DISSERTATION

FURTHER EXPLORING NEGATIVE ANGER CONSEQUENCES

Submitted by

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In partial fulfillment of the requirements

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ABSTRACT OF DISSERTATION

FURTHER EXPLORING NEGATIVE ANGER CONSEQUENCES

The nature and prediction of negative anger consequences have received limited attention from researchers. This research explored the cognitive, affective, and behavioral/expressive components of anger as predictors of anger consequences.

Eight hundred and three introductory psychology students completed the Trait Anger Scale (affective), Hostile Automatic Thoughts Inventory (cognitive), Anger Expression Inventory (behavioral/expressive), Anger Consequences Scale (frequency of anger consequences), and Anger Consequences Severity Scale (severity of anger consequences in a specific situation).

The Anger Consequences Scale was updated with 88 additional consequences and exploratory factor analysis revealed 12 factors: Somatic Outcomes, Physical Aggression/Injury to Others, Mixture of Severe Consequences, Hurt Self Physically, Verbal Fights, Reckless Driving, Negative School/Work Consequences, Substance Abuse, Injury to Children/Animals, Property Damage, Negative Emotions, and Vocational Consequences. Seven of 12 scales replicated earlier factors, and five were new.

The frequency and severity of anger consequences did not correlate highly. Cognitive, emotional, and behavioral/expressive measures generally correlated logically with anger consequences. Hierarchical regression models explored the simultaneous contributions of sex, affective, cognitive, and expressive variables and sex x variable interactions. Variance accounted for ranged from 5.2% to 53.5% for frequency of anger consequences and from 3.8% to 15.9% for severity of anger consequences. The greatest

variance predicted was for the frequency of anger leading to property damage (53.5%), physically aggression and injury to others (49.1%), and verbal fights (47.5%). Sex x anger variable interactions entered only one model. Sex, trait anger, and hostile automatic thoughts entered some models. Forms of anger expression (especially physically aggressive expression toward others or objects and verbally aggressive expressive expression) more consistency entered the regression models.

In general, results indicated that : (1) the frequency of anger consequences may be better explained than the severity of anger consequences in a specific event; (2) different sets of predictors tended to predict different types of consequences (i.e., there was no common or consistent set of predictors); (3) sex, cognitive, and affective variables entered fewer models than behavioral/expressive variables; and (4) there was minimal evidence that sex moderated how variables predicted negative anger consequences. Diagnostic considerations, along with the limitations of the study, were discussed.

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Chapter I

INTRODUCTION

Anger has been referred to as the "forgotten emotion" in mental health, presumably due to the idea that anger as an emotion has received little research, as compared to the amount of research dedicated to other topics, such as violence and depression (Carmony & DiGuiseppe, 2003; DiGuiseppe, Tafrate, Eckhart, & Robin, 1994). It is also reflected by the fact that anger is given little attention in college textbooks (Deffenbacher & Deffenbacher, 2003; Holloway, 2003) and, despite the presence of treatment options that directly target it, anger resists being diagnostically defined (Conger, Conger, Edmondson, Tescher & Smolin, 2003; Holloway, 2003; Lench, 2004).

Essentializing anger has been difficult, as it can be described within several—and sometimes shifting—paradigms. Anger has a polarizing duality not found in other psychological constructs. It has been described as "disruptive, destructive, savage, burning or poisonous," as well as "energizing, empowering, correcting or relieving" (Novaco, 1994, p. 21). Likewise, the description of anger as being a "negative" emotion with either "hot" or "cold" behavioral overtones, also refers to the dualistic notion that the emotion prompts either aggressive or avoidant behaviors (Kring & Bachorowski, 1999, p. 576). Even Aristotle's definition of anger incorporated a dualistic perspective whereby anger involves the presence of both emotional pain (unpleasant internal experience) and pleasure (anticipation of exacting revenge) (Konstan, 2003).

Much of the psychological literature refers to anger as a principle emotion, inasmuch as anger has been historically labeled as one of the three (fear, love and rage—Watson, 1930) to ten (anger, contempt, disgust, distress, fear, guilt, interest, joy, shame, and surprise—Izard, 1971) so-called "basic emotions" that are "hardwired" in every person (Ortony & Turner, 1990). Moreover, the literature primarily refers to anger as a negative emotion, where elements that comprise anger are experienced along a continuum of intensity; that an individual's experience of anger can move from slight annoyance to rage (Deffenbacher & McKay, 2000; Deffenbacher et al., 1996b). Managing or treating anger has been the subject of many self-help books, professional treatment manuals, and is the primary thrust of the American Association of Anger Management Providers (AAAMP, 2006). Resources on anger issues reinforce the notion that it is unique in that it is both energizing and potentially dangerous.

The search to understand anger also extends beyond the boundaries of psychology. It has been studied by historians who recognize the value of studying anger, as it has a place in the historical record of political and philosophical landscapes (Harris, 2003). Anger has been studied by anthropologists who have explored the manner in which cultural identities shaped the expression of anger and other emotions (Middleton, 1989) and by sociologists who have studied anger through the lens of societal conditions or events (Kemper, 1987). Anger has been studied from a neurological perspective utilizing electroencephalogram (EEG) patterns. Researchers studying anger from this perspective have posited the idea that anger is processed by the hemisphere of the brain that processes so-called positive emotions, which runs counter to previous notions that negative emotions (e.g., sadness) are processed in the right hemisphere and positive

emotions (e.g., happiness) are processed in the left hemisphere (Achuff, 2004; Harmon-Jones, 2004). Despite the notion that anger is overwhelmingly viewed as a negative emotion, some EEG research has demonstrated that anger is typically processed in the left hemisphere (Achuff, 2004; Harmon-Jones, 2004). EEG research on emotional lateralization is not conclusive. For example, some research has revealed the possibility that emotional lateralization may function in an opposite manner on the subcortical level in brain-damaged individuals (Berridge, 2002) and still other research indicating that there is a direct link between emotional processing and the right hemisphere (Demaree, Everhart, Youngstrom & Harrison, 2005). However, the lateralization of anger is supported by Behavioral Inhibition System-Behavioral Activation System (BIS/BAS) studies, Valence Model studies, and by Approach-Withdrawal Model studies (Demaree, et al., 2005).

For the average person, anger is primarily understood in an implicit, rather than explicit manner (Smedslund, 1993). Researchers have noted that the construct of anger has been confused with behavioral correlates, such as aggression. Yet it should be noted that anger could be experienced outside and distinct from such behaviors. As anger is principally understood in an experiential manner, it is generally thought of as a concrete set of cognitive, emotional, and physiological components and is often not conceptualized outside its manner of expression (Deffenbacher et al., 1996b). Anger, however, is like any other emotion. It is not simply a behavioral manifestation of a feeling state; rather, it is a multifaceted process that consist of several different components, such as cognitive appraisals, facial expressions, motivation tendencies, feelings and physiological changes (Deckers, 2001; Scherer, 1982). To move from an

implicit understanding of anger to an explicitly defined construct requires operationalizing the anger process, which can be a difficult matter (Smedslund, 1993). The difficulty in defining the construct of anger has historically generated much confusion in the field of psychology (Deffenbacher et al., 1996b; Eckhart & Deffenbacher, 1995).

Another effort towards conceptualizing anger as an emotion, there is a movement to explore anger as a diagnostic category. While there is a substantial amount of literature that details the negative health, societal, and interpersonal consequences of frequent and intense anger, there is comparatively little in the development of clearly understanding, diagnosing, and treating dysfunctional anger (DiGueseppe, Eckhardt, Tafrate & Robin, 1994). Though there have been recent strides within the last decade towards understanding and treating dysfunction anger, there remains little by way of progress in defining and diagnosing dysfunctional anger. The diagnostic system for mental disorders does not contain a mechanism for considering anger as a primary characteristic for any disorder, even though the number of individuals who present for treatment for an anger-related issues is relatively common (Deffenbacher & McKay, 2000). Moreover, giving dysfunctional anger a diagnostic status may have clinical utility when considering the number of disorders that contain anger-related criteria. For example, when considering specific childhood disorders, the *Diagnostic and Statistical Manual for Mental Disorders-IV-TR (DSM-IV-TR)* states that the anger-related criterion for Conduct Disorder include the display a variety of aggressive and hostile behaviors and Oppositional Defiant Disorder criterion require "a pattern of negativistic, hostile, and defiant behavior" (American Psychiatric Association, 2000, p. 102). When considering

how many times anger-related criteria are a part of mental disorders, it is somewhat astounding that only one anger-related diagnostic category exists: Intermittent Explosive Disorder. However, even this category does not explicitly place anger in the criterion. Rather, the criterion for Intermittent Explosive Disorder (IED) rest solely on aggression, which is an expression of anger (American Psychiatric Association, 2000, p.667), Other diagnostic categories that list anger-related symptoms include: 1) Huntington's Disease (irritability); 2) substance intoxication (belligerence); 3) paranoid schizophrenia (anger as a potentially associated feature); 4) mania/hypomania (irritability); 5) posttraumatic stress disorder (irritability or outbursts of anger): 6) generalized anxiety disorder (irritability); 7) sexual masochism (sexual aggression directed towards self); 8) sexual sadism (sexual aggression directed towards others); 9) adjustment disorders with disturbance of conduct (aggression); and, 10) a variety of personality disorders (e.g., paranoid, antisocial, borderline, obsessive-compulsive) have anger-related criterion (holding grudges, aggression, intense anger) (American Psychiatric Association, 2000). As with IED, most of the anger-related symptoms in these diagnostic categories are not specifically defined by the emotion of anger or the consequences of anger, but through anger expression, such as aggression. While some researchers suggest that the concept of anger is too elusive or ill defined to warrant a special diagnostic category (Tafrate, Kassinove & Dundin, 2002), other researchers endorse the notion that anger can be fully conceptualized in such a manner (Deffenbacher, 2003; DiGuiseppe et al., 1994). Some anger researchers went as far as to create a proposal for the "criteria for a general anger/hostility disorder" (DiGuiseppe et al., 1994, p. 245). In one such proposal for a formal diagnostic category

for general anger/hostility, DiGuiseppe et al., (1994) presented the following criterion (pp. 245-246):

> A. Excessive and intense feelings of anger for a period of six months or longer, during which the person experiences angry episodes more days than not in response to any of the following perceived or actual:
>
> (1) Insult, rejection, criticism or threat
> (2) Stressful life events
> (3) Minor daily hassles
> (4) Frustration in attempt to achieve one's goals
> (5) Physical discomfort.
>
> B. The degree of anger expressed is out of proportion to the cultural norm for the precipitating stressor(s).
>
> C. The disturbance does not occur only during the course of a psychotic disorder or intoxication.
>
> D. It cannot be established that an organic factor initiated or maintains the disturbance.
>
> E. The disturbance in A and B significantly interferes with work, social activities or relationships with others (e.g., individuals may avoid contact with the patient or avoid actions that may elicit an angry response; the patient may later express confusion or regret about the consequences of an angry outburst).
>
> F. At least two of the following symptoms are present when angry:
>
> 1. Awareness of physiological arousal:
>
> - accelerated heart rate
> - flushes (hot flashes)
> - muscle tension
> - trembling in the hands
> - rapid breathing
> - stomach pains or nausea
>
> 2. Cognitions:
>
> - demands that ones desires be met
> - belief that ones angry outbursts are an effective means of controlling others
> - the belief that an angry response is justified due to others behavior
> - racing thoughts

- difficulties concentrating on things other than the target of anger
- beliefs that one is being treated unfairly
- blaming of others or putting down of others

3. Behaviors:
   - yelling or screaming
   - verbal threats or insults
   - assaultive gestures
   - seeking out confrontation
   - assaultive acts
   - destruction of property
   - passively blocks the path of the target of the anger

Lastly, if the person meets all the criteria they receive the diagnosis. If they meet all the criteria but F.3, they are to be diagnosed as ANGER DISORDER WITHOUT AGGRESSION.

Deffenbacher (2003) proposed a more comprehensive diagnostic set for diagnosing anger-related disorders that takes into account both the precipitating event and that expression of dysfunctional anger. The Deffenbacher (2003) model illuminates anger symptoms across a spectrum of four categories. Each of these categories is qualified by "with aggression" or "without aggression," yielding eight anger-related diagnoses (Deffenbacher, 2003). These proposed diagnoses are: Adjustment Disorder with Anger, Adjustment Disorder with Anger and Aggression, General Anger Disorder without Aggression, General Anger Disorder with Aggression, Situational Anger without Aggression, Situation Anger with Aggression, Anger Attacks without Aggression, and Anger Attacks with Aggression (Deffenbacher, 2003). The proposed Adjustment Disorder with Anger is broadly defined as a set of intensely maladaptive angry responses to psychosocial stressors (Deffenbacher, 2003). The proposed General Anger Disorder diagnostic category refers to individuals who persistently experience anger (Deffenbacher, 2003). The proposed Situational Anger diagnostic category attempts to

capture those individuals who experience intense anger to specific or prescribed circumstances (Deffenbacher, 2003). The proposed diagnostic set for the Anger Attacks disorder is conceptually similar to IED and Panic Attacks; the individual with an Anger Attack disorder would experience intense, building anger over a short period in the absence of a clear precipitating event (Deffenbacher, 2003). In all cases, the use of the aggression qualifier refers to the use destructive or assaultive behavior that is over and beyond what would be considered reasonable for the circumstances at hand (Deffenbacher, 2003).

An examination of the proposed criteria for these proposals of formal anger disorders yields a thorough analysis of anger, as it relates to the cognitions, expression, and physiological arousal that are part of the anger process. A deficit in these models revolves around the idea that negative consequences are only peripherally addressed in criteria. As with all formal diagnostic categories in the *DSM-IV-TR*, the symptom pattern does not stand in isolation. To make a diagnosis, the *DSM-IV-TR* stipulates that the symptom pattern must be negatively influencing the normal, day-to-day functioning of the individual. In other words, the sympomtology must be substantial enough to produce significant negative consequences. Measures of anger consequences would not only assist in the basic understanding of anger, but also would assist mental health workers attempting to assess the degree of anger-related impairment.

In total, research indicates that angry behaviors can be categorized along a continuum of positive to negative, depending upon adaptive or maladaptive consequences. Therefore, to conceptualize anger as a "steady state" disregards the dynamic interplay the aforementioned elements that comprise an emotion (Scherer,

1982). Thoroughly examining all of the components that comprise an emotion is outside the scope of the present research, so the main thrust here will be to operationalize further the process of anger by investigating the interplay of four facets of anger: angry emotion, angry thoughts, anger expression, and anger consequences.

Angry emotion. Looking beyond the emotional lateralization and the formal diagnostic considerations, anger is also defined as a personality construct that separates *trait* anger from *state* anger. The trait-state anger model postulates that trait anger is a personality construct that refers to individual's general inclination towards experiencing emotion and the degree or level of intensity to which an individual experiences anger (Deffenbacher, Deffenbacher, Lynch & Richards, 2003; Deffenbacher et al., 1996b). State anger refers to the emotional reaction an individual has in response to an event or situation (Deffenbacher et al., 2003, 1996b). Trait anger is a relatively stable personality construct, whereas state anger fluctuates according to the situation at hand. The view that trait anger is a personality constructs that broadly measures an individual's disposition to become angry has been studied in light of how well the state-trait anger theory predicts how an individual will react when angry. For example, it has been found that high-angered individuals are more likely to experience anger more frequently, experience it more intensely, express it more maladaptively, and experience more negative outcomes (Deffenbacher et al., 1996b). This type of support renders trait anger as a potent measure for anger-related events (Deffenbacher et al., 1996b).

