
1	8.798	48.879	48.879	8.398	46.658	46.658	7.995
2	1.412	7.844	56.723	0.991	5.508	52.166	4.026
3	1.064	5.913	62.636	0.573	3.183	55.35	3.18

Table 11 presents the Oblimin rotation pattern matrix for ADS subscales. A value greater than .5 was considered significant. All but three of the ADS subscales significantly loaded on one of three factors. The Hurt subscale approached significance (.467) on the first factor. The Tension Reduction and Indirect Aggression subscales failed to reach significance. The first factor contained significant loadings from the following subscales; Anger In, Physiological Arousal, Verbal Aggression, Rumination, Poor Self-Control, Coercion, Duration, Episode Length, Scope, Revenge Motives, and Passive Aggression. This factor was labeled Anger In/Verbal Expression. The second factor had significant loadings on the Physical Aggression and Relational Aggression subscales with the Poor Self-Control subscale approaching significance (.422). This factor was labeled Physical Expression. The third factor had significant loadings from the Resentment and Suspiciousness subscales. This factor was labeled Hostile Attitudes.

Table 11

*Oblimin Rotation for Pattern Matrix for ADS subscales*

ADS Subscale	Factor		
	1	2	3
Anger In	<u>.648</u>	-.048	.199
Physiological Arousal	<u>.862</u>	.134	-.244
Physical Aggression	.185	<u>.537</u>	-.050
Verbal Aggression	<u>.778</u>	.099	-.143
Rumination	<u>.957</u>	-.049	-.081
Poor Self-Control	<u>.619</u>	.422	-.143
Coercion	<u>.507</u>	.226	.065
Duration of Anger Problem	<u>.654</u>	-.040	.117
Episode Length	<u>.674</u>	-.117	.226
Scope	<u>.593</u>	-.073	.100
Hurt /Social Rejection	.467	.083	.301
Resentment	.375	.008	<u>.521</u>
Suspiciousness	.364	-.012	<u>.570</u>
Relational Aggression	-.086	<u>.821</u>	.131
Tension Reduction	-.015	.028	.196
Revenge Motives	<u>.567</u>	.251	.168
Passive Aggression	<u>.529</u>	.263	.090
Indirect Aggression	.369	.261	.326

Note: Factor 1 : Anger in / Verbal expression.

Factor 2: Physical Expression

Factor 3: Hostile Attitudes

## Chapter Four

### Discussion

#### *Discussion of the Results*

The results of this study support the ADS as a valid assessment instrument. Alpha coefficients calculated for the entire scale and each higher-order factor score indicates good reliability. Positive correlations were demonstrated between the ADS subscales and the Aggression subscale of the PAI. Only those subscales unique to the ADS (Tension Reduction, Relational Aggression, and Suspicion) demonstrated no correlation. This finding is similar to previous research (DiGiuseppe & Trafate, 2002) correlating the ADS with existing anger-assessment instruments, such as the STAXI and the Anger Questionnaire. In this study the authors also found no correlations between the Tension Reduction subscale and the subscales of the STAXI and AQ.

DiGiuseppe and Trafate (2002) posit that anger is a multidimensional construct with contextual, cognitive, motivational, emotional, and behavioral components and designed the ADS to assess these aspects. The PAI Aggression Scale measures only Verbal Aggression, Physical Aggression, and Aggressive Attitudes. Moderate and no correlations were detected between the PAI and some of the ADS subscales because the PAI does not render an exhaustive assessment of all anger dimensions. Future research correlating the ADS with personality measures will most likely obtain similar results as few instruments possess the ability to assess the true complexity of anger expression. As new personality assessment instruments emerge and existing ones are revised, the inclusion of a multidimensional anger scale should be included.

