Exploratory Study of Anger and Behavior in an Incarcerated Offender Population Utilizing the Mahan and DiTomasso Anger Scale

Robert John Marsh, Jr.
Philadelphia College of Osteopathic Medicine, robertma@pcom.edu

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AN EXPLORATORY STUDY OF ANGER AND BEHAVIOR IN AN INCARCERATED OFFENDER POPULATION UTILIZING THE MAHAN AND DITOMASSO ANGER SCALE

By Robert John Marsh, Jr.
Submitted in Partial Fulfillment of the Requirements of the Degree of Doctor of Psychology
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PHILADELPHIA COLLEGE OF OSTEOPATHIC MEDICINE
DEPARTMENT OF PSYCHOLOGY

Dissertation Approval

This is to certify that the thesis presented to us by Robert Marsh, Jr. on the 21st day of June, 2005, 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.

Committee Members' Signatures:

Robert A. DiTomasso, Ph.D., ABPP, Chairperson

Lance Couturier, Ph.D.

Christopher Royer, Psy.D.

Robert A. DiTomasso, Ph.D., ABPP, Chair, Department of Psychology
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Abstract

The present study proposed to advance the treatment and assessment of anger disorders by exploring the properties of the Mahan and DiTomasso Anger Scale (MAD-AS). Previous research of the reliability, validity, and factor structure of the MAD-AS was conducted with inpatient (Mahan, 2001) and outpatient participants (Beardmore, 2003). In the present study a psychometric investigation was undertaken utilizing 300 male incarcerated offenders.

The MAD-AS correlated positively with the presence of antisocial and borderline personality disorders and with violent offenses. Those inmates with a history of violent offenses scored significantly higher than those convicted of nonviolent offenses on the MAD-AS. The MAD-AS possessed sound psychometric properties in terms of reliability and validity. Results indicated the MAD-AS reflects the multidimensional quality of anger including its cognitive, physiological, and behavioral components.

In clinical forensic work the MAD-AS may assist in identifying dynamic criminogenic needs, selecting interventions to address those needs, monitoring treatment outcomes, and assessing risk factors for recidivism.
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CHAPTER 1

Introduction

Statement of the Problem

Anger is a frequent, yet neglected, emotional experience that plays a significant role in everyday life. Based on a reference list spanning 75 years, Averill (1983) stated, “Depending on how records are kept, most people report becoming mild to moderately angry anywhere from several times a day to several times a week” (p.1146). Sometimes anger is ephemeral, moderate in intensity, and perhaps, even helpful (Kassinove & Sukhodolsky, 1995). Anger can be productive and assist individuals in coping with ordinary demands and stresses of life. However, according to the Yerkes-Dodson Law (1908), individuals are more likely to cope effectively with the stressors of daily life when angry arousal is low to moderate rather than when it is extreme.

If extreme, the arousal of anger loses its beneficial effect and can become persistent, severe, and highly disruptive. Anger can become highly problematic when it is excessive in frequency and duration, and when it is disproportionate to the event or the person that triggered it (Kassinove & Tafrate, 2002).
Overt anger can be associated with negative evaluations by others, by a negative self-concept, by low self-esteem, by interpersonal and family conflict, by verbal and physical assault, by property destruction, and by occupational maladjustment (Deffenbacher, 1992). Suppressed anger is related to a number of pernicious and deleterious medical conditions, including essential hypertension, coronary artery disease, and cancer (Kassinove & Sukhodolsky, 1995).

Anger, which is sometimes referred to as "the forgotten emotion", has been researched less than other emotional problems such as anxiety and depression. Today, anger is beginning to receive greater attention in applied psychology. Anger research, however, has often suffered from theoretical, conceptual, and measurement confusion (Deffenbacher, et al., 1996). For example, too often the overlapping constructs of anger, hostility, and aggression have been blurred and used interchangeably. Likewise, anger as an emotional, experiential construct has not been separated from the behaviors or modes through which anger is expressed.

Another major problem is evident in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition Text Revision (American Psychiatric Association, 2000), in which
there is an absence of diagnostic categories with anger as the central defining feature. This is the most obvious indication that contemporary psychology and psychiatry have neglected anger as a clinically relevant problem (Eckhardt & Deffenbacher, 1995).

Anger Defined

Anger is a frequent yet neglected experience that deserves more attention. It is an emotional state of arousal and irritability with specific physiological changes. It labels a person's primarily learned, internal experiences including thoughts, fantasies and images, verbal behaviors, and bodily responses to the aversive stimuli; these vary in intensity, frequency and duration (Kassinove & Tafrate, 2002).

Kassinove and Sukhodolsky (1995) define anger as a negative, phenomenological experience with specific cognitive distortions, physiological changes, and subjective labeling. The display of anger is socially constructed by cultures and subcultures and is maintained through reinforcement. Anger refers basically to a learned passion or emotion that is privately experienced and publicly shown by a person who lives in a certain culture (Kassinove & Tafrate, 2002).
People express and communicate their anger experiences differently, and therefore no single behavior pattern is characteristic of anger. According to Constructivists, anger is a socially-constructed, reinforced behavioral script that individuals learn to play. It consists of private thoughts, physiological reactions, and observable verbal and motor behaviors (Averill, 1982).

Anger is associated with well-recognized cognitive or perceptual deficiencies and distortions (Beck, 1999), which are reflected as inflammatory or demeaning thoughts about the person or situation. These distortions may lead to anger, arousal, expressive motor behaviors, and verbal anger, which label the specificity and intensity of our subjective feeling (Kassinove & Tafrate, 2002).

Kassinove and Tafrate (2002) report that anger episodes commence with personally relevant triggers that lead to emotional arousal. The initial trigger and the subsequent arousal are interpreted in a way, based on prior learning history, which leads to increased arousal and agitation labeled as anger. This arousal can be suppressed, leading to ruminative seething, or can be expressed outwardly in the form of verbal or motor action.

All of these definitions of anger share common core characteristics: physiological arousal and cognitions
leading to the subjective labeling of the emotion as anger. In most psychometric measures of anger and hostility, angry feelings that vary in intensity are confounded with the mode and direction of anger expression (Spielberger, et al., 1995). It is a recognized fact that physiological arousal, cognitions, and behaviors influence and interact with one another, appearing in a simultaneous manner which the individual experiences as anger. Anger, therefore, is composed of this whole constellation.

**Physiological Considerations**

The James - Lange theory of emotions (Lange & James, 1922) posited the idea that there are specific physiological responses to aversive stimuli and that feelings are actually perceptions of the body's reaction. From this standpoint, increased heart rate and perspiration, tightness in the stomach, and changes in facial muscles occur first, and then the individual feels angry. The emotion of anger, therefore, would follow from the specific bodily reactions.

The Cannon - Bard theory of emotions (1929) disputed this chain of events. They believed that the body does not have physiological reactions specific to each emotion. They believed these physiological reactions accompany a number of feelings including anger, fear, guilt, and love.
They also doubted that there were specific facial muscle changes for each emotion. They posited the theory that physiological arousal of the body is general in nature, and that this general arousal and the emotion occur simultaneously.

Individuals appear to have physiological arousal reactions, and they interpret these feelings and changes in musculature, they label the feelings, and then behave in accordance with their interpretations. The role of appraisal is discussed next.

Cognitions/Appraisals

Cognitive theories of anger highlight the idea that anger does not occur without cognitive activity, appraisal of internal or external stimuli, or triggers that set the stage for an anger response (Kassinove & Tafrate, 2002). Appraisals, memories, perceptions, and interpretations of events impact an individual's level of anger (Beck, 1999; Novaco, 1975). In Schacter and Singer's (1962) two-factor theory, triggers may lead only to a general sense of arousal; it takes an appraisal or interpretation to transform this arousal into a negative or positive emotion.

Beck (1976) has pointed out the role of distortions in cognitions or thinking about life events (automatic thoughts, assumptions, and core beliefs) that lead to
emotions. Ellis and Tafrate (1997) indicate that irrational beliefs, ones that minimize or maximize the triggers or activating events, lead to emotional consequences. Most current conceptualizations of anger regard cognitions as closely associated with affective, physiological, and behavioral aspects of anger (Kassinove & Sukhodolsky, 1995).