While *trait* anger is a strong predictor of negative anger expression and consequences, the emotional lateralization research also demonstrates support for *state* anger prompting negative expression and consequences. Studying state anger can be a

difficult proposition considering that it is event-related. Nonetheless, the available research indicates that state anger can prompt aggressive responses to an intentionally provoking event in a lab situation (Rohlfs & Ramĩrez, 2006). Furthermore, high levels of self-reported state anger in emergency room patients has been implicated in injuries resulting from an intentional harm, which was particularly true for male emergency room patients (Vinson & Arelli, 2006).

Angry thoughts. It has been noted that the emotion of anger "is a function of the complex interactions of three domains: 1) one or more triggers or eliciting stimuli; 2) the person's pre-anger state, which consists of both momentary and enduring elements; and 3) the appraisal process" (Deffenbacher & McKay, 2000, p. 2). This definition of anger details the antecedents, personality characteristics and the important evaluatory process. The evaluation of the antecedents are influenced by the individual's predisposing towards anger (e.g., state and trait anger), which prompts the degree and type of an individual's angry cognitions. Kassinove and Eckhardt (1995) quote the Shakespearean story *Hamlet* in "(t)here is nothing good or bad, but thinking makes it so" (p. 200). Simply put, if people perceive an event or situation in a positive manner, it is likely that they will have resultant positive thoughts. Similarly, if an individual perceives an event or situation as being negatively provocative, it is likely that the individual will have resultant angry thoughts. Angry thoughts can range from mild to a more destructive type of hostile thoughts; it can be described as thoughts about physical aggression, derogation, and revenge (Snyder, Crowson, Houston, Kurylow & Poirier, 1997). Likewise, angry thoughts involving "rumination, catastrophizing, and low positive appraisal" are associated with trait anger (Martin & Dahlen, 2005, p. 1256). Martin and Dalen (2007)

also state that the cognitive-behavioral literature on anger implicates the following cognitions: misattributing causation, overgeneralization, inflammatory labeling, demandingness, and catastrophic evaluation (p. 157).

Maladaptive cognitive coping strategies can exacerbate anger. High-anger adults are more likely to acknowledge experiencing a distortion of cognitions, misinterept benign stimulus as hostile, have poor frustration tolerance, and engage in negative ruminations about self and others (Tafrate et al., 2002). Similarly, Deffenbacher and McKay (2000) detail the four appraisal processes that can increase anger. The four processes are: 1) if the individual perceives the anger-provoking antecedent as being unjustified; 2) if the individual judges the anger-provoking antecedent as controllable or preventable; 3) if the individual perceives the anger-provoking antecedent as being intentional; and 4) if the individual perceives the anger-provoking antecedent as being worthy of blame or punishment. The aforementioned antecedents are a type of "primary appraisal" of the provoking situation; however, there is also an important "secondary appraisal" process (Deffenbacher & McKay, 2000, p. 6). This secondary process refers to a more personal, internal evaluation that determines the ability to cope with the anger-provoking situation (Deffenbacher & McKay, 2000). For example, if an individual experiences an anger provoking event (e.g., being hit in the face) to which the primary appraisal results in perceiving the event as being both intentional and punishable, the secondary appraisal causes the individual to assess their coping strategies for this provocative event. The thoughts regarding this secondary evaluation can range from an assessment regarding their abilities to return the aggression to thoughts regarding despair ("I am in over my head and cannot see a way out of this situation").

Acknowledging angry thoughts in the clinical setting is important and is particularly relevant regarding cognitive-only and cognitive-behavioral techniques to addressing problematic anger. Cognitive therapy alone was found to be an effective intervention with highly motivated clients (Deffenbacher, Dahlen, Lynch, Morris & Gowensmith, 2000). Common issues for a cognitive-behavioral therapist to explore when dealing with an angry client/patient are maladaptive angry thoughts. Such examples include identifying thoughts that magnify the nature of the anger-provoking antecedent, overgeneralizing the provocation (e.g., My work performance is "always" criticized), demanding/commanding thoughts (e.g., internalize thoughts regarding how others "should" behave), and misattributing blame (Deffenbacher & McKay, 2000). Overall, the important issue to remember here is that there is a clear distinction between angry thoughts and angry behavior.

Anger expression. Though the difference between angry thoughts and anger expression had been studied since the 1950's, the most reliable measure of anger expression, as distinct from the feeling of anger, was created in the 1980's by Spielberger (Spielberger, Reheiser & Sydeman, 1995). The scale was called the Anger-Expression scale, and it was designed to capture both the external expressions of anger (e.g., "I strike out at whatever infuriates me") and the internal expressions of anger (e.g., "I boil inside but I don't show it") (Spielberger, Reheiser & Sydeman, 1995). Internal expressions of anger are defined by the manner with which an individual suppresses their expression of anger. For example, the development of the State-Trait Anger Expression Inventory (STAXI) by Spielberger allowed clinicians to assess an individual's predisposition to being angry and their current state of anger, as well as to assess the manner in which an

individual is inclined to express/suppress their anger (Forgays, Forgays & Spielberger, 1997). The current edition of the STAXI-2 looks at the degree to which individuals are inclined to express angry feelings outwardly (e.g., towards other people or the environment), to express angry feelings inwardly (e.g., suppress), to maintain external control of angry feelings (e.g., preventing outward expression), and to maintain internal control of angry feelings (e.g., calming down) (Collins, Litman & Spielberger, 2004; Forgays, Forgays & Spielberger, 1997).

Anger expression has been studied in relation to angry drivers (Deffenbacher, Lynch, Oetting & Swaim, 2002), social skills (Deffenbacher, Thwaites, Wallace & Oetting, 1994), eating disorders (Waller, et al., 2003), depression, and somatoform disorders (Koh, Kim, Kim & Park, 2005). Anger expression has also been researched utilizing EEG, where the muscles involved in angry facial expression (e.g., lowered brow, lips tightened) are related to left frontal lobe activity (Coan, Allen & Harmon-Jones, 2001). Relatedly, neurobiological researchers have located serotonin-regulating genetic markers associated with "anger-related" traits, such as hostility and aggression (Rujescu et al., 2002, p. 1027).

Developmental research on age and anger indicates that people experience and express anger at a very early age; for example, infants display their feelings of anger by furrowing their brow (Lowenstein, 2004), and this is usually evidenced by the six month of life (Benson, 2003). Unlike adults, who typically tighten their lips when angry, infant's lips "take on a square-like, angular shape" when angry (Benson, 2003; Lowenstein, 2004). Age may also be a factor in the means and intensity of anger expression. So-called temper tantrums are a familiar hallmark of childhood that is until

the child learns to express their anger in a more appropriate fashion (Feindler, 1995). Adolescents may be more likely to express their anger using violence and aggression (Lowenstein, 2004), and this may be due to the idea that aggressive youths have a "distorted affect-labeling process" which causes them to respond in anger to situations that elicit any uncomfortable emotion (e.g., sadness, anxiety, fear) (Feindler, 1995, p. 185).

Other research has begun to illuminate a different type of relationship between depression and anger. A study reported that 38% of the variance in depression in a clinical sample could be explained by anger (as measured by the STAXI) (Newman, Fuqua, Gray & Simpson, 2006, p. 160). Popular media have reported on this, the most recently with regard to anger's relationship with men and depression. Scelfo (2007) reported that men may be more inclined to display angry behaviors (e.g., screaming, fighting, irritability) when experiencing depressive episodes. In addition, two of the maladaptive cognitive coping strategies that are predictive of trait anger are rumination and catastrophizing, are also intimately connected with depressive symptoms (Martin & Dahlen, 2005). This connection of depression and anger in men is endorsed by the National Institutes on Mental Health (NIMH, 2000). Moreover, anger and depression have also been typically described as opposite ends of a negative emotional state, where anger is the high-energy negative emotional state and depression the low-energy state (DiGuiseppe & Froh, 2002). This theoretical polarization of anger and depression is inconsistent with the aforementioned neurological patterns; however, research that is more recent has focused on an opposite effect. There is some evidence that aggression against oneself, such as non-depressed suicidal behavior, is related to an increase in

serotonin functioning in the left hemisphere and a decrease in the right hemisphere (Rolfhs & Ramerîz, 2006). Stress research has found that when individuals undergo chronic stress reactions, that the brain begins to over produce stress hormones that can cause dysfunctional mood regulation, also leading to negative anger expression and consequences (Scelfo, 2007). In addition, attribution styles and perception of power may also have an effect on the relationship between anger and depression. Individuals who are in a power-down situation may be more disposed to be angry in a threatening situation; that is, individuals who have cognitions regarding their limited amount of control over a stressful situation may experience greater feelings of anger (Carmony & DiGiuseppe, 2003). Likewise, individuals with very high levels of self-efficacy report lower intensity levels of anger (DiGiuseppe, 2001).

In summary, the research on anger expression is intimately connected with angry thoughts. In fact, anger researchers have suggested that the cognitive aspects of anger occur simultaneously with the expression of anger (Deffenbacher & McKay, 2000).

Anger consequences. Another way to conceptualize the construct of anger is to examine the consequences that result from anger expression. Similar to the relationship between angry cognitions and anger expression, overlap exists between the expression and consequences of anger (Deffenbacher et al., 1996a). Consequences resulting from the expression of anger are important to study to help distinguish maladaptive anger-related behaviors from constructive behaviors. Dysfunctional anger expression that results in property destruction, aggression, and ill social effects can be labeled as negative consequences. In addition, negative anger expression can give rise to problematic feelings of stress (Martin & Dahlen, 2005). On the other hand, anger expression that

results in more positive consequences is reflective of constructive anger expression that can be useful in solving difficult issues, addressing interpersonal problems, and overcoming social injustice. The Civil Rights and Suffragette movements are good examples of positive consequences of anger expression (Lowenstein, 2004). Similarly, survivors of sexual abuse can use anger expression in a positive manner to reattribute feelings of guilt from themselves to the perpetrator (Lowenstein, 2004). When dealing with angry feelings in an adaptive manner (e.g., relaxation techniques to reduce arousal, positive refocusing), it is surmised that the anger consequences can be positive (Martin & Dahlen, 2005). Alternatively, individuals who are prone to anger are more likely to experience anger intensely and express anger more frequently; as such, this degree of anger can have profound and long-lasting consequences (Lowenstein, 2004). All of this suggests that the consequences of anger can be viewed as an outcome variable of angry emotions, angry thoughts, and angry expression.

Research on anger consequences has generated a variety of articles on anger-related aggression the health and criminality literature, where issues relating to physiological processes and somatic concerns (e.g., coronary and vascular diseases) and interpersonal violence (e.g., assault and homicide) have been extensively researched (Del Vecchio & O'Leary, 2004; Tsytsarev & Grodnitzky, 1995). Though anger is negatively expressed as aggression roughly 10% of the time and the majority of aggressive acts are minor (e.g., throwing small items, pushing someone) (DeAngelis, 2003; Holloway, 2003), more attention is paid to the negative consequences of aggression, presumably due to the higher social and interpersonal cost.

While studying anger-related aggression provides extremely valuable information, there is not much published research that clearly links anger expression (outside of aggression) with anger consequences. As just previously stated, there is literature that details the negative consequences of anger expression on physical health, most notably with coronary heart disease. For instance, a meta-analysis of literature of anger and heart disease reported that hostility and aggression both promotes and exacerbates coronary heart-related death and complications from coronary events (Smith, Glazer, Ruiz & Gallo, 2004). Additionally, both anger suppression (anger-in) and anger expression (anger-out) appear to have a deleterious effect on heart health; however, researchers in the area of coping are highlight the benefits of "flexible coping" on heart diseases, versus one style of anger expression (Smith, 2003 p. 46).

> (Researchers are) examining people's anger expression on a continuum that ranges from people who always express their anger to those who always suppress their anger. Those in the middle of the scale have flexible coping skills. They, for example, might tone down their anger when having a conversation with their supervisors, but express their feelings more fully with their spouse. Compared with flexible copers, people who always vent or suppress their anger have significantly greater rises in blood pressure during a stressful event, as well as higher cholesterol and higher levels of homocysteine, an amino acid that's a risk factor for heart disease" (Smith, 2003, p. 46).

Other research on the mental health diagnoses has linked the experience of anger and non-aggressive anger expression to depression in military veterans. It was found that those veterans who tended to suppress their anger were more likely to experience depressive symptoms (Hull et al., 2003). Anger expression in general was also associated with posttraumatic stress disorder symptoms in a military sample (Hull et al., 2003). Hull et al. (2003) also examined anger expression in relation to cognitive functioning; all anger expression styles were significantly positively correlated with self-reported daily

errors in cognition. However, only anger-out and controlled anger were significantly negatively correlated with full-scale scores on intelligence testing (Hull et al., 2003). Likewise, a modest positive correlation between clinically significant anger expression and major depressive disorder was demonstrated in a study of individuals with no other co-occurring mental health disorders (Picardi, Morosini, Gaetano, Pasquini & Biondi, 2004). The Picardi et al. (2004) study compared individuals with stand-alone DSM-IV diagnoses of major depressive disorder, anxiety disorders, and somatoform disorders by utilizing a single question on an instrument that defined anger expression as: "anger, resentment; irritability, litigiousness, hostility, and verbal or physical violence (p. 442)." The results indicated that individuals with major depression were significantly more likely to endorse these anger-out type symptoms than those individuals who carried an anxiety or somatoform disorder diagnoses (Picardi et al., 2004). Another study investigated "anger attacks" (similar to IED symptoms) and mental illness and found such a statistically significant relationship between anger and unipolar depression (Mammen et al., 1999).

Anger expression and the negative consequences of anger have also been studied in relation to interpersonal variables. It is well known that dysfunctional parental anger can have negative outcomes on their children. For example, chronically angry parents may not be able to respond adequately to their children's needs, thereby interfering with the child's ability to attach securely. Mammen et al. (1999) conducted a study, which linked anger expression with anger consequences in a sample of women who had obtained treatment at a clinic for pregnant/post-partum women with psychiatric disorders. The participants in the Mammen et al. study (1999) demonstrated statistically significant

differences in the areas of anger-out and anger-control, but not for anger-in. Those participants who indicated they had experienced strong anger symptoms had much higher scores on the STAXI anger-out scale than those participants who indicated they had not experienced strong anger symptoms; on the other hand, those participants who indicated that they had not experienced strong anger symptoms had much higher scores the STAXI anger-control scale (Mammen et al., 1999). There were no significant differences between the participants with regard to anger-in (Mammen et al., 1999). Of the participants who endorsed expressing strong anger at their immediate family, the majority of these individuals reported later feeling guilt, regret, and concern regarding experiencing future strong anger symptoms (Mammen et al., 1999). Interpersonal negative anger consequences have also been studied in the workplace. One study found that both short- and long-term negative consequences were had when workers engaged in a variety of anger expressions (Booth & Mann, 2005). The short-term negative consequences included revenge, gossip, inability to concentrate, and bad atmosphere at the workplace; long-term negative consequences include quitting, chronic feelings of anger, spillover into personal life, and physical health issues (Booth & Mann, 2005). Although this study examined the expression of anger (e.g., expression, suppression, control), it did not connect the expression of anger in the workplace with its consequences (Booth & Mann, 2005).

Sex differences have been found in both anger expression and anger consequences. Deffenbacher et al. (1996a) found that males reported higher degrees of negative consequences related to their anger expression and that these sex differences accounted for 3-13% of the sex-related variance in anger consequences. The researchers

acknowledge that this is likely due to the idea that males may be more likely to suffer negative consequences related to anger expression involving physical aggression and property damage; however, when the most serious and severe anger-related consequences were investigated, both women and men "suffered the same kinds of consequences and with equal severity" (Deffenbacher et al., 1996a).