The hypotheses that correlations would be found between the ADS and inmate's current offense was not supported. This hypothesis was presented with the assumption that violent offenders would demonstrate a discernable anger profile that could be detected by the ADS. Previous research has demonstrated the ability of the ADS to distinguish between prison inmates and a normative sample, as well as sexual offenders and a normative sample (DiGiuseppe & Trafate, 2002). The current finding is due to the inability to accurately classify inmates according to the true nature of their crimes. Inmates who were classified as nonviolent, nonsexual offenders could have been guilty of these crimes without having been adjudicated. For example, a murderer or rapist could have been convicted of forgery and classified as a nonviolent offender. Future attempts at correlating the ADS with behavioral history should strongly consider the accuracy of the data.

Previous research explored the factor structure of the ADS used the Principal Components Analysis method with a Varimax rotation (DiGiuseppe, Eckhardt, Tafate, Robin, M. & Kopec, 1998). The present study used a Principal Axis factoring method. The Principal Axis Factoring method includes an error term for each item in the analysis, whereas the principal components method does not. This increases the accuracy of the extraction but does result in a slight lowering of the percent of variance explained by each factor (Gorsuch, 1983). Also, all analyses employed the Oblimin rotation because previous research (DiGiuseppe & Tafate, 2002) indicated that all of the factors are correlated.

Results of the factor analysis of the ADS items support the structure of the instrument. A 16-factor solution was rendered that accounted for 74.316% of the variance. Forcing an 18-factor solution with two additional factors approaching significance (.948 and .929) accounts for

76.854% of the variance. This finding is similar to the exploratory factor analysis in the ADS manual, which rendered a 15-factor solution that accounted for 66.9% of the variance (DiGiuseppe & Trafate, 2002). The authors report “Given the number of scales in the ADS and the power of factor analytic techniques to identify so many factors from 74 items, this represents a fairly good fit of the model suggested by the ADS scale structure. The best test of the factor structure of the ADS would be an extraction of 18 factors, one to match each hypothesized scale in the ADS” (p.64). However, a 17-factor solution represents a better fit for the present study as the Resentment and Suspiciousness subscales combined to form a single factor. More importantly, factor analysis of the ADS subscales indicated these two subscales combined to form a single factor labeled “Hostile Attitudes.”

Items from the Poor Self-Control subscale failed to produce a specific factor; however, several items loaded significantly on the Verbal and Physical Aggression factors. This finding is not surprising, as several recent studies concur on the complex relationship between impulsivity and aggression. One such study examined the relationship between individual differences and workplace aggression. Douglas and Martinko (2001) found no direct relationship between low self-control and workplace aggression; however, an interaction was found indicating the lower the self-control, the stronger the relationship between trait anger and the incidence of workplace aggression. It appears that impulsivity does not constitute a separate means of anger expression but is related to aggression by interacting with other factors.

Factor analysis of the ADS subscales yielded a three-factor solution accounting for 62.63% of the variance. The only subscale that failed to load on any factor was the Tension Reduction subscale. It should also be noted that this subscale did not correlate with the

aggression subscale of the PAI. The Tension Reduction Scale failed to load significantly on any of the higher order factors in the ADS manual, which concurs that this aspect of anger may not be part of the normal anger. DiGiuseppe & Trafate (2002) posit that such motivations lead angry people to engage in risky behavior, such as reckless driving or substance abuse, to alleviate the anger they experience. The authors chose to retain the Tension Reduction Scale as an experimental scale with the hope that future research in risky behaviors will indicate that it is an important component of anger for those clinical cases that engage in high-risk or dangerous behavior.

The three higher-order factors extracted from this data closely resemble but contain significant differences from the three higher order-factors in the ADS manual. These differences may be the result of the population sampled and can only be generalized to a prison sample. All subscales loaded exclusively on each of the three factors. The first factor was labeled Anger In/Verbal Expression. Unlike the results in the ADS manual, this factor provides a distinction between verbal and physical aggression. Subscales that substantially loaded on this factor included Anger In, Physiological Arousal, Verbal Aggression, Rumination, Duration, Episode Length, and Poor Self Control. This represents the most common means of anger expression in the prison system. Inmates who score high on this factor have had a long history of anger problems and spend a great deal of time “thinking” about what makes them angry and “feeling” the physiological effects of their anger. This anger may tend to build and result in a verbal tirade or threats of harm.