Hostility

Hostility is defined as a complex set of attitudes or semi-permanent thoughts about a person, an institution or a group (Kassinove & Tafrate, 2002). Hostility and enduring negative attitudes or thoughts set the stage and predispose people to experience anger and to motivate aggressive behaviors. This attitude entails disliking others and evaluating them negatively and involves potential injury to another person (Kassinove & Sukhodolsky 1995). Hostility can be thought of as a cognitive filter, through which all information is processed (Simourd & Mamuza, 2002).

For example, Dodge, Price, Bachorowski, and Newman (1990) discovered that most aggressive children are actually frightened of being attacked. These children were characterized as being emotional, possessing a predilection to believe others are threatening them. These children had a defensive attributional style, a tendency to interpret
other children's behavior as intentionally meaning to harm them (Dodge & Coie, 1987). Due to this fear of harm, hostile children are more liable to consider, and select aggressive responses to situations that other children typically would ignore. Dodge and Frame (1982), based on studies of schoolyard aggressiveness, proposed a social-information processing model of aggressive behavior whereby children who view the world in hostile terms are most liable to lash out first (Dodge & Frame, 1982).

Additionally, older children and adolescents who are incarcerated for violence often manifest this same pattern. They act aggressively in response to their perceived threats from others (Dodge et al., 1990).

**Aggression**

Aggression is a response, a motor behavior, which delivers noxious stimuli to another person and involves potential injury to another person (Kassinove & Sukhodolsky, 1995). Aggression is intentionally and purposefully malicious behavior designed to injure or hurt another. It is not the same as anger, an emotion that is often, but not always, associated with aggression (Kenrick, Neuberg, & Cialdini, 1999). Kassinove and Tafrate (2002) refer to aggression as a physical action intended to hurt or harm another person, or sometimes intended to destroy
property. It is punitive and destructive. The intent of the individual is essential and primary to the definition and does not include unintentional or accidental injury (Spielberger, Reheiser, & Sydeman, 1995).

If motor behavior is intentional and is directed to harm the source of the perceived threat, it is labeled direct aggression (Kassinove & Tafrate, 2002). Behavior not aimed directly at the target is labeled indirect aggression. Kassinove and Tafrate (2002) indicate that aggressive behavior can emerge from anger and/or from hostility, or it can be a planned and calculated means to achieve a desired goal with little or no anger at all. Hostile or emotional aggression refers to unplanned and impulsive behavior motivated by anger (Kassinove & Tafrate, 2002; Spielberger, Reheiser, & Sydeman, 1995). Instrumental aggression is behavior directed toward removing or circumventing an obstacle that stands between an aggressor and a goal, when such behavior is not motivated by hostility or angry feelings (Kassinove & Tafrate, 2002; Spielberger, Reheiser, & Sydeman, 1995). It will be beneficial to consider and analyze Freud’s view.

Aggression Instincts

After observing the carnage of World War I, Freud (1924, 1927) added the death instinct to his already
posited life instinct. Psychologists already believed and accepted the fact that living organisms strive toward drive reduction; that is, when there is an irritation the individual tries to reduce it (Kenrick, Neuberg, & Cialdini, 1999). If people are happiest when nothing is irritating them, then the ultimate drive reduction would be death. This, however, would be contradictory to the life instinct. As a result, Freud postulated the theory that rather than killing themselves, individuals redirect this self-destructive instinct toward the destruction of others.

The basic problem is that Freud’s theory is totally contrary to the most powerful theory in life sciences, Darwin’s theory of evolution by natural selection (Kenrick, Neuberg, & Cialdini, 1999). According to this theory, the death instinct could never evolve. Organisms with a modicum of restraint to resist acting self-destructively would survive more so than those determined to exterminate themselves.

Some evolutionary theorists have speculated an aggressive instinct could have evolved through natural selection, given the obvious pay-offs of aggression (Kenrick, Neuberg, Cialdini, 1999). Animals that fought for their mates and their territories fared better than those that ran (Lorenz, 1966). Lorenz (1966) believed that
humans, like animals, have an urge to attack and that these urges, like any other desire, build up until they are discharged. He believed that an animal or a human had to discharge this pent up emotion in some way, even if it meant displacement or an indirect expression from the person or animal who elicited the urge in order to achieve catharsis.

Evolutionary psychologists often assumed that environment would have no effect on this drive. However, humans are not programmed to be blindly aggressive. Unless the drive is triggered, humans will not be inclined to act aggressively (Gilbert, 1994; Tinbergen, 1968). Modern theorists believe aggression is motivated by adaptive goals that are designed to serve survival and reproductive functions (Kenrick, Neuberg, & Cialdini, 1999). What about the relationship between frustration and aggression?

Frustration and Aggression

Some theories have proposed that aggression is designed to remove obstacles to the satisfaction of other drives (McDougall, 1908). This was a forerunner to the frustration - aggression hypothesis that posited the theory that aggression is an automatic response to any blocking of goal directed behavior (Kenrick, Neuberg, & Cialdini,
Dollard (1939) argued that aggression is always a consequence of frustration. Social psychologists have raised a number of objections to this theory. First, instrumental aggression does not seem to follow any particular frustration (Berkowitz, 1989, 1993a). For example, if a hit man accepts $5,000 to murder an individual he has never met, there is no frustration involved. Second, not all frustration leads to aggressive behavior.

Although these problems are associated with the original hypothesis, rejecting the idea in its totality would be imprudent (Kenrick, Neuberg, & Cialdini, 1999). Berkowitz (1989, 1993b) proposed a reformulated frustration-aggression hypothesis that posited the theory that frustration is related only to emotional or hostile aggression that is anger driven and not to instrumental aggression. He further proposed that frustration leads to aggression only to the extent that it generates negative or unpleasant feelings. These feelings could include heat, pain, or psychological discomfort; the unpleasant feeling need not be frustration. Unpleasant feelings, however, may or may not lead to aggressive behavior, depending on a number of other factors.
Zillmann (1983, 1994) went one step further and posited the notion that any internal arousal state can enhance aggressive activity. In his Excitation Transfer Theory, the emotional reaction of anger has the same symptoms that one feels during any arousing emotional state, including increased heart rate, sweaty palms, and elevated blood pressure. If a person is emotionally aroused and later annoyed, the residual arousal may be mistaken for anger (Kenrick, Neuberg, & Cialdini, 1999).

**AHA! Syndrome**

In 1985 Spielberger and colleagues (Spielberger et al., 1985) significantly improved the conceptualization definitions and operational procedures used to assess the constructs of anger, hostility, and aggression. Collectively, the "AHA! Syndrome" proposed the following working definitions of the constructs:

Anger usually refers to an emotional state that consists of feelings that vary in intensity, from mild irritation or annoyance to intense fury and rage. Although hostility usually involves angry feelings, this concept has the connotation of a complex set of attitudes that motivate aggressive behaviors directed toward destroying objects or injuring other people....While anger and hostility refer to feelings and attitudes, the concept of aggression generally implies destructive or punitive behavior directed towards other persons or objects. (Spielberger, Jacobs, Russell, & Crane, 1983, p.161.)
This definition acknowledges the fact that anger is a multidimensional phenomenon composed of physiological reactions, feelings, thoughts, and behaviors that may be distinguished for conceptual and measurement purposes, but they are experienced simultaneously as a total anger event (Beardmore, 2003).

**Forensic Considerations**

A more problematic class of behaviors consists of those that seem to be aggressive, although the intent is actually physically noninjurious (Kassinove & Sukhodolsky, 1995). Within closed environments such as prisons, aggressors may yell, verbally threaten, push, or shove to build up their self-worth. They may coerce and control other people, manipulate what others think of them (i.e. impression management), or preserve dominance and power in a hierarchy (Patterson, 1979; Tedeschi, 1983).

According to Tsytsarev & Grodnitzky (1995) relatively little is known about the prevalence of anger and its relationship with aggression. Additionally, no studies that systematically study anger in criminal groups exist. Criminal behavior often includes both anger and aggression. Therefore, an understanding of the nature and causes of anger and its relationship to aggression is needed. This is particularly true in the criminal world because the
anger is often very strong and at a level labeled as pathological affect (Tsytarev & Grodnitzky, 1995). In the next section, the available measures for assessing anger are reviewed.