Anger as a Process. Though available to a small degree, research explicitly investigating the relationship between the expression of anger and its consequences is lacking. Deffenbacher et al. (1996a) indicated that there is general and clinical utility in conducting such research that would correlate anger expression and consequences. The study of the consequences or outcomes of anger-related expression and emotion have direct relevance in the promotion of anger-related disorders in a diagnostic classification. The *DSM-IV-TR* indicates that for a disorder to have clinical significance, the symptoms must have adverse consequences associated with the symptoms (American Psychiatric Association, 2000).

Conceptualizing anger along the previously stated four dimensions is extremely useful, though there is an ongoing need to operationalize further the psychological construct of anger as a fluid process. As stated earlier, to conceptualize anger as a steady state disregards the dynamic interplay the elements that comprise an emotion which includes: "cognitive appraisal, physiological activation, motor expression, motivational tendencies, and subjective feeling states" (Scherer, 1982). Viewing anger as a process allows us to further examine the emotion and explore all of the variables leading to negative anger consequences. Additionally, looking at the multiple attributes that fully defines anger as a process may help solidify anger as a psychological construct. It is

necessary to operationalize a psychological construct in order to measure it, and having the ability to measure psychological constructs has vast utility in determining the extent to which aberrant or maladaptive behavior is present, as well as for designing appropriate interventions, or for providing further evidence that intensely maladaptive anger may some day merit a formal diagnostic category. The current status of researching anger as a process is small and many of the scales that were designed to assess anger were created to look at the separate pieces of the emotion of anger (e.g., cognitions, expression, consequences), though a few scales have examined different types of cognitive patterns in relation to anger expression. However, the relationships between angry cognitions, anger expression and anger consequences are not as well defined they could be, even though when the available research was examined, it appears that there are definite relationships between angry cognitions, anger expression and anger consequences. For example, an individual who has high-trait anger may have more aggressive thoughts and therefore may be more inclined to behave aggressively (e.g., menacing behaviors) eliciting negative consequences; alternatively, an individual who has more "palliative" anger cognitions may react in a more relaxed manner, thereby eliciting positive—or at least less negative—anger consequences (Deffenbacher et al., 2003, p. 384).

Studying anger as a process is problematic; as stated earlier, the construct of anger has been relatively ignored, in comparison to the vast amount of literature available regarding its negative consequences, such as aggression and hostility. There are a myriad of studies that have investigated the negative consequences of anger in a variety of different areas. These areas range from health issues, workplace issues, driving style, domestic violence, rape, animal abuse, child abuse, anger against oneself, to nonspecific

anger that is diffuse and harmful to society. Though there is much information on the negative consequences of anger, there has been little research effort to link negative anger consequences to angry feelings, angry cognitions, and anger expression. Additionally, while clinicians have at their disposal the ability to measure accurately the rate and intensity of anger via instruments such as the STAXI, there is not sufficient research on instruments that measure the dysfunctionality of anger (Dahlen & Martin, 2006).

Depending on the type of situation involved (e.g., driving) and the manner in which an individual perceives the situation (e.g., as an attack) can predict how anger is expressed (Deffenbacher, Petrilli, Lynch, Oetting & Swaim, 2003). In addition to hostile thoughts, other thoughts may mediate an angry response (DiGuiseppe & Froh, 2002). Mediating thoughts may include perceptions of unfairness and assessment of morality (DiGuiseppe & Froh, 2002) and high levels of sympathy (Harmon-Jones, Vaugn-Scott, Morh, Siegleman & Harmon-Jones, 2004). Another type of anger mediator can be labeled "unhealthy core beliefs" which refer to several categories of negative self-schemas or cognitions about one's self (Waller et al., 2003, p. 123). For example, research has demonstrated that eating disordered individuals who have negative self-schemas are more likely to have higher levels of trait anger (Waller et al., 2003).

Measures that investigate different types of angry thoughts allow us to research how productive or destructive angry cognitions can be. However, the complexity of anger makes studying it difficult; as stated earlier, the construct of anger has been relatively ignored, in comparison to the amount of literature available regarding its negative expression (e.g., violence or aggression). As such, there is an ongoing need to operationalize the psychological construct of anger as a dynamic process. That is,

looking at the attributes that fully defines anger as a process—as Aristotle attempted to do—may help solidify anger as a psychological construct. The main thrust of this research will be to operationalize further the construct of the emotion of anger by investigating how the internal mechanisms (angry thoughts and feelings) are related to the external mechanisms of anger, specifically at angry expression and anger consequences.

To date, different types of cognitive patterns have been studied in relation to anger expression. These studies include a wide range of items; however, recent research using a broad sample uncovered the idea that the most prevalent thought an individual has when angry revolves around the concept of revenge (DiGiuseppe & Froh, 2002). Other research looking at angry cognitions does not address this issue of "revenge" but do investigate the cognitions of high-anger adults. High-anger adults are more likely to acknowledge experiencing a distortion of cognitions, misinterept benign stimulus as hostile, have poor frustration tolerance and engage in negative ruminations about self and others (Tafrate et al., 2002). Similarly, adolescents who are predisposed to aggression tend to make hostile attributions to ambiguous interactions, which increase anger arousal and set the stage for retaliatory responses (Feindler, 1995). This pathway from angry thoughts to anger expression also holds true for adults. When adults perceive a negative event, they are likely to demonstrate some degree of a negatively valence affective state that is associated with anger expression (Kassinove & Eckhardt, 1995).

Just as angry thoughts and anger expression are closely connected, it is also difficult to parse the anger process in such a way as to determine the effects of angry thoughts on anger consequences. A study by Van Coillie and Van Mechelen (2006)

evaluated a specific form of angry cognitions (which they called *cognitive behavior outcome expectancy* for anger-related behaviors) as it related to anger consequences. These authors tap into a previously mentioned issue (secondary appraisals) and study the outcome of an individual's cognitive appraisal of behavioral alternatives, which may "vary considerably as a function of both the behaviours and their consequences" (Van Coillie & Van Mechelen, 2006, pp. 137-138). In another study that specifically analyzed angry appraisals (cognitions), angry expressions, angry experiences, and anger outcomes between high- and low-anger adults, it was found that high-anger adults were more likely to 1) endorse distorted cognitions when angry; 2) engage in more verbal and physical aggression; and 3) experience more negative anger-related outcomes (Tafrate et al., 2002). However, this study did not specifically examine the possible relationships between angry cognitions and anger consequences. While these recent study areas are a promising with regard to exploring the relationship between angry cognitions and anger consequences, very few studies have looked at the process of anger in this manner.

Purpose of This Study

Though anger is thought to be a basic human emotion, comparatively little research has been conducted examining anger as a process. This research sought to explore more fully the anger as an emotional process by not only looking at the emotions, cognitions and expression of anger, but also taking a step further and incorporating the consequences of anger. While this research examined (separately and together) an individual's predisposition towards anger, angry cognitions, angry expression, and the consequences of anger, it also examined the end of the anger process (negative anger consequences), by way of trait anger, angry cognitions, anger expressions and the potentially mediating effect of

sex. Put more specifically, one of the primary purposes of this study was to determine the degree to which different forms of anger consequences are related to anger, angry thoughts, and anger expression.

To accomplish this, this study gathered information on four aspects of anger (e.g., thoughts, emotions, expression, and the frequency and severity of anger consequences). The statistical analyses are based the study's design, which are exploratory in nature. The analyses for this study included exploratory factor analysis, correlational analysis, and hierarchical regression that will detect relationships between the criterion (anger consequences) and predictor variables (trait anger, angry thoughts, and anger expressions), as well as detect any moderating effects pertaining to the sex of the participants.

To establish a reliable measure of anger consequences the following analysis was applied:

- Added new items to an anger consequences questionnaire to broaden the validity and reliability of the measure; and
- Applied exploratory factor analysis (EFA) to the anger consequences questionnaire to see if the current dimensions replicate, as well as to see if other dimensions are uncovered.

To explore the relationships between trait anger, the different types of angry thoughts, the different forms of anger expression and the different aspects of anger consequences:

- A correlation matrix was generated and analyzed for trait anger and all dimensions of angry thoughts, anger expression, and anger consequences; and

- Analysis of variance was utilized to detect differences between male and female participants for trait anger and all dimensions of angry thoughts, anger expression, and anger consequences.

To explore the degree to which trait anger, the different types of angry thoughts, the different forms of anger expression served as potential predictors for the different aspects of anger consequences:

- Hierarchical regression was utilized to generate meaningful statistical information regarding explanatory predictors for the different dimensions of anger consequences.

CHAPTER II

METHOD

Participants

Participants were 803 (387 male, 416 female) introductory psychology students. One student did not specify his/her sex. The mean age was 18.79 (*SD* = 1.66) and the majority classified themselves as being a freshman (70.1%, *n* = 564), followed by sophomores (19.2%, *n* = 154). Most identified as White (81.8%, *n* = 658), followed by Latino/a (7.0%, *n* = 56), Asian (3.7%, *n* = 30), African-American (3.2%, *n* = 26), Other (1.9%, *n* = 15), and American Indian (1.5%, *n* = 12).

Instruments

Five instruments were used for this study: the Trait-Anger Scale, the Anger Expression Inventory, the Hostile Automatic Thoughts Questionnaire, the Anger Consequences Questionnaire and the Anger Consequence Severity Scale. Each instrument is described below.

Trait Anger Scale (TAS). The TAS is a 10-item questionnaire that is derived from Spielberger's (1988) State-Trait Anger Expression Inventory. The TAS is designed to assess trait anger (the degree to which an individual is inclined to become angry). Individuals respond to TAS items such as "I have a fiery temper" based upon a four-point Likert-type scale (1 = almost never, 2 = sometimes, 3 = often, 4 = almost always). Scores on the TAS fall between 10 and 40, where higher scores reflect increasing levels trait anger. Established internal consistency reliabilities fell between αs = .81 and .91

(Spielberger, 1988) and was $\alpha = .79$ for the current study. Two-week and two-month test-retest reliabilities were measured at $rs = 0.70$ to 0.77 (Jacobs, Latham & Brown, 1988) and $r = 0.75$ (Morris, 1998), respectively. The TAS correlates strongly with other anger scales and demonstrates discriminate validity by its capacity to categorize high anger and low anger individuals (Deffenbacher, Demm & Brandon, 1986; Deffenbacher, Oetting, Thwaites, et al., 1996b). The TAS has demonstrated significantly positive partial correlations with both outward and inward anger expression and (0.78 and 0.29, respectively) (Martin & Dahlen, 2005). The TAS also demonstrated significantly negative partial correlations with outward and inward anger control (-0.54 and -0.42, respectively) (Martin & Dahlen, 2005). Additionally, the TAS was found to be related to all aspects of anger consequences as measured on the Anger Consequences Questionnaire (this scale is described in detail further below) (Dahlen & Martin, 2006; Deffenbacher, Oetting, Thwaites, et al., 1996b). The Deffenbacher, Oetting, Thwaites, et al., (1996b) study demonstrated correlations between the TAS and the Anger Consequences scales between 0.23 and .48 (first assessment) and 0.14 and 0.53 (second assessment).

The Anger Expression Inventory (AX). The current AX is a revision of Spielberger's (1988) original 24-item questionnaire that was designed to measure individual differences in the expression and control of anger (Collins, Litman & Spielberger, 2004). As with the original AX, individuals rated how they express themselves when angry or furious on a four-point Likert-type scale (1 = almost never, 2 = sometimes, 3 = often, and 4 = almost always). The AX was revised by adding new items (Morris, 1998; Deffenbacher, Oetting, Lynch, et al., 1996a) and statistically reworked to produce the current 68-item questionnaire that measures anger expression along 13

different dimensions (Morris, 1998). Convergent validity indicators suggested that all of the 13 dimensions of anger expression were significantly correlated with trait anger, and the discriminate validity indicators indicated that the dimensions were more closely tied to trait anger than depression or anxiety (Morris, 1998). Moreover, different forms of expression were more strongly related to some anger consequences than to others. For example, anger expression involving physical assault on people was correlated with physical fights and property damage, whereas noisy arguing and verbal assault was correlated with verbal fights (Deffenbacher, Oetting, Lynch, et al., 1996a). The 13 scales are briefly described below and the individual items are listed in Appendix A:

- Physical Assault-Objects: The Physical Assault-Objects scale is comprised of eight items that reflect physically aggressing towards objects and the physical environment when angry (e.g., I throw things). This scale has demonstrated strong alpha reliability (α = .94) and strong test-retest reliability (r = .81) (Morris, 1998). The current internal consistency was α = .89. Concerning associations with other anger measures, the Physical Assault-Objects scale demonstrated positive correlations with the TAS (r = 0.54 and 0.37, first and second assessment, respectively) (Morris, 1998).
- Physical Assault-People: The Physical Assault-People scale is comprised of four items that reflect physically aggressing towards people when angry (e.g., I threaten to hit people). This scale demonstrated strong alpha reliability (α = .87), though a weaker test-retest reliability (r = .57) (Morris, 1998). The current internal consistency was α = .87. In Morris's study (1998), the Physical Assault-

People scale demonstrated positive correlations with the TAS (r = 0.45 and 0.30, first and second assessment, respectively).

- Verbal Put Downs: The Verbal Put Downs scale is comprised of four items that detail verbal derogation (e.g., I belittle people). This scale has demonstrated adequate alpha reliability (α = .77) and test-retest reliability (r = .73) (Morris, 1998). The current internal consistency was α = .72. Verbal Put Downs scale demonstrated positive correlations with the TAS (r = 0.44 and 0.47, first and second assessment, respectively) (Morris, 1998).
- Noisy Arguing: The Noisy Arguing scale is comprised of six items that reflect loud argumentative behavior (e.g., I shout). This scale has demonstrated strong alpha reliability (α = .88) and adequate test-retest reliability (r = .70) (Morris, 1998). The current internal consistency was α = .84. In Morris's study (1998), the Noisy Arguing scale demonstrated strong positive correlations with the TAS (r = 0.61 and 0.55, first and second assessment, respectively).
- Verbal Assault: The Verbal Assault scale is comprised of five items that reflect verbal aggression (e.g., I swear). This scale has demonstrated strong alpha reliability (α = .87) and adequate test-retest reliability (r = .77) (Morris, 1998). The internal consistency for the current study was α = .83. The Verbal Assault scale was strongly positively correlated with the TAS (r = 0.59 and 0.53, first and second assessment, respectively) (Morris, 1998).
- Dirty Looks: The Dirty Looks scale is comprised of six items that reflect negative angry facial expressions (e.g., I give others a dirty look). This scale has demonstrated strong alpha reliability (α = .90) and adequate test-retest reliability

(r = .68) (Morris, 1998). The internal consistency for the current study was α = .86. With regard to association with other anger measures, the Dirty Looks scale demonstrated positive correlations with the TAS (r = 0.42 and 0.37, first and second assessment, respectively) (Morris, 1998).

- Body Language: The Body Language scale is comprised of eight items that reflect angry non-verbal behaviors (e.g., I fold or cross my arms). This scale has demonstrated adequate alpha (α = .79) and test-retest reliabilities (r = .71) (Morris, 1998). The current internal consistency was α =.76. In Morris's study (1998), the Body Language scale was positively correlated with the TAS (r =0.24 and 0.33, first and second assessment, respectively) (Morris, 1998).
- In-Critical: The In-Critical scale is comprised of two items that indicate negative critical internal thoughts when angry (e.g., I am secretly quite critical of others). This scale has demonstrated adequate alpha (α = .79) and test-retest reliabilities (r = .70) (Morris, 1998). The internal consistency for the current study was α = .82. In Morris's study (1998), the In-Critical scale demonstrated positive correlations with the TAS (r = 0.22 and 0.26, first and second assessment, respectively).
- In-Suppression: The In-Suppression scale is comprised of six items that indicate suppression of angry feelings (e.g., I keep things in). This scale has demonstrated strong alpha reliability (α = .81) and adequate test-retest reliability (r = .72) (Morris, 1998). The current internal consistency was α = .73. The In-Suppression scale correlated positively with the TAS (r = 0.21 and 0.22, first and second assessment, respectively) (Morris, 1998).