The second factor, labeled Physical Expression, contained significant loadings from the Physical Aggression and Relational Aggression subscales with the Poor Self-Control subscale

approaching significance (.422). The ADS manual also found that all of the items for both the Physical Aggression and the Relational Aggression scales loaded heavily on only one factor when the items were submitted to a factor analysis. This factor represents the difference between those who get angry and threaten violence, and those who are willing to follow through and act upon the threat. Inmates who score high on this factor most likely possess a Narcissistic view of themselves and are willing to use physical violence to protect their self-image. This data also suggests that the use of violence is not only in response to an ego threat, but also used to ruin the reputation of the transgressor.

The third factor contained significant loadings from the Resentment and Suspiciousness subscales. This factor was labeled Hostile Attitudes. This factor best represents the Cognitive-Behavioral conceptualization of problematic anger which, posits that anger-prone individuals possess a “hostile attribution bias.” Similar to Beck’s (1976) cognitive triad, where depressed individuals appraise themselves, the future, and the world as negatively valenced, angry individuals misinterpret ambiguous situations as anger provoking. These individuals are often described as quick tempered, easily provoked, and sensitive to criticism. Studies mentioned previously (e.g. Bickett, Milich, & Brown, 1996; Epps & Kendall, 1995; and Courtney & Cohen, 1996) support the conceptualization of anger-prone individuals as possessing a schema, or cognitive framework, that skews the interpretation of events as hostile or anger-provoking. In fact, traditional and modern CBT treatment approaches have made the identification and restructuring of these biases the central focus of therapy (i.e. Ellis & Tafrate, 1999; Navaco, 1975).

*Limitations of the Study.*

Limitations of this study are similar to other studies on prison populations. First, results of this study can only be generalized to a male inmate population. In several recent studies, women were found to experience and express anger differently than men (Kinney, Smith & Donzella, 2001). Continued research would be needed to establish correlations between ADS scores and history of violence in the general population to include female subjects. Second, data gathered in this population may include artifacts of inmates' incarceration. For example, many inmates are required to complete an "anger management" course of therapy. These inmates could have responded to the ADS in a manner reflecting the goals of the anger-management program. Also, a degree of paranoia exists among most inmates regarding what they disclose. Inmates are aware that psychological assessments administered by the prison staff are traditionally used to determine program requirements or as evidence in court. The consent form clearly stated that all responses will be confidential; however, many inmates may have believed that the results would be used by the judicial system to lengthen their incarceration, thus responding less truthfully.

It should be noted that only 4% of the current sample demonstrated a clinically significant anger problem (t-score >70). This is in contrast to previous research suggesting the incidence rate of anger problems in the general population to be 8% (DiGiuseppe & Tafrate, 2002). This also suggests that the current subjects were intentionally presenting a desirable profile. The ADS does not include a lie scale, as the authors report that the instrument is no more susceptible to deception than other frequently used psychological measures of disturbed emotions. Future research should consider using an additional measure, such as the Paulhus Deceptions Scale (Paulhus, 1998), in conjunction with the ADS to control for deception.

Finally, this data did not include length of incarceration. The amount of time spent in an environment where traditional means of anger expression are suppressed undoubtedly impacts the cognitive and behavioral experience of anger. Future research measuring anger in a prison population using the ADS should consider the effects of length, as well as quality of time incarcerated to include type of housing restrictions and institutional adjustment. Estimated time of release and convictions without the possibility of parole should also be considered as variables affecting anger expression.

### *Implications for Clinical Practice and Future Research*

The three higher-order factors found in this study suggest the existence of three unique styles of anger expression in prison inmates. Continued research using the ADS in a prison population is needed to support these results. Should these results be confirmed, the ADS can be used as a valuable screening and assessment instrument in the forensic setting. Future revisions of the ADS can include a “Forensic Form” of the ADS to integrate the three higher-order factors found in this study. Screening instruments used in the forensic setting should be short and easy to read. The proposed ADS-Forensic Form can exclude the Tension Reduction subscale and rephrase some of the items to reflect the prison setting. For example, item 28 can be changed from “I do things like slam doors and stomp around the house when I get angry,” to “I do things like slam my bunk and stomp around my cell when I get angry.” Item 49 can be changed from “I think I have had a harder life than most people,” to “I think I have had a harder life than most inmates.”