**Anger, Hostility, and Aggression Assessment Instruments**

Some of the more popular anger assessment measures are reviewed. This list, by no means meant to be exhaustive, is intended to summarize the anger measures utilized in research studies.

**Buss - Durkee Hostility Inventory.** The Buss - Durkee Hostility Inventory (1957) (BDHI) consists of 75 true-false items and was intended to be a multidimensional measure of hostility. Seven subscales were constructed to assess Assault, Indirect Aggression, Irritability, Negativism, Resentment, Suspicion and Verbal Aggression, and Guilt.

This original study (Buss - Durkee, 1957) factor analyzed scales and found two factors. One factor, consisting of Assault, Indirect Aggression, Irritability, and Verbal Aggression was called Aggressiveness. The other, defined by Resentment and Suspicion was called Hostility. Violent prisoners have higher scores on the BDHI than do nonviolent prisoners (Gunn & Gristwood, 1975).

Buss and Perry (1992) revised the BDHI because the seven scales were established a priori and there was no
factor analysis of items. The 29 item Buss - Perry Aggression Questionnaire (BPAQ) was designed to assess four different components of aggression: Physical, Verbal, Anger, and Hostility. The true - false format of the original BDHI was changed to a Likert scale format. Given this change in format, the content of individual items, and the high test-retest stability of the scale, the BPAQ appears to be a trait measure of individual differences in the disposition to partake in various and sundry aggressive behaviors (Spielberger, et al., 1995).

According to Spielberger et al. (1995) the decade of the seventies produced three measures intended to differentiate anger and hostility: The Reaction Inventory (RI), the Anger Inventory (AI), and the Anger Self-Report (ASR). Evans and Strangeland (1971) developed the RI to assess the extent to which anger was elicited in a number of different situations (i.e. people pushing into line). Novaco’s (1975) AI was similar in conception and format to the RI. The AI consists of 90 items that describe anger provoking situations (i.e. being called a liar, someone spitting at you). In responding both to the AI and RI, the participants are asked to rate the degree to which they believed each situation or incident would anger or provoke them. The ASR was designed by Zelin, Adler, and Myerson
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(1972) to assess both "awareness of anger" and different modes of expressing anger.

The phenomena assessed by the BDHI, and the RI, AI, and ASR appear to be heterogeneous and complex. Spielberger et al. (1995) posited the idea that a common problem with these measures is that the experience of anger and the expression of anger are confounded with angry reactions. Additionally, none of these measures explicitly takes into account the state-trait differentiation. Biaggio and Maiuro (1985) concluded that the construct validity of these measures was both fragmentary and limited. They proposed that a coherent theoretical framework that distinguishes anger, hostility and aggression as psychological constructs, taking the state-trait distinction into account, would seem essential in constructing and validating psychometric measures of anger and hostility (Spielberger et al., 1995).

Measuring State and Trait Anger

Spielberger (1980) developed the State-Trait Anger Scale (STAS) to measure, not only anger as an emotional state that varies in intensity, but also the individual differences in anger proneness as a personality trait. Deffenbacher, et al. (1996) reviewed the state-trait anger theory and the utility of the trait anger scale. State
anger refers to a transitory, emotional - physiological condition consisting of subjective feelings and physiological activation. Therefore, state anger is an emotional - physiological condition that occurs in response to an immediate situation, varies in intensity, and fluctuates over short periods. Trait anger refers to stable personality characteristics of anger proneness, or the tendency to experience anger. Trait anger is considered to be relatively stable; however, individual differences in frequency, intensity, and duration are plausible.

Based on a review of eight studies, participants who experienced high anger reported (a) greater anger in many provocations in their most angering, ongoing situations and in daily life, (b) greater anger related physiological arousal, (c) greater state anger and dysfunctional coping in response to visualized provocation, and (d) greater use of suppression and outward negative expression of anger. High anger individuals suffered more frequent and more intense anger consequences. Trait anger had higher correlations with dimensions of anger than with other emotions, cognitions, and behaviors.
Measures of Anger Expression

Anger research has progressed, highlighting the difference between anger-out, which is defined as expressing angry feelings in aggressive motor behavior directed toward other people or other objects in the environment, and anger-in, defined as suppressing feelings of anger and holding them in (Spielberger, et al., 1985). This formulation led to the development of the Anger-Expression (AX) scale. Spielberger et al. (1995) defined “anger-out” as the frequency in which angry feelings were expressed in aggressive verbal or physical behavior and “anger-in” as the way in which angry feelings were experienced but not expressed. The rating scale format was the same as the STAS-T Anger Scale (Spielberger, 1980).

Measures of Anger Control

The AX scale provided the foundation for a brief objective measure of individual differences in anger control as a personality trait (Spielberger, et al., 1995). This was then combined with the STAS to form the State-Trait Anger Expression Inventory (STAXI). This scale has five primary scales: State Anger, Trait Anger, Anger-In, Anger-Out, and Anger Control. This scale has been used extensively to study the relationship between anger and health.
Rationale and Theoretical Background

Anger and aggression actually overlap each other quite significantly, and in some respects are the same (Salzinger, 1995). Novaco (1994) believed anger was a causal determinant of aggression, although not a necessary or sufficient condition for aggressive behavior. Aggression may occur in the absence of anger, as in the case of instrumental aggression motivated by personal gain (Cornell, Peterson, Richards, 1999). Theorists and clinicians have long recognized the link between high levels of anger, or anger proneness, and increased risk for the eruption of aggressive behavior (Novaco, 1994).

Buss and Perry (1992) administered an aggression questionnaire to two groups of college students. This questionnaire yielded four scales: physical aggression, verbal aggression, anger, and hostility. They discovered that anger correlated strongly with the other three factors; this was unexpected. These correlations suggest that anger is a kind of psychological bridge between the instrumental components and the cognitive components. They highlighted the fact that anger is often a prelude to aggression because individuals who are angry have a greater tendency to act aggressively than individuals who are not angry.
A major weakness of the previous study was its limited external validity due to its utilization of a convenience sample, college students. Williams, Boyd, Cascardi, and Poythress (1996) administered the same aggression questionnaire to 200 participants who were awaiting trial and were represented by the public defenders office. They discovered that a two-factor model fit better for offender populations. One factor encompassed physical aggression and anger, and the other included verbal aggression and hostility. Theoretically, physical aggression and verbal aggression are viewed as different types of aggression, whereas hostility and anger are considered contributing factors to aggression.

Related Research

Data suggest that in an offender population, those who are high in hostility may be more liable to be verbally aggressive, whereas those high in anger may be more liable to be physically aggressive (Williams, Boyd, Cascardi, & Poythress, 1996). One hypothesis is that the offenders would obtain higher scores on the questionnaire than would the normative group. Offenders did not score significantly higher than the normative group. Explanations included the fact that the majority of the sample was not being sentenced for aggressive crimes, and they may have
attempted to answer in a socially desirable fashion. The problem of deliberate deception in self-report inventories has long been regarded as important, particularly in situations in which the content of the items is obvious (Lanyon, Dannenbaum, Wolf, & Brown, 1989).

Maiuro, Cahn, Vitaliano, Wagner, & Zegree (1988) studied anger, hostility, and depression in domestically violent, generally assaultive, and nonviolent control male subjects. By utilizing a hostility and depression questionnaire they discovered domestically violent and generally assaultive men displayed evidence of higher levels of anger and hostility than control subjects.

The anger and hostility scores were very similar in domestically violent and generally assaultive men. Domestically violent men, however, were more liable to be significantly depressed. These findings highlight the importance of assessing for anger dyscontrol in the psychological profile of domestically violent and generally assaultive men (Maiuro, et. al, 1988).

Berkowitz (1990) differentiated between two types of aggression, instrumental and reactive or emotional. Instrumental aggression is more goal-directed and purposive as compared with emotional or reactive aggression, which is elicited more often in response to frustration. Cornell,
et al. (1996) studied psychopathy in instrumental and reactive violent offenders. Their hypothesis was that individuals who commit instrumental violence could be distinguished from those who commit violent crimes that are particularly hostile or reactive in nature.