- Control: The Control scale is comprised of six items that reflect the ability to control anger expression (e.g., I control my temper). This scale has demonstrated strong alpha reliability (α = .88) and adequate test-retest reliability (r = .77) (Morris, 1998). The internal consistency for the current study was α = .86. In relation to other anger measures, the Control scale demonstrated strong negative correlations with the TAS (r = -.54 and -.53, first and second assessment, respectively) (Morris, 1998).
- Time Out: The Time Out scale is comprised of four items that indicate a positive anger management strategy involving temporary leaving the anger-provoking situation (e.g., I relax until I calm down). This scale has demonstrated strong alpha reliability (α = .82) and adequate test-retest reliability (r = .69) (Morris, 1998). The internal consistency for the current study was α = .82. In Morris's study (1998), the Time Out scale demonstrated negative correlations with the TAS (r = -.42 and -.43, first and second assessment, respectively).
- Reciprocal Communication: The Reciprocal Communication scale is comprised of six items that reflect a non-argumentative flow of conversation when angry in which the person expresses his/her position but listens respectfully (e.g., I listen to others). This scale has demonstrated strong alpha reliability (α = .90) and adequate test-retest reliability (r = .79) (Morris, 1998). The current internal consistency was α = .83. The Reciprocal Communication scale was found to be negatively correlated with the TAS in Morris's study (1998) (r = -.30 and -.34, first and second assessment, respectively).

- Think Before Responding: The Think Before Responding scale is comprised of three items that suggest purposeful cognitive coping strategies when angry (e.g., I think things through before I respond). This scale has demonstrated strong alpha reliability (α = .86) and adequate test-retest reliability (r = .68) (Morris, 1998). The internal consistency for the current study was α = .84. In relation to other anger measures, the Think Before Responding scale was negatively correlated with the TAS (r = -.43 and -.37, first and second assessment, respectively) (Morris, 1998).

The Hostile Automatic Thoughts Inventory (HAT). The HAT is a 30-item questionnaire (Snyder et al., 1997) that measures the thoughts of individuals when they are experiencing anger (see Appendix A). The HAT measures hostile thoughts across three dimensions: physical aggression (11 items), derogation (10 items), and revenge (9 items). Individuals are asked to respond to individual items, such as "I want to get back at this person," using a six-point Likert-type scale to indicate the number of times they experienced the hostile thought in the past week (1 = never, 2 = one time, 3 = two times, 4 = three times, 5 = four times, and 6 = five or more times). Scores on the HAT can fall between 30 and 180, where a higher score indicates a greater frequency of hostile thoughts. Internal and split-half reliabilities were 0.94 and 0.95, respectively (Snyder et al., 1997). Alpha reliabilities for the current study ranged between 0.92 and 0.96. The HAT has significant correlations with another measure of hostile thoughts. The three dimensions of the HAT correlated significantly with all scales of The Angry Cognitions Scale (Martin & Dahlen, 2007). It also correlated significantly with nearly all the dimensions measured on Driver's Angry Thoughts Questionnaire (DATQ)

(Deffenbacher, Petrilli, Oetting & Lynch, 2003). For example, the hostile thoughts with aggressive, derogatory, or vengeful content (as measured by the HAT) were significantly positively correlated with the negative driving thoughts (as measured by the DATQ) such as judgmental/disbelieving thoughts, pejorative thoughts, revenge/retaliatory thoughts, and physically aggressive thoughts (Deffenbacher et al., 2003). Angry driving thoughts on the DATQ that were associated with positive coping were significantly negatively correlated with aggressive and vengeful thoughts on the HAT (Deffenbacher et al., 2003). In another study that reviewed hostile thoughts in combat-related posttraumatic stress disorder symptoms, all three dimensions of the HAT were significantly positively related to the Minnesota Multiphasic Personality Inventory Anger Scale (Crowson, Frueh & Snyder, 2001). Confirmatory factor analysis of the HAT determined that all of the scale items tapped into hostile thought content (Snyder et al., 1997). The HAT also demonstrated moderate positive discriminate and convergent validity with the Cooke-Medley Hostility Scale and Buss-Durkee Hostility Inventory (Snyder et al., 1997).

The Anger Consequences Questionnaire-Revised (ACQ-R). The ACQ-R was constructed for the present study. It is composed of a 121-item pool generated using the original 33 items of the Anger Consequences Scale (Deffenbacher, Oetting, Lynch, et al., 1996a) and adding an additional 88 items (see Appendix A). In the original form, the ACQ was designed to assess the degree of anger consequences by asking individuals to respond to a set of statements that reflect negative aspects of anger (e.g., "break something," "got drunk," "hit someone") along a six-point frequency scale (0 = never, 1 = one time, 2 = two times, 3 = three times, 4 = four times, and 5 = five or more times). The original ACQ-R categorized negative anger consequences along eight different

dimensions (i.e., anger led to): Physical Fights, Verbal Fights, Damaged Friendships, Property Damage, Hurt Self Physically, Alcohol Use, Negative Emotions, and Legal/Vocational Difficulties. Alpha reliabilities for the original ACQ were strong (e.g., α = .66 to .96) (Deffenbacher, Oetting, Lynch, et al., 1996a). Convergent validity demonstrating that all factors were related to trait anger was supported in the original study (Deffenbacher, Oetting, Lynch, et al., 1996a). Support for the utility and further refinement of the original ACQ was demonstrated in a more recent study. The original 30-item ACQ was refined utilizing factor analysis (Dahlen & Martin, 2006). The results of this study yielded the following factors: negative emotions (13 items), aggression (8 items), alcohol/drug use (3 items), self-harm (3 items), and damaged friendships (3 items) (Dahlen & Martin, 2006). Additionally, the results of the refined ACQ retained the psychometric properties of the original ACQ. For instance, as with the original, all of the above factors were related to trait anger and demonstrated strong internal consistency (αs = 0.73 to 0.91) (Dahlen & Martin, 2006).

In the current study, the large item pool was factor analyzed and it was expected to reflect some of these dimensions.

The Anger Consequence Severity Scale (ACSS). The ACSS is based upon the Anger in the Last Year Questionnaire (Deffenbacher, Oetting, Thwaites, et al., 1996b) (see Appendix A). Similar to the Anger in the Last Year Questionnaire, the ACSS assesses the severity of anger-related consequences by asking individuals to describe their worst anger-related incident in the past two months in seven areas and also by generating a score for total number of consequences. The seven different areas measured on the ACSS are: physical problems related to self, physical problems related to others,

damage to property, damage to a relationship, problems at school/work, official/legal consequences, and feeling badly about self (Deffenbacher, Oetting, Thwaites, et al., 1996b). The new overall composite score is comprised of the seven areas and is designed to assess the number of areas in which the respondent experiences anger-related consequences, where a score of 0 = no areas affected by an anger-related incident and 7 = all areas affected by the anger-related incident. As with the original Anger in the Last Year Questionnaire, the ACSS allows the participant to provide detailed descriptions of the anger-related consequence, and then these responses are then coded for severity of consequences (Deffenbacher, Oetting, Thwaites, et al., 1996b). Like the Anger in the Last Year Questionnaire, responses on the ACSS are coded for severity of consequences by using a four-point scale (0 = no consequence, 1 = mild, 2 = moderate, and 3 = severe) (Deffenbacher, Oetting, Thwaites, et al., 1996b). Feeling badly about self could not reliably discriminate between moderate and severe ratings. Ratings on this scale were collapsed to three points (0 = no consequences, 1 = mild consequences, and 2 = moderate/severe consequences). In the original study, the coding was anchored to descriptors to increase standardized ratings (Deffenbacher, Oetting, Thwaites, et al., 1996b). Other methods used to create standardization and reliable ratings for Anger in the Last Year Questionnaire included: 1) creating mutually exclusive categories, 2) rating only actual outcomes (rather than potential outcomes), and 3) assigning lowered ratings for vague or incomplete descriptions (Deffenbacher, Oetting, Thwaites, et al., 1996b). The Anger in the Last Year Questionnaire demonstrated strong interrater reliabilities for the coding method across all seven categories (Deffenbacher, Oetting, Thwaites, et al., 1996b); similarly, this coding method demonstrated similarly strong interrater reliabilities

in an alcohol-related consequences study (*rs* = 0.96 to 1.0) (Leibsohn, Oetting & Deffenbacher, 1994). In the current study, 50 examples of each consequence were rated by two trained, but experimentally blind, graduate student raters. Interrater reliabilities were 1) physical problems to self (r = 1.0), 2) physical problems to others (r = .97), 3) damage to property (r = .98), 4) damage to a relationship (r = .96), 5) problems at work/school (r = 1.0), 6) official/legal consequences (r = .98), and 7) feeling badly about self (r = 1.0). ACSS factors were related to trait anger, supporting validity (Deffenbacher, Oetting, Thwaites, et al., 1996b). For example, high trait anger participants reported more negative anger-related consequences (as compared to low trait anger participants) on physical damage to self, physical damage to others, and relationship damage (Deffenbacher, Oetting, Thwaites, et al., 1996b).

Procedure

This study was reviewed and approved by Colorado State University's Human Research Committee.

Participants were recruited via the departmental website listing of research opportunities for introductory psychology students. The study was described as a one-credit, survey-type study of anger, anger expression, and anger consequences and as taking approximately 40 minutes to complete. The students who were interested in becoming research participants signed up for a time that best fit their schedules. Data were collected in the fall semesters of 2005 and 2006.

The research was conducted in large classrooms at Colorado State University. Upon arrival, students were given a packet that contained a demographic form, two consent forms, and five instruments: the TAS, the AX, the HAT, the ACQ-R, and the

ACSS. In addition, upon completion of the study, participants were given a debriefing statement. All forms are in Appendix A.

The participants were instructed to read and sign one consent form and return it to the researcher and to retain the second consent form for their records. Questions regarding the study were answered, and then the participants completed the questionnaires according to the printed instructions on each. After turning in the completed questionnaires, the participants received a debriefing statement.

To ensure anonymity, the questionnaires contained no personally identifying information beyond the requested demographic information. The consent forms were collected and stored under lock and key in a room separate from the data.

Chapter III

RESULTS

Anger Consequences: Exploratory Factor Analysis

The Anger Consequences Scale was subjected to an exploratory factor analysis. Factor analysis is statistical technique that is utilized to detect the latent structure (or dimensions) of a set of variables. Principle axis factoring was selected, as it is not based upon multivariate assumptions of normality (Fabrigar, Wegener, MacCallum & Strahan, 1999). The rotation method selected was direct oblimin due to the assumption that the factors would be correlated; however, a direct oblimin rotation will also produce results very similar to orthogonal rotations, if the factors are not correlated (Febringar et al., 1999).

Initial diagnostics were generated to see if the sample was appropriate for factor analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy looked to see if the partial correlations among the items were sufficiently high, and the indication was that the partial correlations were high at .92. Additionally, Bartlett's Test of Sphericity was significant, $\chi^2 (df = 7260) = 62{,}490.08$, $p < .001$, indicating that the identity matrix was not a correlation matrix. Both of these diagnostics indicated that factor analysis was appropriate.

Eigenvalues and the scree plot were utilized to select the number of factors. Typically, eigenvalues are set at 1.00, which represents the proportion of variance accounted for by each factor. In the case of the Anger Consequences Scale, each

eigenvalue of 1.00 represented a change in variance of 0.83% (100 by the number of items on the scale divided or 100/121). However, utilizing eigenvalues to determine the number of factors can generate too many factors, whereas utilizing the scree plot can generate too little factors. As such, the methodology employed by Dahlen and Martin (2006) to ascertain the minimum eigenvalue was utilized for this analysis. The minimum eigenvalue utilized in this factor analysis was set at 1.55, indicating that the cutoff for the variance accounted for by a factor would be 1.28% (1.55/121). This generated an initial rotated 13 factor solution that converged in 39 iterations and retained 67 out of the original 121 items. The 13 factor solution corresponded with the scree plot, which indicated a 5 to 13 factor solution (Appendix B). The 13 factor solution accounted for 54.5% of the variance; the eigenvalues and variances for the 13 factors are displayed in Table 1.

Factor interpretation. As an additional control for the overestimation of factors, factors loadings that met one or both of the following criteria were removed: 1) items loading on more than one factor with an absolute value of .30 or higher, or 2) factor loadings less than an absolute value of .50. This additional filtering of factor loadings resulted in a final 12 factor solution. Table 2 provides a summary of the pattern matrix and their loadings.

Factors were examined and interpreted based upon common elements of the individual items. Alpha reliabilities for each factor were also calculated. Factor 1 was labeled "Somatic Outcomes" and contained six items that reflected anger leading to negative somatic sensations or conditions ($\alpha = .86$). Factor 2 was labeled "Physical Aggression and Injury to Others," with 10 items that were related to inflicting

Table 1.
Factor Analysis of the Anger Consequences Scale:

Initial Eigenvalues and Variance Explained

Factor	Initial Eigenvalues	Percent Variance	Cumulative Percent
1	24.84	20.53	20.53
2	22.25	9.29	29.82
3	6.21	5.13	34.96
4	3.59	2.97	37.92
5	2.94	2.43	40.35
6	2.69	2.23	42.58
7	2.57	2.13	44.70
8	2.31	1.91	46.61
9	2.24	1.85	48.46
10	2.06	1.71	50.17
11	1.83	1.51	51.68
12	1.75	1.45	53.12
13	1.65	1.36	54.49

Table 2.
Anger Consequences Scale: Final 12-Factor Solution

	1	2	3	4	5	6	7	8	9	10	11	12
Be nauseated	.64											
Have a stomachache or stomach trouble	.63											
Experience muscle tension	.62											
Have tight neck muscles	.57											
Feel fatigued	.55											
Have a headache	.53											
Bruise another person		.83										
Almost physically hurt someone		.65										
Injure another person (not requiring major medical care)		.65										
Push/shove someone		.64										
Kick someone		.63										
Slap someone		.61										

Table 2.

Anger Consequences Scale: Final 12-Factor Solution (continued)

	1	2	3	4	5	6	7	8	9	10	11	12
Hit someone		.55										
Threaten to hurt someone physically		.54										
Try to pick a physical fight		.54										
Grab someone		.52										
Get fired from a job			.76									
Get a arrested while driving			.65									
Get asked to leave a social event			.63									
Get asked to leave a class or work			.58									
Get a negative evaluation from an employee or teacher			.53									
Damage my car			.52									
Cut or scrape myself (requiring stitches)				-.76								
Cut or scrape myself (*not requiring* stitches)				-.67								
Bruise myself				-.65								
Felt like hurting myself				-.52								
Call another person a name					.69							
Say nasty things					.68							
Insult someone					.64							
Yell or scream at someone					.62							
Get into an argument					.60							
Put another person down					.59							
Say something that hurt someone's feelings					.59							
Swear at someone					.58							
Be sarcastic to another person					.56							
Drive unsafely						.74						

Table 2.

Anger Consequences Scale: Final 12-Factor Solution (continued)

	1	2	3	4	5	6	7	8	9	10	11	12
Drive too fast						.73						
Drive recklessly						.68						
Hurt my school work							.93					
Hurt my grades							.78					
Interfered with my studying							.69					
Hurt my work performance							.61					
Get drunk								-.90				
Drink alcohol								-.88				
Use drugs other than alcohol								-.54				
Physically hurt a child									.93			
Hurt an animal									.82			
Lash out at an object										-.71		
Feel like breaking something										-.69		
Hit a wall or something										-.67		
Break something										-.64		
Throw something										-.58		
Damage property										-.53		
Feel guilty											-.76	
Feel foolish											-.69	
Feel embarrassed											-.69	

Table 2.