Forensic psychologists can utilize the anger profiles of the ADS to predict physically aggressive behavior, guide treatment planning, and provide relevant inclusion criteria for program placement. The results of this study suggest that those who score high on the first factor, Anger-In /Verbal Expression, experience and express anger differently than those who score high on the second factor, Physical Expression. Specific interventions can be implemented for those who “think and feel” about their anger and modified for those who “do something” with their anger. Those who score high on the Anger-In /Verbal Expression factor may benefit from specific skills training, such as relaxation, self monitoring, and self instruction. Those who score high on the Physical Expression factor may benefit from strategies such as problem solving, negotiation training, cognitive restructuring, arousal management, and exposure.

Research on the second higher-order factor may also reveal that high scores on this factor may be useful for predicting future acts of violence. As discussed previously, this factor appears to discern those inmates who may be prone to violence. Future revisions can include a “Violence Risk Indicator” subscale incorporating this factor. The ability to accurately predict violent behavior has eluded the scientific community due to the fact that violent behavior is a relatively rare occurrence in the general population. Thus, continued research is needed on previously identified violent offenders to examine their cognitive and behavioral commonalities. The present study provides a firm basis for this research by providing empirical support for the delineation of physically aggressive inmates.

The third factor, “Hostile Attitudes,” is comprised of the Resentment and Suspiciousness subscales. A reasonable amount of suspiciousness is to be expected for those residing among convicted criminals. Inmates who score high on this factor may tend to ruminate on past failures,

arguments and perceived injustices, especially if they feel their incarceration was unfair or overly punitive. These inmates will use past events to make biased predictions and view ambiguous situations as being anger-provoking. As this perceptual bias will most likely be pervasive and integrated into their personalities, a schema focused approach, outlined by Young (1994), may prove most effective. Schema-focused therapy has been successfully applied to characterological disorders, as it addresses the cognitive distortions and maladaptive behavior patterns that directly reinforce or perpetuate a schema.

The treatment of dysfunctional anger continues to be perplexing in the clinical setting for several reasons. First, most health care providers mandate a diagnosis and treatment plan be submitted before therapeutic services are provided. As anger is not recognized as a primary diagnosis, an alternative diagnosis and treatment plan is rendered. Depression or anxiety become the focus of clinical attention and anger is treated as a symptom of the larger problem. Second, a lack of consensus exists among mental health professionals as to the most effective treatment strategies for anger. Many clinicians continue to use cathartic and expressive techniques despite empirical evidence to the contrary (Lewis & Butcher, 1994). Finally, few clinicians who regularly treat angry individuals are aware of the complexity of the construct. Until recently, anger was conceptualized as a bidimensional construct; consisting of either anger-in or anger-out. Prior to the ADS, no other assessment tool captured the profoundness of anger.

Knowing an individual experiences problematic anger does little for the practitioner unless that information also provides recommendations for treating the anger. In most cases of dysfunctional anger, insight rarely leads to change. Moreover, most anger-prone individuals who are either ordered or self-referred to therapy are aware a problem exists but seldom acknowledge

the need to change or adhere to treatment recommendations. The ADS provides a crucial first step in the treatment of anger by rendering a multidimensional assessment of the specific domains associated with anger and aggression. By eliciting the domains of provocations, arousal, cognitions, motives, and behaviors, the ADS provides the clinician with a complete depiction of the individual's anger problem, as well as recommendations for treating each specific type of anger.

Research on the ADS continues to support the validity of the instrument, although several questions remain in need of attention. Do children feel and express anger similar to adults? Can the ADS be modified to assess dysfunctional anger in children? Can the factor structure of the ADS be supported in different languages and across cultures? Continued research addressing these questions will support the hypothesis that anger is a distinct emotional construct with measurable diagnostic criteria. This research is paramount if anger is to be included in future versions of the DSM and empirically validated protocols for treating specific subtypes of anger are to be established.