In two samples, instrumental offenders could be distinguished from reactive offenders on the basis of crime behavior and level of psychopathy, as measured by Hare's (1991) Psychopathy Checklist. Instrumental violent offenders were more psychopathic than either reactive violent offenders or nonviolent offenders, suggesting their ability to utilize goal directed behavior, as opposed to anger, in committing their violent crimes (Cornell, et al., 1996).

In another study Cornell, Peterson, and Richards (1999) utilized self-reported anger as a predictor of aggression among incarcerated adolescents. Their study supported the predictive validity of self-reported anger proneness in identifying juvenile offenders at risk for institutional aggression. Violent offenses were significantly correlated with physical aggression but not with verbal aggression.

Dodge et al. (1990) studied hostile attributional biases in 128 severely aggressive adolescent males in a
maximum-security prison. As they hypothesized, hostile attributional biases were positively correlated with reactive-aggressive behavior. Their findings suggested attributional biases are implicated specifically in interpersonal reactive aggression that involves anger.

Edens, Poythress, and Lilienfeld (1999) discovered a moderately strong correlation between The Psychopathy Checklist-Revised (PCL-R) (Hare, 1991) and a newly developed self-report measure of psychopathy. The study was conducted on 50 male inmates from a youthful offender prison. Follow-up data indicated that the PCL-R identified inmates at risk for disciplinary infractions. Modest but statistically significant correlations were noted between the psychopathy measures and aggressive behavior. Rice (1997) suggested that psychopathic offenders are especially liable to be violent. She indicated that the commission of at least one violent offense could predict future violence.

The Personality Assessment Inventory

The PAI has two important advantages over existing self-report inventories that make it potentially useful in forensic settings (Morey, 1991). First, completion of the PAI requires only a fourth grade reading level. This is a great asset in light of the fact that most offenders have limited educational achievement. Second, the PAI provides
broad assessment of response styles, including carelessness, random responding, and minimization or exaggeration of symptoms. Response style is a key issue in any forensic assessment (Rogers, 1997). Another advantage of the PAI is the fact that it is not in a true or false format. Respondents typically have problems with true or false items, preferring to say whether or not an item applies to them more or less rather than yes or no (Buss & Perry, 1992).

The information in the test manual (Morey, 1991) and in independent studies (Edens, Hart, Johnson, Johnson, & Olver, 2000; Trull, 1995) supports the validity of several PAI scales. The PAI antisocial (ANT) features scale has demonstrated its largest correlation with the Hare psychopathy Scale (r=.82) (Hare, 1991). The ANT features scale has three subscales: Antisocial Behavior (ANT-B), Egocentricity (ANT-E), and Stimulus Seeking (ANT-S). ANT-A focuses on a history of antisocial acts and involvement in illegal activities. ANT-E focuses on a lack of empathy or remorse and a generally exploitative approach to interpersonal relationships. ANT-S focuses on a craving for excitement and sensation, a low tolerance for boredom, and a tendency to be reckless and risk-taking.
Edens, et al. (2000) used the PAI to assess psychopathy in an offender population by utilizing the ANT features scale. The two studies, one with 46 forensic inpatients, and the other with 55 sex offenders, revealed that ANT tapped primarily behavioral symptoms of psychopathy rather than interpersonal and affective symptoms. It was also recommended the scale be utilized as a dimensional rather than a categorical measure of the construct of psychopathy.

Trull (1995) utilized the Borderline (BOR) features scale to screen and select nonclinical participants and to assign them to a borderline personality disorder group or to an absence of borderline personality disorder group. These groups were then compared on a number of domains related to borderline personality disorder. Results supported the validity of this method of classification based on PAI-BOR scores.

The Borderline (BOR) features scale has four subscales: Affective Instability (BOR-A), Identity Problems (BOR-I), Negative Relationships (BOR-N), and Self-Harm (BOR-S) (Morey, 1996). The BOR-A subscale focuses on emotional responsiveness, rapid mood changes, and poor emotional control. The BOR-I focuses on uncertainty about major life issues and feelings of emptiness, unfulfillment,
and an absence of purpose. BOR-N focuses on a history of ambivalent, intense relationships, in which one has felt exploited and betrayed. BOR-S focuses on impulsivity in areas that have high potential for negative consequences.

Additionally, Morey (1996) reported correlations between PAI treatment consideration scales, and such validation measures provide support for the construct validity of these scales. For example, the Aggression (AGG) scale and State Trait Anger Expression Inventory (STAXI) (Spielberger, 1988) were highly correlated (r = .75). The AGG scale was negatively correlated with the STAXI anger control scale.

The aggression scale has three subscales: Aggressive Attitude (AGG-A), Verbal Aggression (AGG-V), and Physical Aggression (AGG-P). The AGG-A scale focuses on hostility, poor control over anger expression, and a belief in the instrumental utility of aggression. The AGG-V scale focuses on verbal expressions of anger, ranging from assertiveness to abusiveness, and a readiness to express anger to others. AGG-P focuses on a tendency to physical displays of anger, including damage to property, physical fights, and threats of violence.
Previous Research on the MAD-AS

Mahan (2001) validated the MAD-AS on 180 participants. There were 120 individuals, 60 from each of 2 clinical groups of outpatient and inpatient populations; there was also a control group of 60 participants from a normal population; these were drawn from graduate school volunteers and nurses from a large rural hospital. In addition to the MAD-AS, participants completed the State Trait Anger Expression Inventory, the Structured Clinical Interview for DSM-IV Personality Disorders, and the Beck Anxiety Inventory.

The internal consistency of the seven main factor scales is comparable with the other established measures of anger. Inpatients were reported as being significantly more angry than the outpatients and the controls on six of the seven factors: behavioral dyscontrol, angry cognitions, verbal expression of anger, physiological arousal, anger justification and blame, and externalization of anger. With regard to validity, the MAD-AS was found to correlate with the presence of Cluster B personality characteristics. Reliability and validity data support the multi-dimensionality of anger.

In this study, the MAD-AS total score correlated with the State - Trait Anger Expression Inventory (STAXI;
Spielberger, 1996); this supported its construct validity (Mahan, 2001). Both scales measure the experience and expression of anger and provide a method for assessing the various components of anger. The MAD-AS has 5 fewer items than the STAXI, so it may accomplish these goals in less time. This study established the validity and reliability of the MAD-AS and supported its use as a preferable alternative to existent, lengthier tests of anger (Mahan, 2001).

Summary and Conclusion of Literature Review

Rothenberg (1971) noted over 30 years ago, that, "almost invariably, anger has not been considered an independent topic worthy of investigation... [which] has not only deprived anger of its rightful importance in understanding human behavior, but has also led to a morass of confused definitions, misconceptions, and simplistic theories" (p. 86). Unfortunately, this conclusion remains tenable even today. In a more recent conclusion by Berkowitz (1993a) "any really close and thorough examination of the psychological research into the origins of anger and emotional aggression must leave the thoughtful reader somewhat dissatisfied. The literature presents us with occasional inconsistencies and unexpected findings that most of the investigators seem not to have noticed..."
(p.35). The current study attempted to study anger in a systematic way in a relatively ignored population of incarcerated male offenders in order to define anger and its related concepts of hostility and aggression.

**Research Hypotheses**

1. Individuals meeting criteria for cluster B personality disorders, defined as an ANT or BOR score on the PAI greater than $T = 70$, would have higher MAD-AS total scores than offenders not meeting criteria for antisocial or borderline personality disorders.

2. Inmates convicted of violent offenses are predicted to score higher on the MAD-AS than inmates convicted of nonviolent offenses.

3. The MAD-AS will demonstrate construct validity by the following: a) The Aggressive Attitude (AGG-A) subscale of the PAI is expected to correlate positively with the Anger Cognition factor of the MAD-AS. b) The Verbal Aggression (AGG-V) subscale of the PAI is predicted to correlate positively with the Verbal Expression factor of the MAD-AS. c) The Physical Aggression (AGG-P) subscale of the PAI is expected to correlate positively with the Behavioral Dyscontrol factor of the MAD-AS. d) The Physical Aggression (AGG-P) subscale of the PAI is predicted to correlate positively with the Physical
Arousal factor of the MAD-AS. e) The Antisocial
Egocentricity (ANT-E) subscale is expected to correlate
positively with the Anger Justification factor of the
MAD-AS.