Anger Consequences Scale: Final 12-Factor Solution (continued)

	1	2	3	4	5	6	7	8	9	10	11	12
Feel ashamed											-.68	
Feel dumb											-.65	
Regret something I did											-.56	
Feel resentful											-.53	
Say something I regretted											-.50	
Have trouble with co-workers												.67
Get into a hassle at work												.62

violence on another person ($\alpha = .90$). Factor 3, "Mixture of Severe Consequences," contained six items that did not fit together because of content, but the items referred to very severe anger consequences ($\alpha = .84$). Factor 4 was labeled "Hurt Self Physically," because it contained four items involving anger leading to physical injury to self ($\alpha = .77$). Factor 5 was labeled "Verbal Fights" because its nine items involved anger leading to things such as verbal insult, assault, and arguments ($\alpha = .91$). Factor 6, "Reckless Driving," contained three items relating to anger leading to driving unsafely ($\alpha = .89$). Factor 7 was labeled "Negative School/Work Consequences" and contained four items pertaining to the impact of anger on school and work performance ($\alpha = .84$). Factor 8, "Substance Abuse," had three items relating to anger-instigated drug and alcohol use ($\alpha = .83$). Factor 9 was labeled "Injury to Children/Animals" and had two items involving anger leading to those actions ($\alpha = .93$). Factor 10, "Property Damage," contained six items regarding anger leading to the damage of objects or property ($\alpha = .87$). Factor 11 was labeled "Negative Emotion," with eight items involving anger causing

uncomfortable or negative emotions in the person ($\alpha = .91$). Lastly, factor 12 was labeled "Vocational Consequences," because its two items involved anger-related work issues ($\alpha = .78$).

Sex differences. The scores on the items in each factor were summed and the means and standard deviations of the scales were examined to compare response patterns across the sexes (see Table 3). A one-way (Sex) multivariate analysis of variance (MANOVA) was conducted to investigate whether or not there were differences on the 12 scales. Significant differences were found among the 12 scales, $\lambda = 0.82$, $F(12, 772) = 14.03$, $p < .001$, $\eta^2 = 0.180$. Follow-up analyses of variance were conducted on each of the scales to investigate sex differences on the scales. Due to the large sample size of this study, it was deemed necessary to use caution when interpreting significant statistics. To ensure the statistically significant results were not over-interpreted, a correction was put in place. Therefore, to correct for the effects of the large sample size of this study, only those p values of < 0.05 with effect sizes that were greater than 0.01 were deemed interpretable [i.e., the lower end of a small effect size (Cohen, 1988)].

Consequences that were significant and met the effect size criterion were on the following factors: Somatic Outcomes, Physical Aggression and Injury to Others, Property Damage, and Negative Emotions. Female participants demonstrated significant higher scores on the Somatic Outcomes and Negative Emotions than the males, though the effect sizes were moderate and small. Males reported more Physical Aggression and Injury to Others and Property Damage factor. Effect sizes for these differences were moderate.

Table 3.

Central Tendency, Dispersion, and Univariate Analysis by Sex

for the 12-Factors of the Anger Consequences Scale

	All		Females		Males		Sex Effect	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*F(1, 783)*	
Somatic Outcomes	6.76	6.98	8.23	7.33	5.18	6.23	39.22*	0.048
Physical Aggression and Injury to Others	1.51	4.22	0.66	2.59	2.42	5.32	35.31*	0.043
Mixture of Severe Consequences	0.21	1.22	0.12	0.81	0.30	1.54	4.45*	0.006
Hurt Self Physically	0.21	2.15	0.75	2.50	0.60	1.70	1.01	0.004
Verbal Fights	13.74	10.53	13.08	9.70	14.45	11.33	3.34	0.002
Reckless Driving	2.20	3.20	2.07	3.05	2.36	3.35	1.62	0.001
Negative School/Work Consequences	1.78	3.09	1.71	2.95	1.87	3.25	0.51	0.001
Substance Abuse	2.79	3.97	2.41	3.74	3.18	4.18	7.31*	0.009
Injury to Children/Animals	0.03	0.41	0.01	0.13	0.05	0.57	1.72	0.002
Property Damage	2.64	4.72	1.41	3.14	3.96	5.69	61.54*	0.073
Negative Emotions	8.64	8.54	9.53	8.62	7.69	8.35	9.20**	0.012
Vocational Consequences	0.17	0.81	0.14	0.70	0.20	0.91	1.21	0.002

Note. *$p < .05$

The Anger Consequence Severity Scale (ACSS)

The items of the ACSS were examined to look at the means and standard deviations across the sexes. Out of the 803 participants in this study, data for 19 individuals were not included in the analyses due to incomplete responding. A one-way (Sex) MANOVA revealed a significant multivariate sex effect, $\lambda = .92$, $F(9, 774) = 7.24$,

$p < .001$, $\eta^2 = 0.078$. Follow up one-way ANOVAs (see Table 4) were conducted to determine any differences between males and females on each of the scales. As with the previous analyses, the correction for the large sample size was enacted; that is, only those p values of < 0.05 with effect sizes that were greater than 0.01 were deemed interpretable.

Table 4.

Central Tendency, Dispersion, and Univariate Analysis by Sex for the Anger Consequences Severity Scale

Anger Consequences Severity Scale	All		Females		Males		Sex Effects *F(1, 783)*	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*		
Physical Damage-Self	0.26	0.66	0.23	0.61	0.29	0.72	1.52	0.002
Physical Damage-Other	0.17	0.59	0.10	0.41	0.25	0.73	13.41*	0.017
Property Damage	0.24	0.70	0.14	0.54	0.35	0.84	16.94*	0.021
Relationship Damage	1.21	1.09	1.37	1.07	1.02	1.08	20.77*	0.026
Work/School Problems	0.27	0.66	0.31	0.71	0.22	0.61	3.98*	0.005
Legal/Official Consequences	0.05	0.34	0.02	0.24	0.07	0.42	4.35*	0.006
Damage to Self-Esteem	0.60	0.70	0.69	0.72	0.51	0.65	13.39*	0.017
Reported Cost	2.12	1.04	2.14	1.09	2.09	0.99	0.52	0.001
Total Number of Consequences	1.69	1.13	1.76	1.12	1.61	1.14	3.34	0.004

Note. $*p < .05$

The severity of anger consequences that were significantly different between the males and females and met the effect size criterion were on the following scales: Physical Damage-Other, Property Damage, Relationship Damage, and Damage to Self-Esteem. Male participants demonstrated significantly higher severity levels on the anger consequences related to Physical Damage-Other, and Property Damage. Effect sizes for these differences were small. Females reported higher severity levels on anger

consequences related to Relationship Damage and Damage to Self-Esteem. Effect sizes for these differences were small.

Trait Anger Scale

For the current study, the items of the TAS were examined to look at the means and standard deviations across the sexes. Out of the 803 participants in this study, data for one individual were not included in the analyses due to incomplete responding.

The mean total score on the TAS was 18.52 ($SD = 4.23$). A univariate ANOVA investigated sex differences. The correction for the large sample size was employed; that is, only those p values of < 0.05 with effect sizes that were greater than 0.01 were deemed interpretable. Men ($M = 18.91$, $SD = 4.60$) and women ($M = 18.17$, $SD = 3.82$) did not differ meaningfully, $F(1, 802) = 6.21$, $p < .05$, $\eta^2 = 0.008$.

Anger Expression Inventory

Out of the 803 participants for the current study, data for two individuals were not included in the analyses due to incomplete responding. A one-way (Sex) MANOVA revealed a significant multivariate sex effect, $\lambda = 0.69$, $F(13, 788) = 27.86$, $p < .001$, $\eta^2 = 0.315$. Follow up one-way ANOVAs (see Table 5) were conducted to determine any differences between males and females on each of the scales. As with the previous analyses, the correction for the large sample size was enacted; that is, only those p values of < 0.05 with effect sizes that were greater than 0.01 were deemed interpretable.

Forms of anger expression that were significant and met the effect size criterion were on the following: Physical Assault-Objects, Physical Assault-People, Verbal Assault, Dirty Looks, Body Language, Control, Reciprocal Communication, and Think

Table 5.

Central Tendency, Dispersion, and Univariate Analysis by Sex

for the Anger Expression Scale

Anger Expression Scale	All		Females		Males		Sex Effect	η^2
	M	*SD*	*M*	*SD*	*M*	*SD*	*F(1, 783)*	
Physical Assault-Objects	11.09	4.00	10.16	3.13	12.10	4.56	49.75*	0.059
Physical Assault-People	4.69	1.68	4.35	1.31	5.06	1.94	38.20*	0.046
Verbal Put Downs	7.22	2.23	7.07	2.20	7.37	2.25	3.70*	0.005
Noisy Arguing	12.84	3.62	12.89	3.71	12.79	3.53	0.16	0.000
Verbal Assault	9.61	3.29	9.12	3.03	10.15	3.47	20.19*	0.025
Dirty Looks	11.31	3.71	11.73	3.93	10.87	3.40	11.03*	0.014
Body Language	16.28	4.41	17.68	5.43	14.80	3.73	96.02*	0.107
In-Critical	4.49	1.70	4.54	1.69	4.43	1.72	0.36	0.001
In-Suppression	13.77	3.55	13.86	3.75	3.68	3.33	0.52	0.001
Control	17.55	3.95	17.18	3.94	17.96	3.93	7.84*	0.010
Time Out	10.24	2.76	10.21	2.80	10.26	2.73	0.06	0.000
Reciprocal Communication	15.85	3.97	17.13	3.87	15.85	3.97	21.30*	0.026
Think Before Responding	7.71	2.22	7.44	2.15	8.00	2.26	12.99*	0.016

Note. $*p < .05$

Before Responding. Female participants demonstrated significantly higher scores on anger expression related to Dirty Looks, Body Language, and Reciprocal Communication. Effect sizes for these differences were small and moderate. Males reported higher levels of anger expression related to Physical Assault-Objects, Physical Assault-People, Verbal Assault, Control, and Think Before Responding. Effect sizes for these differences were small to moderate.

Hostile Automatic Thoughts

Out of the 803 participants for the current study, data for five individuals were not included in the analyses due to incomplete responding. A one-way (Sex) MANOVA demonstrated a significant multivariate sex effect, $\lambda = 0.870$, $F(3, 795) = 39.75$, $p < .001$, $\eta^2 = 0.130$. Univariate ANOVAs (Table 6) detected significant sex differences on the HAT Aggression and Revenge Scales. Males scored higher on both, and the effect sizes were moderate for each.

Table 6.

Central Tendency, Dispersion, and Univariate Analysis by Sex for the Hostile Automatic Thoughts Scale (HAT)

Hostile Automatic Thoughts Scale	**All**		**Females**		**Males**		**Sex Effect**	
	M	*SD*	*M*	*SD*	*M*	*SD*	*F(1,797)*	η^2
HAT Aggression Scale	15.27	14.21	11.08	11.35	19.81	15.56	82.91*	0.094
HAT Derogation Scale	38.57	11.68	38.24	11.54	38.93	11.84	0.63	0.001
HAT Revenge Scale	18.94	13.38	15.29	11.57	22.89	14.07	68.53*	0.079

Note. *$p < .05$

Correlational Analyses

In order to investigate the relationships on the items within each scale and between each scale, correlations were generated to test the significance of each association. For the purposes of this study, correlations will be interpreted when the association is statistically significant at $p < .05$ and the correlation is equal to or greater than .10 ($r \geq .10$). In addition, the definitions to describe the relative strength of the

correlations will be small, moderate, and large; a "small" correlation is when $r \geq 0.10$ and < 0.30, a "moderate" correlation is when $r \geq 0.30$ and < 0.50, and a "large" correlation is when $r \geq 0.50$.

Anger Consequences Scale. The relationship between the factors of the Anger Consequences Scale was examined first (see Table 7).

Table 7.

Correlations of the Anger Consequences Factors

	2	3	4	5	6	7	8	9	10	11	12
1	.15*	.18*	.32*	.44*	.33*	.36*	.27*	-.02	.24*	.63*	.09
2		.33*	.12*	.17*	.16*	.19*	.17*	.25*	.18*	.09	.24*
3			.21*	.45*	.27*	.12*	.29*	.10*	.62*	.09	.21*
4				.18*	.17*	.16*	.22*	.03	.33*	.33*	.09
5					.40*	.25*	.38*	.04	.46*	.47*	.15*
6						.25*	.31*	.02	.32*	.31*	.32*
7							.16*	.04	.18*	.42*	.22*
8								.04	.29*	.19*	.07
9									.08	-.01	.08
10										.21*	.17*
11											.10*

Note. $*p < .05$ and $r \geq .10$
1= Somatic Outcomes, 2=Physical Aggression and Injury to Others, 3=Mixture of Severe Consequences, 4=Hurt Self Physically, 5=Verbal Fights, 6=Reckless Driving, 7=Negative School/Work Consequences, 8=Substance Abuse, 9=Injury to Children/Animals, 10=Property Damage, 11=Negative Emotions, and 12=Vocational Consequences

All but two of the correlations between the Anger Consequences Scale factors were positive; the exceptions were near-zero correlations between the Injury to Children/Animals and the Somatic Outcomes and Negative Emotions factors.

The Somatic Outcomes factor demonstrated small correlations with the Physical Aggression and Injury to Others, Mixture of Severe Consequences, Substance Abuse, and Property Damage factors. Moderate positive correlations were detected between the Somatic Outcomes factor and Hurt Self Physically, Verbal Fights, Reckless Driving, and Negative School/Work Consequences. The Somatic Outcomes factor was strongly correlated with the Negative Emotions factor.

The Physical Aggression and Injury to Others factor demonstrated small correlations with the Hurt Self Physically, Verbal Fights, Reckless Driving, Negative School/Work Consequences, Substance Abuse, Injury to Children/Animals, Property Damage, and Vocational Consequences factors. The Physical Aggression and Injury to Others had a moderate correlation with Mixture of Severe Consequences.

The Mixture of Severe Consequences factor had a moderate correlation with the Verbal Fights factor and a large correlation with the Property Damage factor. It demonstrated small correlations with all other factors, except for a nonsignificant correlation with the Negative Emotions factor.

The Hurt Self Physically factor demonstrated small correlations with the Verbal Fights, Reckless Driving, Negative School/Work Consequences, and Substance Abuse. It also had moderate correlations with Property Damage and Negative Emotions.

Verbal Fights demonstrated small correlations with Negative School/Work Consequences and Vocational Consequences, and had moderate correlations with the Reckless Driving, Substance Abuse, Property Damage, and Negative Emotions factors.

Reckless Driving had a small correlation with Negative School/Work Consequences and moderate correlations with the Substance Abuse, Property Damage, Negative Emotions, and Vocational Consequences factors.

Negative School/Work Consequences demonstrated small correlations with the Substance Abuse, Property Damage, and Vocational Consequences. It correlated moderately with Negative Emotions.

The Substance Abuse factor had a small correlation with Property Damage and Negative Emotions.

The Negative Emotions factor demonstrated a small correlation with the Vocational Consequences factor.

Anger Consequences Severity Scale. The correlations among measures from the ACSS are presented in Table 8.