## Chapter Five

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Chapter Five

Appendix A

Gravity Scores

Felony I.....7

Felony II.....6

Felon III.....4

Felonies not classified by the General Assembly.....4

Misdemeanor I.....3

Misdemeanor II.....2

Misdemeanor III.....1

Misdemeanors and Summary Offenses not sub-classified by the General Assembly.....1

Immigration and Neutralization service Convictions.....4

Motor Vehicle violations which do not involve injury or death.....1

Violation of Probation or Violation of Parole.....3

## Appendix B

### Custody Levels

#### **Custody Level-1 (Community Corrections)**

Custody level 1 is assigned to those inmates who have met the requirements and have been approved for pre-release programming as identified in DC-ADM-805, Policy and Procedures for Obtaining Pre-Release Transfer. The inmates considered for this custody level are those who: present the least risk to the community according to their level and type of criminal behavior; have stable institutional adjustments characterized by a lack of non-compliant, assaultive behavior, and, who would benefit most from involvement in pre-release programs. They should also be inmates who the staff feel can function with a high degree of independence in community based programs.

#### **Custody Level-2 (Minium)**

Custody level 2 is assigned to those inmates who demonstrate patterns of non-aggressive behavior. Upon further staff screening they are also candidates who may be permitted to leave the institution perimeter for work and program assignments which are on institutional property or at sites under the control of the Department of Corrections. Within the institutional perimeter they are generally permitted unrestricted movement in designated areas. They require only intermittent, direct observation by staff.

#### **Custody Level-3 (Medium)**

Custody level 3 is assigned to those inmates who are permitted reasonable freedom of movement within designated areas of the institution perimeter. They exhibit behavior that is generally non-assaultive, but may cause risk to the public should they be permitted outside of the

institution. They require frequent, direct supervision. They are permitted access to most jobs and programs within the institution. Parole violators are generally assigned to Level 3.

#### **Custody Level-4 (Close)**

Custody level 4 is assigned to those inmates who require a high degree of supervision. They are individuals who, through a demonstrated pattern of maladjustive behavior, need continuous direct and indirect supervision. Their behavior is such that they may be occasionally assaultive within the institutional perimeter and are viewed as a definite risk to the public outside of the perimeter. They are permitted access to selected programs and jobs within the perimeter and are under constant observation and escort when moving throughout the institution. Newly received inmates who are unclassified are assigned to Level 4.

#### **Custody Level-5 (Maximum)**

Custody level 5 is assigned to those inmates who have demonstrated, through a pattern of maladjustive, assaultive behavior, or through a need for protection, that they require a high degree of structure. They require continual direct supervision by staff. They are afforded the opportunity to participate only in selected programs in their cell. They are inmates who would either pose a high risk to others or may be at risk themselves if permitted access to general population areas. When out of their cells, they are always under escort. Level 5 is the most restrictive level and inmates assigned to this level should be housed in units with a security level rating of 5.

## Appendix C

### Misconduct Violations

#### **Class One Charges**

1A- Murder, Rape, Arson, Riot, Escape, Robbery, Burglary, Kidnaping, Unlawful Restraint, Aggravated Assault, Voluntary Manslaughter, Extortion, Involuntary Deviate Sexual Intercourse.

1B- Fighting, Threatening another person, Engaging in Sexual Acts, Wearing a disguise, Possession of a dangerous or controlled substance, Possession of contraband (money, drug paraphernalia, implements of escape), Refusing to Obey an Order.

1C- Tattooing, Indecent Exposure, Gambling, Violation of Visiting Regulations, Destroying or Damaging Property, Refusing to Work or Attend Mandatory Programs, Unauthorized use of Mail or Telephone.

#### **Class Two Charges**

Body Punching or Horseplay, Taking Unauthorized Food from the Dining Room, Unexcused Absence from Work, Smoking Where Prohibited.