4. The MAD-AS total score and subscale scores will
demonstrate coefficient alpha of .70 or above.
Participants consisted of 300 diagnostic and classification inmates at a centralized state facility, the State Correctional Institution at Camp Hill in Pennsylvania. The current study utilized a group of incarcerated offenders who experience problems with the management of anger. Therefore, it is not simply a sample of convenience, such as college students. Another benefit for the sample in this current study is that they have already received a sentence of incarceration. Therefore they have less motivation to dissimulate for secondary gain than if they were awaiting trial.

Names of prospective participants were collected from a list of offenders who had completed a routine intake evaluation and the entire standardized classification process. Subjects were randomly selected and were asked to participate in the study.

All participants signed consent forms to participate before participating in the study by completing the MAD-AS. They were advised, in writing, about the nature of the study. Participants were free to withdraw from the study at any time and all information was anonymous. Only the
Level of Services Inventory (LSI-R) total score, Hostile Interpretations Questionnaire (HIQ) total score, Criminal Sentiments Scale Modified (CSSM) total score, Personality Assessment Inventory (PAI) selected subscales, age, race, nature of crime (violent vs. nonviolent), and number of prior commitments were required.

The present study considered only the principal crime; that is, the instant or index offense for which the offender was currently incarcerated. Violent offenses included murder, voluntary manslaughter, aggravated assault, kidnapping, sex crimes, arson, burglary or robbery, extortion accompanied by threats of violence, criminal attempt, criminal conspiracy, or criminal solicitation to commit any of these offenses. Nonviolent offenses consisted of theft, fraud, and drug violations.

Individuals were excluded from this study if they refused to sign the consent to participate document or produced an invalid PAI. Inmates not taking the PAI for any reason, e.g. low reading level, were also excluded.

Description of Measures

The Personality Assessment Inventory. The PAI (Morey, 1991) is a multiscale, self-report inventory intended to measure critical clinical variables. It comprises 344 items, all declarative statements phrased in the first
person, singular. Respondents are asked to rate on a 4 point scale the degree to which the statements are true of them (1 = very true, 2 = mainly true, 3 = slightly true, 4 = false). The items form a number of non-overlapping scales, including the following: 4 scales for assessing response bias, 11 scales for assessing clinical syndromes, 5 scales for assessing treatment related characteristics, and 2 scales for assessing interpersonal style.

The reliability of the PAI has been examined in a number of different studies that examined the internal consistency, test-retest reliability and stability of the instrument (Morey, 1996). Morey (1991) reports median alphas for the full scales of .81, .82, and .86 for normative, college, and clinical samples respectively.

A number of correlational studies have been performed to determine the convergent and discriminate validity of the PAI. Correlations between the behavior disorder cluster scales and validation measures follow expected patterns. The strongest correlation between the Borderline Features (BOR) scale of the PAI was with the Minnesota Multiphasic Personality Inventory (MMPI) (r = .77) (Morey, 1996). This pattern of anger, impulsiveness, and interpersonal clashes is consistent with the core features of the borderline syndrome. The Antisocial Features (ANT)
of the PAI demonstrated its largest correlation with the Hare Psychopathy Scale \( (r = .82) \) and the MMPI Antisocial personality disorder scale \( (r = .77) \). This pattern suggests that the ANT scale addresses the personality, interpersonal, and behavioral elements of psychopathy.

Correlations between PAI treatment considerations scales and such validation measures provide support for the construct validity of these PAI scales (Morey, 1996). The State - Trait Anger Expression Inventory (STAXI) provides a marker for aggression that is broken down into six scales and two subscales. Substantial correlations have been identified between the Aggression scale and the NEO-PI Hostility \( (r = .83) \) and STAXI Trait Anger \( (r = .75) \) scales (Morey, 1996). The AGG scale was negatively correlated with the STAXI Anger Control scale \( (r = -.57) \) (Morey, 1996).

*The Mahan and DiTomasso Anger Scale.* The MAD-AS questionnaire is a self-report questionnaire intended to measure anger. It is composed of 43 items, all declarative statements phrased in the first person, singular. Respondents are asked to rate the degree to which the statements describe the way they have been feeling during the previous week, including today on a 4-point scale \( (0 = \text{never}, 1 = \text{sometimes}, 2 = \text{often}, 3 = \text{always}) \). The 43 items
form 7 factors: behavioral dyscontrol, anger cognition, verbal expression, physiological arousal, anger justification, externalization, and anger resolution.

The MAD-AS has demonstrated sound psychometric properties in terms of its reliability (internal consistency, test-retest reliability) and construct validity (Mahan, 2001; Beardmore, 2003). In regard to validity in particular, the MAD-AS correlates strongly with cluster B personality types.

Level of Services Inventory. The Level of Services Inventory (LSI-R) samples many of the major and minor risk factors for predicting criminal conduct in order to provide a comprehensive risk need assessment; these risk factors include antisocial attitudes, delinquent associates and situational triggers, and inhibitors of criminal conduct (Andrews & Bonta, 2001). The 54 items, grouped into 10 subcomponents, is scored during an interview and is based on the rater's judgement. The LSI-R offers a systematic way of bringing together risk and needs information to offender treatment planning and for assigning levels of freedom and supervision. When these predictors of future criminal behavior, known as risk factors are dynamic (subject to change), they are called criminogenic needs (Andrews & Bonta, 2003). The LSI-R is an instrument that
can be used in a variety of different ways. It is useful as a quantitative decision aid in case classification, for identifying treatment targets and monitoring offender risk, for deciding appropriate security level classification within an institution, and for assessing the likelihood of recidivism.

Hostile Interpretations Questionnaire. The Hostile Interpretations Questionnaire (HIQ) is based on the theory of hostile attributional bias, which is the tendency to interpret ambiguous social situations as provocative (Simourd & Mamuza, 2002). The HIQ is a series of 7 vignettes of common social type situations for offenders. This format was selected to disguise the content of the instrument in an attempt to minimize response bias. It measures an offender’s overall level of hostile interpretations, referring to the person’s tendency to interpret neutral situations in hostile ways. It measures hostility directed toward authority figures, hostility in close interpersonal relationships, hostility in work relationships, hostility in stranger interactions, pervasive levels of hostility based on limited information, perceived hostility from others, a person’s belief that he or she will respond in a hostile manner, and blame of others for one’s own hostility. There are four questions
per vignette; each is rated on a 5 point rating scale (agree v. disagree).

The Criminal Sentiments Scale Modified. The Criminal Sentiments Scale - Modified (CSSM) is a 41-item Likert type scale to assess antisocial attitudes, values, and beliefs. This measures both overall level of criminal attitudes and specific criminal attitude areas including respect for law and criminal justice system, specific justifications for illegal activity, and personal evaluative judgments about law violators.

Procedure

All participants were administered the PAI and MAD-AS by masters-level Psychological Services Specialists (PSS) working under the supervision of state licensed, masters-level psychologist managers. PAI protocols were scored using a commercial computer program. A Psychological Services Specialist scored the MAD-AS.

The LSI-R, HIQ, and CSSM were administered and scored by trained Corrections Counselors, based on the directions and procedures outlined in the test manual for scoring; this is part of the standard assessment for offender classification. The offender assessment process takes place shortly after admission to the intake facility.
Design

The study employed a cross-sectional correlational design to assess the properties of the anger scale.

Statistical Analysis

A psychometric analysis including descriptive statistics, factor analysis, coefficient alpha analysis, Pearson correlations, and t-tests were conducted to test hypotheses.
Chapter 3

Results

In this section the demographic data of the participants are presented first. The results of the factor analysis of the MAD-AS are presented next. Reliability and coefficient alphas for the MAD-AS total score and factors are then presented. Correlations between the presence of cluster B personality disorders and MAD-AS total score will then be presented. The relationship between type of index offense and MAD-AS total scores is presented. Correlations between MAD-AS factor scores and PAI subscales are presented next. Correlations between the LSI-R, CSS-M, and HIQ and total MAD-AS scores are then described.