All significant correlations were positive. Physical Damage-Self formed a large correlation with the Total Number of Consequences score, a moderate correlation with Physical Damage-Other and small correlations to Property Damage, Work/School Problems, Damage to Self-Esteem, and Reported Cost. Physical Damage-Other formed a moderate correlation with Total Number of Consequences and demonstrated small correlations with Legal/Official Consequences and Reported Costs. Property Damage was moderately correlated with the Total Number of Consequences score and formed a small correlation with Legal/Official Consequences. Relationship Damage was strongly correlated with the Total Number of Consequences score, had a moderate correlation with Reported Cost, and formed small correlations with Work/School Problems and Damage to Self-Esteem. Work/School Problems was strongly correlated with the Total

Number of Incidents score, and demonstrated small correlations with Legal/Official Consequences, Damage to Self-Esteem, and Reported Cost. Legal/Official Consequences demonstrated small correlations with the Total Number of Consequences score, Damage to Self-Esteem, and Reported Cost. Damage to Self-Esteem was moderately correlated with Total Number of Consequences and demonstrated a small correlation with Reported Cost. Lastly, Reported Cost was moderately correlated with the Total Number of Incidents.

Table 8.

Correlations for the Anger Consequences Severity Scale

Anger Consequences Severity Scale	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Physical Damage-Self	.35*	.16*	.08	.19*	-.01	.10*	.22*	.55*
Physical Damage-Other		.09	.00	.00	.14*	-.05	.12*	.39*
Property Damage			-.04	.03	.12*	.03	.07	.40*
Relationship Damage				.25*	.00	.15*	.38*	.61*
Work/School Problems					.11*	.13*	.24*	.53*
Legal/Official Consequences						.11*	.18*	.28*
Damage to Self-Esteem							.26*	.45*
Reported Cost								.47*

Note. *$p < .01$ and $r \geq .10$

1. Physical damage-self, 2. Physical damage-other, 3. Property Damage, 4. Relationship Damage, 5. Work/School Problems, 6. Legal/Official Consequences, 7. Damage to Self-Esteem, 8. Reported Cost, 9. Total Number of Consequences

TAS and HAT Scales. Correlations between the TAS and HAT scales are presented in Table 9.

TAS demonstrated large positive correlations with the HAT Physical Aggression scale and the HAT Revenge scale and a moderate positive correlation with the HAT

Table 9.

Correlations of the Trait Anger Scale and the Hostile Automatic Thoughts Scales

	HAT: Physical Aggression	HAT: Derogation	HAT: Revenge
TAS	0.56*	0.36*	0.53*
HAT: Physical Aggression		0.50*	0.78*
HAT: Derogation			0.57*

Note. $*p < .01$ and $r \geq .10$

Derogation scale. All of the HAT Scales had large, positive inter-scale correlations.

Anger Expression Scales. Correlations between the 13 scales of the Anger Expression Inventory are displayed in Table 10.

The Physical Assault-Objects scale demonstrated a large positive correlation with the Physical Assault-People scale and moderate positive correlations with the Verbal Put Downs, Noisy Arguing, Verbal Assault, and a moderate negative correlation with Control. It also had a small positive correlation with the Dirty Looks and small negative correlations with the Time Out, Reciprocal Communication, and Think Before Responding scales.

The Physical Assault-People scale had a large positive correlation with the Verbal Assault scale, moderate positive correlations with the Verbal Put Downs and Noisy Arguing scales, and a moderate negative correlation with the Control scale. Physical Assault-People had a small positive correlation with the Dirty Looks scale and a small negative correlation with the Time Out, Reciprocal Communication, and Think Before Responding scales.

The Verbal Put Downs scale demonstrated large positive correlations with the Noisy Arguing, Verbal Assault, and Dirty Looks. The Verbal Put Downs scale had a

moderate positive correlation with the In-Critical scale and moderate negative correlations with Control, Time Out, and Think Before Responding. The Verbal Put Downs scale also had small positive correlations with Body Language and In-Suppression and a small negative correlation with the Reciprocal Communication.

Table 10.

Correlations of Anger Expression Inventory Scales

	2	3	4	5	6	7	8	9	10	11	12	13
1	0.60*	0.36*	0.45*	0.45*	0.29*	0.03	0.05	0.08	-0.39*	-0.27*	-0.27*	-0.28*
2		0.41*	0.37*	0.50*	0.27*	-0.06	0.06	0.02	-0.36*	-0.26*	-0.26*	-0.23*
3			0.56*	0.62*	0.51*	0.26*	0.38*	0.17*	-0.39*	-0.35*	-0.26*	-0.34*
4				0.66*	0.48*	0.30*	0.26*	0.12*	-0.55*	-0.41*	-0.30*	-0.45*
5					0.52*	0.20*	0.26*	0.15*	-0.47*	-0.39*	-0.30*	-0.41*
6						0.48*	0.33*	0.24*	-0.35*	-0.24*	-0.23*	-0.32*
7							0.30*	0.26*	-0.07	0.01	0.06	-0.09
8								0.35*	-0.12*	-0.14*	-0.08	-0.14*
9									0.03	0.04	-0.08	-0.07
10										0.66*	0.54*	0.70*
11											0.54*	0.69*
12												0.58*

Note. $*p < .01$ and $r \geq .10$
1=Physical Assault-Objects; 2=Physical Assault-People; 3=Verbal Put Downs; 4=Noisy Arguing; 5=Verbal Assault; 6=Dirty Looks; 7=Body Language; 8=In-Critical; 9=In-Suppression; 10=Control; 11=Time Out; 12=Reciprocal Communication; 13=Think Before Responding

The Noisy Arguing scale had a large positive correlation with Verbal Assault and a large negative correlation with Control. The Noisy Arguing scale had positive

moderate correlations with the Dirty Looks and Body Language scales and negative moderate correlations with Time Out, Reciprocal Communication, and Think Before Responding. It also had small positive relationships with Body Language and In-Critical.,

The Verbal Assault scale had a large positive relationship with Dirty Looks and moderately negative relationships with Control, Time Out, Reciprocal Communication, and Think Before Responding. Verbal Assault had small positive correlations with Body Language, In-Critical, and In-Suppression.

Dirty Looks had moderate positive correlations with Body Language and In-Critical and moderate negative correlations with Control and Think Before Responding. It also had a small positive correlation with In-Suppression and small negative correlations with Time Out and Reciprocal Communication.

The Body Language and In-Critical scales had a moderate positive correlation. The Body Language scale also had a small positive correlation with In-Suppression.

The In-Critical scale had a moderate positive correlation with In-Suppression and had small negative correlations with Control, Time Out, and Think Before Responding.

The Control scale formed large positive correlations with Time Out, Reciprocal Communication, and Think Before Responding.

The Time Out scale formed large positive correlations with Reciprocal Communication and Think Before Responding.

Reciprocal Communication and Think Before Responding has a large positive correlation.

TAS, HAT Scales and the Anger Expression Scales. Correlations between the TAS, HAT scales, and the 13 scales of the Anger Expression Inventory are displayed in Table 11.

Table 11.

Correlations of the Trait Anger Scale, the Hostile Automatic Thoughts Scales, and the Anger Expression Inventory Scales

Anger Expression Inventory Scale	TAS	HAT: Physical Aggression	HAT: Derogation	HAT: Revenge
Physical Assault-Objects	0.51*	0.47*	0.16*	0.37*
Physical Assault-People	0.50*	0.51*	0.15*	0.41*
Verbal Put Downs	0.49*	0.38*	0.32*	0.40*
Noisy Arguing	0.55*	0.40*	0.31*	0.41*
Verbal Assault	0.60*	0.54*	0.37*	0.54*
Dirty Looks	0.45*	0.33*	0.36*	0.33*
Body Language	0.17*	0.01	0.23*	0.07
In-Critical	0.28*	0.19*	0.30*	0.26*
In-Suppression	0.21*	0.15*	0.19*	0.16*
Control	-0.54*	-0.38*	-0.20*	-0.35*
Time Out	-0.38*	-0.32*	-0.17*	-0.28*
Reciprocal Communication	-0.27*	-0.33*	-0.16*	-0.26*
Think Before Responding	-0.36*	-0.29*	-0.18*	-0.24*

Note. $*p < .01$ and $r \geq .10$

With the exception of two HAT scales, all of the correlations between the TAS, HAT scales, and the Anger Expression Inventory scales were significant. The two exceptions were a near-zero correlations between Body Language and HAT Physical Aggression and HAT Revenge.

The TAS had large positive correlations with Physical Assault-Objects, Physical Assault-People, Noisy Arguing, and Verbal Assault and a high negative correlation with Control. The TAS was moderately positively correlated with Verbal Put Downs and Dirty Looks and moderately negatively correlated with Time Out and Think Before Responding. The TAS formed small positive correlations with Body Language, In-

Critical, and In-Suppression and a small negative correlation with Reciprocal Communication.

The HAT Physical Aggression scale had large positive correlations with Physical Assault-People and Verbal Assault. The HAT Physical Aggression scale correlated moderately with Physical Assault-Objects, Verbal Put Downs, Noisy Arguing, and Dirty Looks. This scale also demonstrated moderate negative correlations with Control, Time Out, and Reciprocal Communication. Additionally, the HAT Physical Aggression scale formed small positive correlations with In-Critical and In-Suppression and a small negative correlation with Think Before Responding.

The HAT Derogation scale did not form large correlations with any form of anger expression; however, there were moderate positive correlations with Verbal Put Downs, Noisy Arguing, Verbal Assault, Dirty Looks, and In-Critical. The HAT Derogation scale had small positive correlations with the Physical Assault-Objects, Physical Assault-People, Body Language, and In-Suppression scales. It also had small negative correlations with the Control, Time Out, Reciprocal Communication, and Think Before Responding scales.

The HAT Revenge scale formed a large, positive correlation with Verbal Assault, and moderate positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, and Dirty Looks. The HAT Revenge scale was moderately negatively correlated with Control. The HAT Revenge scale had small positive correlations with In-Critical and In-Suppression and small negative correlations with Time Out, Reciprocal Communication, and Think Before Responding.

TAS, HAT Scales and the Anger Consequences Scale. Correlations for the TAS, HAT scales, and the Anger Consequences Scale factors are displayed in Table 12.

The TAS correlated positively with all factors of the Anger Consequences Scale. The TAS correlated moderately with Physical Aggression and Injury to Others, Verbal Fights, and Property Damage. The remaining correlations were small.

Table 12.

Correlations: The Trait Anger Scale, the Hostile Automatic Thoughts Scale and the Anger Consequences Scale Factors

Anger Consequences Scale Factors	Trait Anger Scale	HAT: Physical Aggression	HAT: Derogation	HAT: Revenge
Somatic Outcomes	0.26*	0.13*	0.17*	0.14*
Physical Aggression and Injury to Others	0.44*	0.44*	0.15*	0.36*
Mixture of Severe Consequences	0.12*	0.09	-0.01	0.09
Hurt Self Physically	0.21*	0.16*	0.06	0.13*
Verbal Fights	0.49*	0.44*	0.34*	0.50*
Reckless Driving	0.25*	0.22*	0.16*	0.21*
Negative School/Work Consequences	0.12*	0.07	0.10*	0.10*
Substance Abuse	0.24*	0.21*	0.15*	0.29*
Injury to Children/Animals	0.12*	0.13*	0.03	0.09
Property Damage	0.46*	0.48*	0.16*	0.38*
Negative Emotions	0.11*	0.11*	0.04	0.10*
Vocational Consequences	0.11*	0.12*	0.04	0.10*

Note. *$p < .01$ and $r \geq .10$

The HAT Physical Aggression scale was had moderate correlations with Physical Aggression and Injury to Others, Verbal Aggression Outcomes, and Property Damage. With the exception of two items that had near-zero correlations (Mixture of

Consequences and Negative School/Work Consequences), the remaining Anger Consequences factors formed small positive correlations with HAT Physical Aggression.

The HAT Derogation scale had a moderate positive correlation with Verbal Fights and small positive correlations with Somatic Outcomes, Physical Aggression and Injury to Others, Reckless Driving, Negative School/Work Consequences, Substance Abuse, and Property Damage.

The HAT Revenge scale formed a large positive correlation with Verbal Fights and moderate correlations with Physical Aggression and Injury to Others and Property Damage. It also had small positive correlations with the Somatic Outcomes, Hurt Self Physically, Reckless Driving, Negative School/Work Consequences, Substance Abuse, Negative Emotions, and Vocational Consequences factors.

Anger Expression Inventory and Anger Consequences Scale. Correlations for the Anger Consequences Scale Factors and the Anger Expression Inventory scales are displayed in Table 13. The majority of the significant correlations between the Anger Consequences Scale factors and the Anger Expression Scale were positive small associations ($r \geq 0.10$ and < 0.30).

Somatic Outcomes demonstrated positive small correlations with Physical Assault-Objects, Verbal Put Downs, Noisy Arguing, Verbal Assault, Dirty Looks, Body Language, In-Critical, and In-Suppression. Somatic Outcomes also demonstrated small negative correlations with Control and Think Before Responding.

Physical Aggression and Injury to Others formed positive small correlations with Noisy Arguing and Dirty Looks. Physical Aggression and Injury to Others also demonstrated small negative correlations with Control, Time-Out, Reciprocal

Communication, and Think Before Responding. Moderate positive correlations were formed between Physical Aggression and Injury to Others factor and Physical Assault-Objects, Verbal Put Downs, and Verbal Assault. A large positive correlation also existed between this factor and Physical Assault-People.

Mixture of Severe Consequences demonstrated small positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, and Verbal Assault. Mixture of Severe Consequences formed a small negative correlation with Control.

Hurt Self Physically formed small positive correlations with Physical Assault-Objects, Physical Assault-People, Noisy Arguing, Verbal Assault, Dirty Looks, and In-Suppression. It also formed small negative correlations with Control and Think Before Responding.

Verbal Fights formed small positive correlations with Body Language, In-Critical, and In-Suppression and a small negative correlation with the Reciprocal Communication scale. This factor also formed moderate positive correlations with Physical Assault-Objects, Physical Assault-People, Dirty Looks, and moderate negative correlations with Control, Time Out, and Think Before Responding. In addition, there were large positive correlations between Verbal Fights and Verbal Put Downs, Noisy Arguing, and the Verbal Assault.

Reckless Driving formed small positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, Dirty Looks, Verbal Assault, Body Language, In-Critical, and In-Suppression. Reckless driving also formed small negative correlations with Control, Time Out, and Think Before Responding.

Negative School/Work Consequences had small positive associations with Physical Assault-Objects, In-Critical, and In-Suppression.

Substance Abuse formed small positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, and Verbal Assault. Substance Abuse also formed small negative correlations with Control, Time Out, and Think Before Responding.

Injury to Children/Animals had small positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, and Verbal Assault.

Property Damage factor had positive small correlations with the Verbal Put Downs, Dirty Looks, and In-Suppression scales. It also had small negative associations with Time Out, Reciprocal Communication, and Think Before Responding. Property Damage formed moderate positive correlations with Noisy Arguing and Verbal Assault, and a moderate negative correlation with Control. There were large positive correlations between this factor the Physical Assault-Objects and Physical Assault-People.

Negative Emotions formed small positive associations with Physical Assault-Objects, Verbal Put Downs, Noisy Arguing, Verbal Assault, Dirty Looks, Body Language, In-Critical, and In-Suppression, and small negative correlations with Control and Think Before Responding.

Vocational Consequences had small positive correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, and In-Suppression.

Anger Consequences Severity Scale, the TAS, and HAT. Correlations for the Anger Consequences Severity Scale, the Trait Anger Scale, and the Hostile Automatic Thoughts Scale are displayed in Table 14.

Table 13.

Correlations: Anger Consequences Scale Factors and Anger Expression Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Somatic Outcomes	0.11*	0.05	0.12*	0.21*	0.14*	0.24*	0.28*	0.20*	0.30*	-0.21*	-0.06	0.03	-0.15*
2. Physical Aggression and Injury to Others	0.48*	0.67*	0.30*	0.28*	0.38*	0.23*	-0.05	0.05	0.05	-0.28*	-0.22**	-0.15*	-0.18*
3. Mixture of Severe Consequences	0.13*	0.18*	0.12*	0.10*	0.12*	0.02	0.00	0.02	-0.03	-0.11*	-0.06	-0.06	-0.06
4. Hurt Self Physically	0.25*	0.15*	0.08	0.16*	0.11*	0.11*	0.02	0.00	0.13*	-0.16*	-0.07	-0.06	-0.10*
5. Verbal Fights	0.35*	0.37*	0.51*	0.54*	0.62*	0.39*	0.18*	0.26*	0.14*	-0.44*	-0.37*	-0.21*	-0.36*
6. Reckless Driving	0.22*	0.15*	0.20*	0.19*	0.26*	0.19*	0.12*	0.12*	0.19*	-0.16*	-0.13*	-0.05	-0.15*
7. Negative School/Work Consequences	0.11*	0.09*	0.07*	0.06	0.07	0.08	0.08	0.15*	0.18*	-0.01	0.01	0.01	-0.05
8. Substance Abuse	0.18*	0.21*	0.15*	0.17*	0.28*	0.07	-0.01	0.01	0.03	-0.18*	-0.14*	-0.08	-0.12*
9. Injury to Children/Animals	0.11*	0.18*	0.14*	0.09	0.12*	0.05	-0.01	-0.02	-0.01	-0.05	-0.04	-0.06	-0.03
10. Property Damage	0.69*	0.52*	0.26*	0.34*	0.36*	0.20*	-0.02	0.07	0.14*	-0.31*	-0.26*	-0.24*	-0.23*
11. Negative Emotions	0.14*	0.01	0.15*	0.21*	0.15*	0.20*	0.20*	0.23*	0.26*	-0.20*	-0.06	0.00	-0.16*
12. Vocational Consequences	0.14*	0.17*	0.11*	0.12*	0.09	0.05	0.07	0.10*	0.06	-0.03	-0.05	0.01	-0.04

Note. *$p < .01$ and $r \geq .10$

1=Physical Assault-Objects; 2=Physical Assault-People; 3=Verbal Put Downs; 4=Noisy Arguing; 5=Verbal Assault; 6=Dirty Looks; 7=Body Language; 8=In-Critical; 9=In-Suppression; 10=Control; 11=Time Out; 12=Reciprocal Communication; 13=Think Before Responding.

There were several small positive correlations between the TAS, HAT Physical Aggression Scale, HAT Revenge Scale, and ACSS items. Physical Damage-Self was positively correlated with the TAS and HAT Physical Aggression. Physical Damage-Other, Property Damage, Legal/Official Consequences, Reported Cost, and Total Number of Consequences positively correlated with the TAS, HAT Physical Aggression Scale, and the HAT Revenge Scale. There were no significant correlations between the HAT Derogation Scale and any of the ACSS items. Additionally, there were no significant correlations between any of the predictors and Relationship Damage, Work/School Problems, and Damage to Self-Esteem.

Table 14.

Correlations: Anger Consequences Severity Scale, the TAS, and the HAT Scales

Anger Consequences Severity Scale	TAS	HAT: Physical Aggression	HAT: Derogation	HAT: Revenge
Physical Damage-Self	0.15*	0.11*	0.04	0.07
Physical Damage-Other	0.25*	0.29*	0.08	0.24*
Property Damage	0.16*	0.10*	0.07	0.11*
Relationship Damage	0.05	-0.01	0.02	0.02
Work/School Problems	0.09	0.02	0.05	0.02
Legal/Official Consequences	0.18*	0.14*	0.07	0.15*
Damage to Self-Esteem	0.05	0.00	-0.04	-0.02
Reported Cost	0.16*	0.15*	0.06	0.13*
Total Number of Consequences	0.23*	0.16*	0.08	0.14*

Note. *$p < .01$ and $r \geq .10$

Anger Consequences Severity Scale and the Anger Expression Scales.

Correlations for the Anger Consequences Severity Scale and the Anger Expression Scales are displayed in Table 15.

There were several small correlations and one moderate correlation between the Anger Expression Scales and the ACSS items. Physical Damage-Self was positively correlated with Physical Assault Objects, Noisy Arguing, and Verbal Assault Anger Expression and a small negative correlation with Control. Physical Damage-Other had small positive correlations with Physical Assault Objects, Verbal Put Downs, Noisy Arguing, and Verbal Assault. It also demonstrated small negative correlations with Body Language, Control, Time Out, and Think Before Responding and moderate positive correlation with Physical Assault-People. Property Damage formed small positive correlations with Physical Assault-Objects, Physical Assault-People, and Verbal Assault. This item also formed small negative correlations with Control and Think Before Responding. Relationship Damage demonstrated small positive correlations with Verbal Put Downs, Noisy Arguing, Body Language, In-Suppression, and In-Critical. Legal/Official Consequences, Reported Cost, and Total Number of Consequences formed positive small correlations with Physical Assault-Objects, Physical Assault-People, Verbal Put Downs, Noisy Arguing, and Verbal Assault. They also demonstrated small negative correlations between the Control and Think Before Responding scales. Reported Cost and Total Number of Consequences also formed small positive correlations with Dirty Looks. Damage to Self-Esteem formed small positive correlations with In-Critical and In-Suppression. There were no significant correlations with Work/School Problems.

Table 15.

Correlations: Anger Consequences Severity Scale and Anger Expression Scale

	1	2	3	4	5	6	7	8	9	10	11	12	13
Physical Damage-Self	.16*	.08	.09	.14*	.11*	.03	-.06	-.04	.06	-.10*	-.04	-.02	-.03
Physical Damage-Other	.23*	.32*	.18*	.17*	.23*	.04	-.12*	-.02	-.02	-.18*	-.15*	-.09	-.10*
Property Damage	.22*	.16*	.08	.08	.10*	.07	-.09	-.01	.08	-.12*	-.08	-.09	-.11*
Relationship Damage	.00	-.03	.11*	.12*	.09	.06	.18*	.11*	.10*	-.07	-.04	.07	-.05
Work/School Problems	.05	.02	.02	.08	.03	.06	.02	.07	.08	-.06	.04	.03	-.01
Legal/Official Consequences	.18*	.15*	.11*	.10*	.13*	.05	-.06	.02	.01	-.14*	-.13*	-.09	-.10*
Damage to Self-Esteem	.02	-.06	.06	.09	.01	.01	.06	.11*	.11*	-.07	-.03	.05	-.06
Reported Cost	.11*	.11*	.17*	.17*	.16*	.10*	.06	.09	.09	-.15*	-.11*	-.03	-.12*
Total Number of Consequences	.21*	.12*	.16*	.23*	.18*	.10*	.04	.09	.12*	-.19*	-.09	.00	-.11*

Note. *$p < .01$ and $r \geq .10$

1=Physical Assault-Objects; 2=Physical Assault-People; 3=Verbal Put Downs; 4=Noisy Arguing; 5=Verbal Assault; 6=Dirty Looks; 7=Body Language; 8=In-Critical; 9=In-Suppression; 10=Control; 11=Time Out; 12=Reciprocal Communication; 13=Think Before Responding.

Anger Consequences Severity Scale and the Anger Consequences Scale. As a reminder, it is important to note that the ACSS and ACQ-R measure two different aspects of anger consequences. The ACSS measures the severity or intensity of the anger consequence in a specific worst case anger-involved event, whereas the ACQ-R measures the frequency of anger consequences across time. Correlations for the Anger Consequences Severity Scale and the Anger Consequences Scale are displayed in Table 16.

All significant correlations (i.e., all correlations that met the $p < .05$ and $r \geq .10$) were positive. Physical Damage-Self had small correlations with Somatic Outcomes, Physical Aggression and Injury to Others, Hurt Self Physically, Verbal Fights, Reckless Driving, Substance Abuse, Property Damage, and Negative Emotions. Physical Damage-Other was moderately correlated with Physical Aggression and Injury to Others. This item also demonstrated small correlations with Mixture of Severe Consequences, Verbal Fights, Substance Abuse, Injury to Children, and Property Damage. Property Damage had small correlations with Physical Aggression and Injury to Others, Hurt Self Physically, Verbal Fights, Reckless Driving, Substance Abuse, and Property Damage. Relationship Damage demonstrated small correlations with Somatic Outcomes, Verbal Fights, Negative School/Work Consequences, and Negative Emotions. Work/School Problems was moderately correlated with Negative School/Work Consequences and had small correlations with Somatic Outcomes, Hurt Self Physically, Verbal Fights, and Negative Emotions. Legal/Official Consequences demonstrated small correlations with Physical Aggression and Injury to Others, Hurt Self Physically, Verbal Fights, and Property Damage. Damage to Self-Esteem demonstrated a moderate correlation with Negative Emotions and small correlations with Hurt Self Physically and Verbal Fights.

Cost demonstrate small correlations with all the Anger Consequences Scale items, except for Injury to Children/Animals and Vocational Consequences. Lastly, Total Number of Consequences demonstrate a moderate correlation with Negative Emotions and small correlations with all other items except for Mixture of Severe Consequences, Injury to Children/Animals and Vocational Consequences.

Table 16.

Correlations: Anger Consequences Severity Scale and Anger Consequences Scale

	1	2	3	4	5	6	7	8	9	10	11	12
Physical Damage-Self	.16*	.10*	-.01	.28	.11*	.10*	.05	.14*	.00	.14*	.12*	.02
Physical Damage-Other	.01	.30*	.10*	.06	.19*	.07	-.01	.25*	.15*	.19*	-.04	-.02
Property Damage	.06	.16*	.07	.10*	.13*	.12*	.07	.15*	.06	.26*	.04	.03
Relationship Damage	.18*	-.02	-.02	.03	.18*	.06	.10*	.08	-.06	.00	.20*	-.04
Work/School Problems	.15*	.00	.02	.14*	.11*	.09	.30*	.05	-.01	.04	.19*	.00
Legal/Official Consequences	-.02	.12*	-.01	.17*	.15*	.00	.01	.02	-.01	.20*	.05	-.03
Damage to Self-Esteem	.09	-.06	-.04	.11*	.12*	.03	.08	.00	-.02	.03	.30*	.01
Reported Cost	.17*	.15*	.12*	.15*	.23*	.10*	.17*	.16*	.01	.15*	.23*	.06
Total Number of Consequences	.20*	.13*	.01	.20*	.29*	.14*	.20*	.18*	-.01	.21*	.30*	-.01

Note: $*p < .01$ and $r \geq .10$

1= Somatic Outcomes, 2=Physical Aggression and Injury to Others, 3=Mixture of Severe Consequences, 4=Hurt Self Physically, 5=Verbal Fights, 6=Reckless Driving, 7=Negative School/Work Consequences, 8=Substance Abuse, 9=Injury to Children/Animals, 10=Property Damage, 11=Negative Emotions, and 12=Vocational Consequences.

The Best Predictors of Anger Consequences

To explore the best predictors of anger consequences, hierarchical regression analyses were conducted. Sex, trait anger, the three HAT scales, and the 12 Anger Expression scales were entered on Step 1. Sex was coded 0 for males and 1 for females, such that a negative β reflects men reporting more of the consequence, whereas a positive β demonstrates women reporting more of the consequence. All anger-related predictors were centered on the *M* for that variable, and centered variables were entered into the regression model. Sex by anger variable interactions was entered on Step 2. Interactions were created by multiplying the sex code by the centered variable value.

Because of the sample size and the number of interactions (i.e., 16), it was important not to over-interpret small, but statistically significant findings. As such, the two criteria of being statistically significant ($p < .05$) and accounting for at least 1% of the variance were retained. That is, for an interaction to be considered meaningful and interpretable, it had to be statistically significant and account for a least 1% of the variance. Three successive criteria had to be met for an individual interaction to be deemed meaningful. First, if the set of interactions was not significant, then none of the individual interactions was explored. Second, if the set of interactions was significant, then the *t* values for the individual β were explored. If none of the individual interactions were significant, then individual interactions were not explored further. If on the second step one or more of the individual interactions were significant, then the regression model was re-run with significant interactions entered individually on Step 2. If the interaction accounted for more than 1% of the variance, then it was considered to be significant and meaningful. If it accounted for less than 1% of the variance, then it did not meet the

percent variance criterion and was not considered meaningful. It is acknowledged that this last evaluation is a somewhat liberal test in that shared variance with other variables was entered on Step 2 when the single sex by variable interaction was entered, but it attempted to correct for over-interpreting interactions not meeting at least the lower limit of a small effect size. Interactions meeting these criteria were considered evidence for sex moderation of findings.

Because of the large number of predictors and interactions, tables will present the model omnibus F, significance level, and ΔR^2 for each step. Furthermore, tables will present only variables making significant contributions on Step 1 and interactions meeting the criteria outlined above. That is, variables that are not listed in a table are not statistically significant or do not meet the 1% of variance criteria. This was done to simplify tables and make them more readable.

Anger Consequences Scale-Revised

Hierarchical regression models for sex, anger predictors, and sex by anger interactions in the prediction of the frequency of anger consequences are summarized in Table 17.

Anger-related Somatic Outcomes. Step 1was significant and accounted for 23.6% of the variance in anger-related somatic consequences. The set of sex by predictor interactions was not significant. Women reported more frequent anger-related physical outcomes. Increased levels of trait anger, negative body language in the expression anger, anger suppression, reciprocal communication, and lower levels of anger control

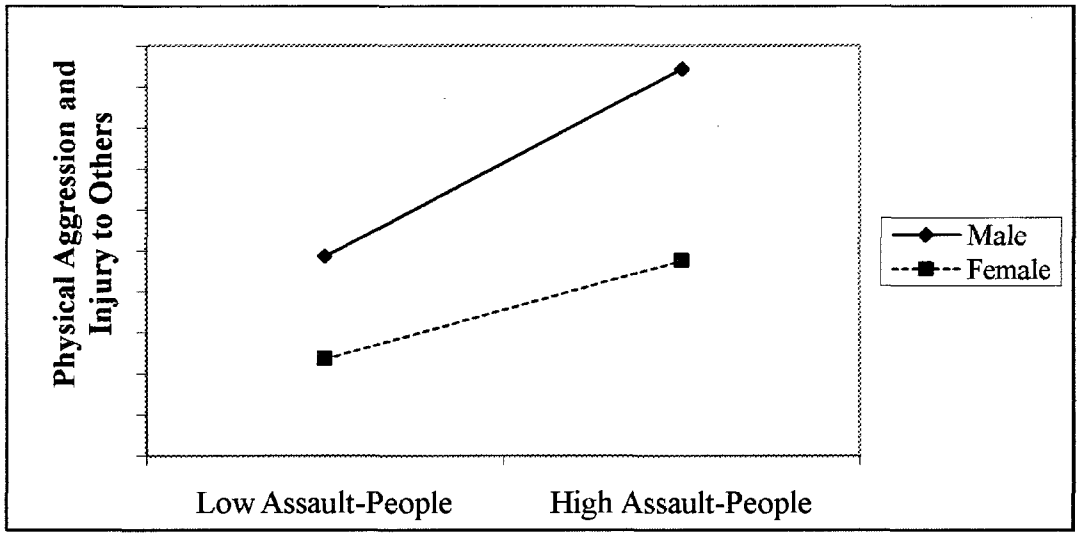
predicted anger-related somatic outcomes. Because reciprocal communication had a negative correlation with somatic outcomes, but a positive β weight in the regression model, it was deemed a suppressor variable.