Descriptive Statistics

A total of 300 male offenders consented to participate in this study. The mean age of offenders in this study was 31-years, ranging from 17-years to 65-years. There were 137 (45.6%) participants between the ages of 20 and 29 and this category composed the largest age range. (Table 1).
Table 1
Frequency Distribution for Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-19</td>
<td>15</td>
<td>5.0%</td>
</tr>
<tr>
<td>20-29</td>
<td>137</td>
<td>45.6%</td>
</tr>
<tr>
<td>30-39</td>
<td>82</td>
<td>27.3%</td>
</tr>
<tr>
<td>40-49</td>
<td>53</td>
<td>17.6%</td>
</tr>
<tr>
<td>50-59</td>
<td>9</td>
<td>3.0%</td>
</tr>
<tr>
<td>60-65</td>
<td>4</td>
<td>1.3%</td>
</tr>
</tbody>
</table>

The racial composition of the sample was predominantly African American and Caucasian. One hundred forty seven (49%) reported their race as African American; 131 (43.7%) Caucasian; 20 (6.7%) Hispanic; 1 (.3%) Asian; and 1 (.3%) other (Table 2).

Table 2
Frequency Distribution for Race

<table>
<thead>
<tr>
<th>Race</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>147</td>
<td>49.0%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>131</td>
<td>43.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>20</td>
<td>6.7%</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>.3%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>.3%</td>
</tr>
</tbody>
</table>
In regard to marital status, 220 (73.3%) were single, 44 (14.7%) were married, 24 (8%) were divorced, 7 (2.3%) were separated, 3 (1%) were engaged, and 2 (.7%) were widowers.

In terms of current offenses, 180 (60%) of the offender participants were convicted of violent crimes and 120 (40%) of the offender participants were convicted of nonviolent crimes. The mean number of prior commitments for the 300 offender participants was 2.77 with a standard deviation of 2.53. The range of prior commitments varied from a low of zero to a high of 14.

On the PAI, the participant sample of offenders had a mean score of $T = 60.06$ with a standard deviation of 10.51 on the ANT scale. On the BOR scale, the mean was $T = 55.90$ with a standard deviation of 11.68. On the subscales, the AGG-A mean was $T = 48.61$ with a standard deviation of 10.66; the AGG-V mean was $T = 48.97$ with a standard deviation of 9.08; the AGG-P mean was $T = 52.92$ with a standard deviation of 11.82, and the ANT-E mean was $T = 52.64$ with a standard deviation of 10.78.

The mean score for this sample of offenders on the LSI-R was 24.68 with a standard deviation of 7.50. The mean score for this sample of offenders on the HIQ was 64.57 with a standard deviation of 15.28. The mean score
for this sample on the CSSM was 25.41 with a standard
development of 13.23. In the next section the principal
components analysis of the MAD-AS is presented.

Factor Analysis of the MAD-AS

A principal component, varimax rotated factor analysis
using a criterion of eigenvalues greater than 1, extracted
six factors accounting for 49.64% of the variance (Table
3). A criterion of factor loadings equal to, or exceeding
.40 was used as a basis for retaining an item on a given
factor. Factor 1, Anger Behavioral Dyscontrol, comprised
10 items measuring the overt display of anger and
behaviors. Those scoring high on this subscale were more
prone to experience anger and act out in an aggressive
manner in anger triggering situations.

Factor 2, Physiological Arousal, comprised 6 items
related to the self-reported symptoms of arousal that is
often associated with anger. The specific symptoms include
accelerated heart rate, increased muscle tension, rapid
breathing, and feelings of restlessness and agitation. This
subscale also captured feelings of anger when under stress
as well as feelings of guilt following the expression of
anger. Those scoring high on this subscale are more liable
to endorse symptoms underlying the physiological substrate
of anger.
Factor 3, Externalization of Blame, comprised 4 items. Individuals scoring high on this subscale have trouble relinquishing current anger as well as past anger, holding grudges against and blame for those who have angered them.

Factor 4, Social and Occupational Impairment, consisted of 2 items. Individuals scoring high on this factor indicated that their anger has caused them occupational and relationship problems.

Factor 5, Quickness to Anger, Frequency and its Effects, consists of 3 items. Individuals scoring high on this factor are quick to anger and get angry frequently; it affects their life, in various ways, such as keeping them up at night.

Factor 6, Anger Justification, consists of 2 items. Individuals scoring high on this factor get angry and argue frequently, without reason.
Table 3. Factor Loadings of the Principal Components Varimax Rotated Factor Analysis of MAD-AS

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Behavioral Dyscontrol</td>
<td>Physiological Arousal</td>
<td>Externalization Impairment</td>
<td>Justification Quickness Frequency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Items</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19. Thoughts of hurting others.</td>
<td>.727</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Hit those who anger me.</td>
<td>.697</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29. Threaten people.</td>
<td>.691</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34. Hit when provoked.</td>
<td>.678</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28. Lose control.</td>
<td>.660</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>42. Offended retaliate.</td>
<td>.646</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26. Insult people.</td>
<td>.643</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Hot head.</td>
<td>.568</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27. Let anger show.</td>
<td>.532</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>18. People fear me.</td>
<td>.510</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>41. Restless and agitated.</td>
<td>.652</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>40. Breathing rapid.</td>
<td>.647</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>38. Heart beats faster.</td>
<td>.596</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>35. Under stress get angry.</td>
<td>.507</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24. Feel guilty after anger expression.</td>
<td>.317</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Hold grudges.</td>
<td>.559</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Trouble letting go of anger.</td>
<td>.520</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Trouble letting go of anger past.</td>
<td>.518</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Blame others for anger.</td>
<td>.454</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21. Anger cause relationship problems.</td>
<td>.448</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22. Anger cause occupational problems.</td>
<td>.448</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Anger more frequently than others.</td>
<td>.525</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Quick to anger.</td>
<td>.423</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Anger keeps me up at night.</td>
<td>.366</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Get angry without reason.</td>
<td>.468</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Argue without reason.</td>
<td>.468</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eigenvalues</td>
<td>13.114</td>
<td>2.102</td>
<td>1.900</td>
<td>1.537</td>
<td>1.426</td>
</tr>
<tr>
<td>Percent of Variance</td>
<td>30.498</td>
<td>4.889</td>
<td>4.419</td>
<td>3.574</td>
<td>3.316</td>
</tr>
</tbody>
</table>
Coefficient Alpha Reliability of the MAD-AS

Cronbach’s coefficient alpha reliability was calculated to assess the internal consistency of the total MAD-AS scale as well as for each subscale. Coefficient alpha for the entire scale was equal to .936. For scales 1 through 6, the respective coefficient alpha values were as follows: Scale 1, .892, Scale 2, .794, Scale 3, .723, Scale 4, .593, Scale 5, .625, and scale 6, .638. Corrected item-subscale total score correlations were calculated for each of the MAD-AS factors (See Table 4). All correlations were significant at p < .001.
Table 4. Corrected Item - Subscale Total Score Correlation for MAD-AS Factors.

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
<th>Factor 4</th>
<th>Factor 5</th>
<th>Factor 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>.63</td>
<td></td>
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Cluster B Personality Disorders

The hypothesis that the presence of antisocial personality disorder would be positively correlated with the MAD-AS total scores was supported by the data results ($r = .217, p < .001$).

The hypothesis that the presence of borderline personality disorder would positively correlate with the MAD-AS scores was also supported ($r = .304, p < .001$).
Violent Crimes

The hypothesis that offenders convicted of a violent index offense would differ significantly in their anger as measured by the MAD-AS total score from those offenders convicted of a nonviolent index offense was supported by the data. The 180 offenders convicted of violent offenses differed significantly from the 120 nonviolent offenders on the MAD-AS total score t = -3.0, df = 298 (p<.003).

Correlation of the MAD-AS with the PAI

In considering the hypothesis for correlations between MAD-AS subscale scores and PAI subscale scores, some could not be evaluated because the extracted factor structure of the MAD-AS combined prior subscales into the 6 found in this study. All 6 MAD-AS subscales significantly correlated with all subscales, AGG-A, AGG-V, AGG-P, and the ANT-E, of the PAI. Table 5 presents a summary of these Pearson correlations. All are significant (p<.01 1-tailed).

Exploratory Variable Correlations

The MAD-AS total score correlated significantly with both the LSI-R and the HIQ. Pearson correlations were .377 and .156, respectively. Correlations were significant at the 0.01 level (1-tailed).
Table 5. Correlation Between MAD-AS and PAI Subscales

<table>
<thead>
<tr>
<th>MAD-AS Subscale</th>
<th>Aggressive Attitude</th>
<th>Verbal Aggression</th>
<th>Physical Aggression</th>
<th>Antisocial Egocentricity</th>
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<tbody>
<tr>
<td>Behavioral Dyscontrol</td>
<td>.448</td>
<td>.459</td>
<td>.472</td>
<td>.257</td>
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<tr>
<td>Physiological Arousal</td>
<td>.192</td>
<td>.136</td>
<td>.207</td>
<td>.148</td>
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<tr>
<td>Externalization of Blame/Anger Resolution</td>
<td>.273</td>
<td>.269</td>
<td>.275</td>
<td>.197</td>
</tr>
<tr>
<td>Social and Occupational Impairment</td>
<td>.411</td>
<td>.196</td>
<td>.432</td>
<td>.242</td>
</tr>
<tr>
<td>Quickness to Anger Frequency and Effects</td>
<td>.384</td>
<td>.284</td>
<td>.302</td>
<td>.172</td>
</tr>
<tr>
<td>Anger Justification</td>
<td>.240</td>
<td>.156</td>
<td>.224</td>
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</table>
Discussion

This section reviews the psychometric properties of the MAD-AS, including reliability and validity. A description of the sample of participants follows, relative to their criminal attitudes, beliefs and values, risk to re-offend, and overall level of hostile interpretations. Sections considering the role of anger in violent crime and in cluster B personality disorders, particularly antisocial and borderline character styles are reviewed next. Final sections consider the limitations of this study, the implications for practice and research, as well as future directions for further study.

Psychometric support for MAD-AS

The current study proposed to advance the study of anger disorders by examining the psychometric properties of the MAD-AS, an anger assessment tool. The current study built upon prior investigations of the MAD-AS with inpatients (Mahan, 2001) and outpatients (Beardmore, 2003) by studying its utility in an incarcerated male offender population. Several important findings were obtained in this study.
Construct Validity

A 6 factor structure was extracted that, for the most part, match previous research on the MAD-AS (Mahan, 2001; Beardmore, 2003). Mahan (2001) discovered 7 subfactors: anger dyscontrol, angry cognitions, verbal expression of anger, physiological arousal, anger justification and blame, externalization of anger, and difficulty with anger resolution. Beardmore (2003) discovered 6 subfactors: behavioral dyscontrol, anger resolution, aggression, physiological arousal, externalization, and verbal expression. In the current study the factors discovered were anger behavioral dyscontrol, physiological arousal, externalization of blame and anger resolution, social and occupational impairment, quickness to anger, frequency and effects, and anger justification.

Considering all 3 studies, the MAD-AS seems to tap into and measure the anger or behavioral dyscontrol. Each factor analysis also revealed physiological arousal, externalization of blame for anger, anger justification, and anger resolution.

The only factor from the current study that had not appeared in Mahan’s (2001) or Beardmore’s (2003) studies was social and occupational impairment. However, another study utilizing the MAD-AS and the SO-MAD-AS to compare
self- and significant other- rated expression of anger found significant social and occupational impairment (Martin, 2002). This would make sense because the current sample was an incarcerated offender population.

The current study supported the MAD-AS as a valid anger assessment instrument. The MAD-AS total score and subfactors demonstrated good construct validity by correlating with specific subscales on the PAI measuring anger. These scales were 1) hostility, poor control over anger expression, and a belief in the instrumental utility of aggression; 2) verbal expressions of anger and readiness to express anger to others; 3) tendency toward physical displays of anger, including property damage, physical fights, and threats of violence; and 4) lack of empathy or remorse and a generally exploitive approach to interpersonal relationships.

Reliability

The coefficient alpha reliability for the entire scale and the 6 extracted subfactors indicated that the MAD-AS is a reliable measure of anger. Some subfactors had lower reliability rates, but this can be attributed to the fact that some subfactors included only 2 MAD-AS questions.

Although the current study did not have a test-retest component to measure reliability, other studies
(Mahan, 2001; Beardmore, 2003) indicated the reliability in regard to scores being similar on multiple administrations was acceptable. The test - retest reliability for Mahan’s (2001) study was .82; this reliability was calculated by correlating the total scores obtained by the control group on two separate occasions separated by a three-week interval. In Beardmore’s (2003) study, the test - retest reliability was .93; in this case reliability was calculated by correlating the total scores obtained by the Anger Group and the Control Group on two separate occasions separated by a two-week interval.

**Utility**

The 3 studies of the MAD-AS taken in concert indicate the fact that this measure represents a significant improvement over current anger measures in terms of its brevity, ease of administration, and standardized scoring. It also reflects the multidimensional quality of anger, measuring cognitive, physiological, and behavioral components.

**HIQ, LSI-R, CSSM**

It is useful to describe their level of risk and the needs assessment based on the instruments that the Department of Corrections administers in a standardized
fashion. The means for these measures are based on a normative group of incarcerated offenders.

The LSI-R is used in the department as a type of triage measure in regard to recommendations for correctional plans and for recommended prescriptive program plans. The LSI-R is a measure used to assess treatment targets and to monitor the offender’s risk for the likelihood of recidivism. The sample was considered medium risk.

On the HIQ, which assesses overall level of hostile interpretations, the group was considered to have medium needs. This total score is the group’s tendency to interpret neutral situations in hostile ways. This score can be used to determine treatment needs and performance.

The CSSM is used to assess criminal thinking, values, and beliefs. This group scored at a level considered medium need.

The Department would utilize these scores to recommend cognitive behavioral programming, “Thinking for a Change” or “Violence Prevention”, commensurate with the criminogenic needs and risk factors with which the offender presents.

In another study Wydo (2003) used the Anger Disorder Scale (ADS) (DiGiuseppe & Tafrate, 2002) and the PAI with a
group of 213 incarcerated offenders at SCI-Dallas. He posited the theory that violent offenders would demonstrate a discernable anger profile. He believed that the ADS had demonstrated the ability to distinguish between prison inmates and a normative sample, as well as sex offenders from a normative sample (DiGiuseppe & Tafrate, 2002); he believed, therefore, that it could also distinguish between violent and nonviolent inmates.

Wydo (2003) did not find support for this hypothesis. He attributed it to the fact that an offender could have been convicted of a nonviolent offense, and yet he may have committed violent offences but he was not caught. On the other hand, he may have previously committed and been convicted of violent offenses but his current offense for consideration in the study was a nonviolent one.

Even violent criminal aggression may serve very different motives - some may hurt others to defend their public images, some hurt to exploit others for their own satisfaction, and still others blow up emotionally from too much frustration (Toch, 1984). Berkowitz (1993a) suggested a number of goals that aggression might serve, including the desire to influence other people, to gain power and dominance over others, to create an impression of toughness, to gain money and social approval, or simply to
discharge unpleasant feelings. Therefore, violent crime is only a small part of the phenomenon of aggression, which covers the intentional infliction of harm more generally. Humiliating others through verbal abuse is functionally equivalent to hitting them. Tedeschi (1983) argued that human aggression is more appropriately conceptualized as coercive power.

The emotional state of anger is relatively independent of aggression. Although most extreme aggression is probably motivated by anger, aggression is not a necessary consequence of heightened anger, nor is all aggression accompanied by such a state (Novaco, 1994). As one anger investigator put it, anger can be likened to an architect’s blueprint. The availability of the blueprint does not cause a building to be built, but its availability makes it a lot easier (Ellis & Tafrate, 1998).

**Antisocial and Borderline Personality Disorder**

The role of anger in cluster B personality disordered patients, especially antisocial and borderline personalities, is known well by any experienced clinician. The borderline client is known by the hallmark symptom of inappropriate, intense anger or of difficulty controlling anger (e.g. frequent displays of temper, constant anger, recurrent physical fights (APA, 2000). The antisocial
client is known for the hallmark symptom of irritability and aggressiveness, as indicated by repeated physical fights or assaults) (APA, 2000).

It appears as though both antisocial and borderline individuals' appraisals of the world involve hypervigilance or a defensive attributional style. The borderline is vulnerable in a dangerous world where no one can be trusted; the antisocial learned early in life that others are harsh and critical.

In a study comparing psychopaths with nonpsychopaths, psychopaths' violent acts were 3 times more likely to be motivated by personal gain and 10 times less likely to have been motivated by emotion (Williamson, Hare, & Wong, 1987). Olweus (1978) found that the aggression of schoolyard bullies, like the violence of adult psychopaths, also tends to be focused more on personal gain rather than on other motives such as retaliation or self-defense. These boys typically were cool and indifferent in their bullying, picking targets that they could easily beat in a fight. Berkowitz (1993) discovered the aggressiveness of such bullying boys was a tactic leading to the attainment of goals other than simply injuring their selected victims.

Psychopathic traits seem conducive to aggression due to the disposition and history required to fulfill the
diagnostic criteria for the disorder. Aggression is initiated by cognitive appraisals of threat and attributions of malevolence (Novaco, 1994; Zillmann, 1979). These attributions of unwanted, unexpected, and aversive interpersonal behavior is that they are preventable and intentional (Kassinove & Tafrate, 2002).

Anger may be an emotional state contributing to the prediction that an offender may be an imminent danger to himself or others (Mahan, 2001). Hostility and aggression are central to the dimension of psychopathy. Psychopathy could be seen as a manifestation of attempts to maintain coercive control of the social environment, supported by negative expectations of others. Psychopaths create conditions of interpersonal conflict in order to maintain their world views (Blackburn, 1998).

The antisocial personality disordered offender has likely discovered that anger and hostility have an intimidating effect on others (Beck, Freeman, Davis, & Associates, 2004). Expressed anger may have the effect of creating a ring of space between the offender and others, thus serving a protective function. Anger could also be used as a test to determine if others care enough to weather the storm of anger and get close to the offender. Anger and hostility for antisocial offenders then are
methods both of control of others and strategies for the offenders’ own safety and survival.

Limitations

The first limitation to this study that was applicable to Mahan’s (2001) study is that self-reports are influenced by the questions’ wording, the format, and the questions’ content (Schwartz, 1999). It is noteworthy, however, that the MAD-AS correlated positively with the exploratory measure of the HIQ. The format for this assessment measure uses vignettes to disguise the content of the instrument in an attempt to minimize response bias (Simourd & Mamuza, 2002).

Gallagher (1997) studied 78 offenders at a maximum security state correctional institution in Ohio to assess inmate views of the MMPI-2. He was exploring the possibility of intentional inmate deception and distortion on assessment measures at the time of intake. He was concerned that inmates may believe these scales are intended to harm them and therefore would be reluctant to respond honestly. He also believed that inmates attempt to craft responses in ways that will result in psychological profiles which will further their own objectives regarding classification and program assignment. He found that 16% admitted they distorted or misrepresented their responses.
Another 16% believed it was in their best interest to be deceptive. Nearly one-fifth of inmates reported being deceptive. Gallagher believes that actual deception is higher because of reluctance to self-report deceptive behavior.

Some reluctance on the part of the offenders to be entirely forthright in the current study was evident. Considering the PAI, these incarcerated offenders, sentenced to serve generally 2 years or greater, rated themselves just one standard deviation above the mean on the ANT scale, which measures personality, interpersonal, and behavioral elements of psychopathy. On the BOR scale, which measures a pattern of anger, impulsiveness, and interpersonal clashes, the mean for this group was one-half of a standard deviation above the mean. In a group similar to the participants in this study, expectations would be that scores would be significantly greater than the mean than those achieved.

In this sample, sixty percent of offenders were convicted of violent crimes. On the AGG-A and AGG-V subscales the mean for the sample of offenders was 2 points below the mean for these scales, which is based on the normative sample. On the AGG-P subscale, the offenders’ mean was 2 points above the mean for the normative group.
Based on the demonstrated behavioral characteristics of this sample, these offenders would be expected to report more significant problems as measured by these scales than would the normative group composed mainly of a community sample. This underreporting of symptoms could be attributed to lack of insight, to justification or minimization of behavior leading to current circumstances, reluctance to report behavior truthfully, or to deception.

The current study generalizes only to incarcerated male offenders. Future research should include female offenders. Future research may also want to consider a test-retest format. This would help address concerns of dissimulation.

**Implications for Practice**

The MAD-AS has proved to be a useful measure of anger with an incarcerated male offender population. Although anger did not cause offenders to commit violent crimes or vice versa, it does appear to be a dynamic criminogenic risk factor that could be addressed through treatment efforts.

Other implications for delivery of programs geared toward anger management include issues regarding appraisals of triggers, physiological arousal, and behavior. Cognitive efforts for angry offenders can be directed at
their view of the world; they see it as harsh and critical; efforts can also be made to address their hypervigilance, which seeks to strike out before others strike first. In regard to physiological arousal, part of the anger script is inborn and developed early in our evolutionary past as part of the fight or flight motor reaction. Berkowitz (1990) indicated that unpleasant situations trigger unpleasant thoughts and emotions, and the cues in the situation will determine if this is expressed as aggression or as flight. Physiological arousal was an important part of the subfactor structure of the MAD-AS in this population. This, coupled with tendencies toward defensive attributional styles (Dodge & Coie, 1987) can establish risk for aggressive, acting out behavior.

A number of elements may diminish intrinsic motivation for offenders; some of these include risk factors such as externalization of blame and justification of anger, combined with egosyntonic personality disorders; the fact that offenders are forced to complete programming add to the potential diminishment. Any programming should consider the offenders level of motivation and match measures according to their readiness for change stage. It can also be difficult to agree on the goals and tasks of therapy while monitoring the therapeutic alliance.
The MAD-AS has proved that it may be a useful measure for assessing the multidimensionality of anger, for assisting in treatment planning for excessive anger, and for monitoring treatment of clinically significant anger. However, in the offender group, more research needs to be done.

Implication for further research directions

Future research should include female offenders. Additionally, when researchers study the emotion of anger, the expression of anger through behavior always becomes intertwined. Studies exploring anger in instrumental and hostile or emotional aggression may prove beneficial. It may prove interesting to study offenders who are convicted of offenses against significant others, as in domestic or battery cases, in order to compare these offender with paid assassins. Additionally, there are offenders whose anger gets them into continual difficulty even in a regimented, controlled environment. Social and occupational impairment could easily lead to institutional impairment. Therefore inmates who have proven to be assaultive, aggressive, or continually disruptive could prove interesting participants for further research.
Summary

The MAD-AS has demonstrated construct validity correlating in expected directions with other psychometric measurement scales. It has displayed acceptable reliability by demonstrating coefficient alpha of .70 or above. Research results indicate the MAD-AS total score correlated significantly with cluster B personality disorders as in prior research (Mahan, 2001). The MAD-AS total score correlated significantly with violent offenses. Other research of anger measurement with incarcerated offenders has failed to achieve this (Wydo, 2003).

Maladaptive anger is related to serious personality problems, one of which is violating laws and the rights of others. In this sample in particular, assessment of when, where, and why offenders execute different anger expression tactics clarifies not only the nature of anger, but also can help identify adaptive strategies that can be effectively employed in situations where offenders become angry.

In correctional institutions there is obviously an interest in maintaining security and reducing aggressive behaviors among inmates. Anger reduction is often viewed as a worthy objective among prison administrators because assisting inmates in controlling their anger is likely to
reduce assaults on inmates and on staff alike. It is also helpful because of the administration’s efforts to incarcerate inmates at an appropriate level, without being overly restrictive; they utilize the inmate’s propensity for violence and his or her threat level as predictors for adjustment in institutions, in community corrections centers, and in the community for offenders who are paroled.

The MAD-AS could be used as an assessment prior to admission into treatment programs directed at anger management; it may be used to determine whether or not the offender possesses adequate motivation for change. It could also be utilized to assess change in the program or lack thereof, and help to create and to gauge awareness of the negative impact of anger episodes while developing new cognitive skills for preparation strategies to cope with anger.
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