Anger-related Physical Aggression and Injury to Others. Sex and emotional, cognitive, and expressive anger variables on Step 1 contributed 49.1% of the variance, and the set of sex by variable interactions contributed an additional, significant 2.0% of variance on Step 2. Men reported significantly more anger consequences that involved physical aggression and injury of others. Higher levels of trait anger, use of physically assaultive means of expressing anger toward objects and people, and reciprocal communication predicted higher levels of physical aggression and injury to others. Given the negative correlation of reciprocal communication and physical aggression and injury to others, reciprocal communication again served as a suppressor variable. The set of interactions of sex with variables was significant, with the individual interaction of assault people x sex meeting the 1.0% of variance criterion. Results from the interaction (Figure 1) indicate that the slope for male respondents is steeper than for the female respondents. This suggests that while both males and females experience anger consequences related to physical aggression and injury to others when they engage in physically assaultive anger expression towards others, it is the male respondents who experience more negative consequences.

Anger-related Mixture of Severe Consequences. Step 1 was significant and accounted for 5.2% of the variance in mixture of severe consequences. The set of sex by predictor interactions was not significant. Only the expression of anger by assaulting people was significantly associated with a mixture of severe anger-related consequences.

Figure 1.

Interaction of Sex and Anger Expression Involving Assaulting Others on the Anger Consequence of Physical Aggression and Injury to Others



Anger-related Physical Injury to Self. Sex and emotional, cognitive, and expressive anger variables on Step 1 contributed 10.4% of the variance. The set of interactions of sex with variables was not significant. Females reported significantly more anger consequences that involved injury to self. Higher levels of anger expression involving assault on objects and anger suppression predicted higher levels of physical injury to self.

Anger-related Verbal Fights. Step 1 was significant and accounted for 47.5% of the variance in verbal fights. The set of sex by predictor interactions was not significant. Individuals who reported higher levels of revenge-related hostile automatic thoughts reported more frequent anger-related verbal fights. Additionally, anger expression related to verbal put downs, noisy arguing, and verbal assault were also significantly related to the anger consequence of verbal fighting. Controlling negative expression of anger was negatively associated with verbal fights. Reciprocal communication also

predicted anger-related verbal fights; however, because reciprocal communications had a negative correlation with verbal fights, but a positive β weight in the regression model, it was deemed to be a suppressor variable.

Anger-related Reckless Driving. Step 1 was significant and accounted for 12.4% of the variance in anger-related reckless driving and the set of sex by variable interactions contributed an additional, significant 3.4% of variance on Step 2; however, none of the individual interaction met the 1.0% variance accounted for criterion for inclusion. Higher levels of anger expression involving assault on objects, verbal assault, anger suppression, and reciprocal communication predicted higher levels of reckless driving. Given the negative correlation of reciprocal communication and reckless driving, reciprocal communication again served as a suppressor variable.

Anger-related Negative School/Work Consequences. Step 1 was significant and accounted for 6.7 % of the variance in negative school/work consequences. The set of sex by predictor interactions was not significant. Individuals who reported higher levels of negative anger-related critical thoughts and anger suppression also reported more negative school/work consequences. Additionally, individuals who reported a decrease in thinking before responding when angry also reported significantly higher levels of negative school/work consequences.

Anger-related Substance Abuse. Step 1 was significant and accounted for 12.9% of the variance in anger-related substance abuse consequences. The set of sex by predictor interactions was not significant. Hostile automatic thoughts relating to aggression and revenge were significantly associated with anger-related substance abuse. Similarly, anger expression involving verbal assault predicted anger-related substance

Table 17.

Hierarchical Regressions on Frequency of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Somatic Outcomes					
1	Sex	.14	3.68***	13.34***	.236
	Trait Anger Scale	.13	2.65**		
	Body Language	.10	2.55*		
	In-Suppression	.24	6.62***		
	Control	-.22	-3.94***		
	Reciprocal Communication	.17	3.96***		
2	None—set of interactions not significant			1.31	.022
Model for Physical Aggression and Injury to Others					
1	Sex	-.07	-2.12*	41.52***	.491
	Trait Anger Scale	.10	2.42*		
	Assault—Objects	.08	2.13**		
	Assault—People	.55	15.27***		
	Reciprocal Communication	.10	2.81**		
2	Set of interactions			1.79*	.020
	Sex by Assault People	-.15	-4.69***		.014
Model for Mixture of Severe Consequences					
1	Assault-People	.16	3.30**	2.38***	.052
2	None—set of interactions not significant			0.92	.019

Table 17. (continued)

Hierarchical Regressions on Frequency of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Hurt Self Physically					
1	Sex	.10	2.30*	5.01***	.104
	Assault—Objects	.20	4.31***		
	In-Suppression	.13	3.29**		
2	None—set of interactions not significant			1.60	.031
Model for Verbal Fights					
1	HAT Revenge	.21	4.53***	39.79***	.475
	Verbal Put Downs	.11	3.07**		
	Noisy Arguing	.12	2.87**		
	Verbal Assault	.28	6.60***		
	Control	-.11	-2.45*		
	Reciprocal Communication	.11	3.15**		
2	None—set of interactions not significant			1.60	.018
Model for Reckless Driving					
1	Assault—Objects	.13	2.86**	6.09***	.124
	Verbal Assault	.14	2.55*		
	In-Suppression	.14	3.58***		
	Reciprocal Communication	.12	2.55*		
2	None—no interaction accounted for 1% of variance			1.79*	.034

Table 17. (Continued)

Hierarchical Regressions on Frequency of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Negative School/Work Consequences					
1	In-Critical	.09	2.17*	3.09***	.067
	In-Suppression	.13	3.36**		
	Think Before Responding	-.12	-2.17*		
2	None—set of interactions not significant			0.98	.020
Model for Substance Abuse					
1	HAT Aggression	-.13	-2.19*	6.41***	.129
	HAT Revenge	.26	4.44***		
	Verbal Assault	.21	3.77***		
	Dirty Looks	-.11	-2.36*		
	In-Critical	-.08	-2.05*		
2	None—set of interactions not significant			1.46	.028
Model for Injury to Children/Animals					
1	Assault-People	.14	2.86**	2.34**	.051
	Verbal Put Downs	.13	2.55*		
2	None—set of interactions not significant			1.60	.033

Table 17. (Continued)

Hierarchical Regressions on Frequency of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Property Damage					
1	Sex	-.09	-2.99**	49.63***	.535
	TAS	.09	2.51*		
	HAT Aggression	.13	2.99**		
	Assault—Objects	.51	15.06***		
	Assault—People	.13	3.74***		
	Verbal Put Downs	-.07	-2.01*		
	In-Suppression	.08	3.05**		
2	None—no interaction accounted for 1% of variance			2.07**	.021
Model for Negative Emotions					
1	HAT Revenge	.12	2.02*	9.52***	.181
	Assault—Objects	.11	2.46*		
	Assault—People	-.13	-2.88**		
	In-Critical	.11	2.85**		
	In-Suppression	.19	5.03***		
	Control	-.19	-3.42**		
	Time Out	.10	2.07*		
	Reciprocal Communication	.15	3.35**		
2	None—set of interactions not significant			0.94	.017

Table 17. (Continued)

Hierarchical Regressions on Frequency of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Vocational Consequences					
1	Assault—People	.16	3.23**	2.74***	.060
2	None—set of interactions not significant			0.98	.020

Note. *$p < .05$, **$p < .01$, ***$p < .001$

abuse. Anger expression related to dirty looks and critical thoughts were negatively associated with anger-related substance abuse.

Anger-related Injury to Children/Animals. Step 1 was significant and accounted for 5.1% of the variance in anger-related injury to children and animals. The set of sex by predictor interactions was not significant. Anger expression involving assaulting people and verbal put downs predicted anger-related injury to children and animals.

Anger-related Property Damage. Sex and emotional, cognitive, and expressive anger variables on Step 1 contributed 53.5% of the variance, and the set of sex by variable interactions contributed an additional, significant 2.1% of variance on Step 2; however, none of the individual significant interactions met the 1.0% variance accounted for criterion. Men reported significantly more anger consequences that involved property damage. Higher levels of trait anger, hostile aggressive thoughts, assault on objects, assault on people, verbal put downs, and anger suppression were predictive of higher levels of anger-related property damage.

Anger-related Negative Emotions. Step 1 was significant and accounted for 18.1% of the variance in anger-related negative emotional consequences. The set of sex

by predictor interactions was not significant. Individuals who reported higher levels of revenge-related hostile thoughts reported higher levels of anger-related negative emotions. Anger expression involving assaulting objects, assaulting people, critical thoughts, suppressing anger expression, time out, and positive reciprocal communication significantly predicted negative emotions. Controlling anger expression was negatively associated with anger-related negative emotions. Because reciprocal communication had a negative correlation with negative emotions, but a positive β weight in the regression model, it was deemed a suppressor variable.

Anger-related Vocational Consequences. Step 1 was significant and accounted for 6.0% of the variance in vocational consequences. The set of sex by predictor interactions was not significant. Anger expression involving assaulting people was the only significant predictor for vocational consequences.

Anger Consequences Severity Scale

Hierarchical regression models for sex, anger predictors, and sex by anger interactions in the prediction of the severity of anger consequences are summarized in Table 18. Similar to the predictors of the frequency of anger consequences, Table 18 presents only the model omnibus F, significance level, and ΔR^2 for each step.

Physical Damage-Self. Step 1 was significant and accounted for 7.2% of the variance in anger-related consequences involving injury to self. The set of sex by predictor interactions was not significant. Anger expression involving assaulting people, noisy arguing, and suppressing anger were significant predictors. Anger-related negative body language and critical thoughts were negatively associated for damage/health

problems to self. Given the negative correlation of Reciprocal Communication and Physical Damage-Self, reciprocal communication again served as a suppressor variable.

Physical Damage-Other. The variables on Step 1 contributed 15.7% of the variance, and the set of sex by variable interactions contributed an additional, significant 5.3% of variance of Step 2. However, since no single interaction accounted for 1.0% of the variance, the interactions were not interpreted. Higher levels of aggressive hostile thoughts and expression of anger by physically assaulting people predicted higher levels of physical/health problems happening to others. Lower levels of anger expression involving dirty looks and negative body language were also predictive of physical/health problems happening to others.

Property Damage. Step 1 was significant and accounted for 9.5% of the variance in damage to objects/property occurring as result of a specific anger-related incident. The set of sex by predictor interactions was not significant. Male respondents reported a higher degree of damage to objects/property than female respondents did. Anger expression towards objects and suppressing anger expression were predictors of damage to objects/property. Physically aggressive hostile thoughts and anger-related body language were negatively associated with damage to objects/property.

Relationship Damage. Step 1 was significant and accounted for 7.9% of the variance in a damaged relationship resulting from a specific anger-related incident. The set of sex by predictor interactions was not significant. Female respondents reported a higher degree of damaged relationships than males. Anger expression relating to negative body language, anger suppression, and reciprocal communication were significantly associated with relationship damage. Anger expression involving dirty

Table 18.

Hierarchical Regressions on Severity of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Physical Damage-Self					
1	Assault--Objects	.11	2.33*	3.27***	.072
	Noisy Arguing	.12	2.16*		
	Body Language	-.13	-2.77**		
	In-Critical	-.10	-2.48*		
	In-Suppression	.10	2.47*		
2	None—set of interactions not significant			0.77	.01
Model for Physical Damage-Other					
1	HAT Aggression	.14	2.24*	7.93***	.157
	Assault—People	.18	3.86***		
	Dirty Looks	-.09	-1.99*		
	Body Language	-.10	-2.21*		
2	None—no interaction accounted for 1% of variance			2.73***	.053
Model for Property Damage					
1	Sex	-.13	-2.97**	4.45***	.095
	HAT Aggression	-.13	-2.15*		
	Assault—Objects	.17	3.52***		
	Body Language	-.13	-2.98**		
	In-Suppression	.10	2.52*		
2	None—set of interactions not significant			0.76	.015

Table 18. (Continued)

Hierarchical Regressions on Severity of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Relationship Damage					
1	Sex	.12	2.74**	3.63***	.079
	Dirty Looks	-.11	-2.27*		
	Body Language	.11	2.42*		
	In-Suppression	.07	1.98*		
	Reciprocal Communication	.12	2.40*		
2	None—set of interactions not significant			0.71	.015
Model for Work/School Problems					
1	Time Out	.12	2.21*	1.66*	.038
2	None—set of interactions not significant			1.30	.028
Model for: Legal/Official Consequences					
1	Trait Anger Scale	.12	2.21*	2.63***	.058
	Assault-Objects	.10	2.12*		
2	None—set of interactions not significant			0.91	.019

Table 18. (Continued)

Hierarchical Regressions on Severity of Anger Consequences with Sex and Anger Variables on Step 1 and Sex by Anger Variable Interactions on Step 2

Step	Variables Entered	β on Step	*t* for β on Step	*F* to Enter Step	ΔR^2
Model for Damage to Self-Esteem					
1	Sex	.12	2.64**	2.99***	.066
	HAT Derogatory	-.10	-2.24*		
	Verbal Put Downs	-.12	-2.43*		
	In-Critical	.10	2.31*		
	In-Suppression	.10	2.48*		
	Reciprocal Communication	.10	2.09*		
2	None—set of interactions not significant			0.90	.019
Model for Reported Cost					
1	None—no variable was significant			2.64***	.059
2	None—set of interactions not significant			1.39	.029
Model for Total Number of Consequences					
1	Sex	.12	2.82**	5.91***	.123
	Assault-Objects	.15	3.21**		
	Verbal Assault	.13	2.41*		
	In-Suppression	.11	2.77**		
	Control	-.13	-2.15*		
Reciprocal Communication		.13	2.76**		
2	None—set of interactions not significant			1.10	.021

*$p < .05$, **$p < .01$, ***$p < .001$

looks was negatively associated with damaged relationships. Since reciprocal communications had a negative correlation with Relationship Damage, but a positive β weight in the regression model, it was a suppressor variable.

Work/School Problems. Step 1 was significant and accounted for 3.8% of the variance in work/school problems. The set of sex by predictor interactions was not significant. Anger expression involving time out was the only significant predictor for this outcome variable.

Legal/Official Consequences. Step 1 was significant and accounted for 5.8% of the variance in official consequences relating to a specific anger-related incident. The set of sex by predictor interactions was not significant. Trait anger and anger expression involving assaulting objects predicted official consequences.

Damage to Self-Esteem. Step 1 was significant and accounted for 6.6% of the variance in feeling badly about oneself due to a specific anger-related incident. The set of sex by predictor interactions was not significant. Female respondents were more likely to endorse feeling bad about themselves than male respondents were. Anger expression involving critical thoughts, anger suppression, and reciprocal communication also predicated negative feelings about oneself. Hostile derogatory thoughts and verbal put downs were negatively associated with feeling a bad about ones self. Since reciprocal communications had a near zero correlation with Damage to Self-Esteem, but a positive β weight in the regression model, it was a suppressor variable.

Reported Cost. Step 1 was significant and accounted for 5.9% of the variance in overall cost for a specific anger-related incident; however, none of the individual predictors was significant. The set of sex by predictor interactions was not significant.

Total Number of Consequences. Step 1 was significant and accounted for 12.3% of the variance in overall negative consequences for a specific anger-related incident. The set of sex by predictor interactions was not significant. Female respondents were more likely to report more consequences. Higher levels of expression by assaulting objects, noisy arguing, verbal assault, and anger suppression and lower levels of anger control were associated with a higher level of Total Number of Consequences in anger consequences. Since reciprocal communications had a near zero correlation with Total Number of Consequences, but a positive β weight in the regression model, it was a suppressor variable.

Chapter IV

DISSCUSSION

Broadly speaking, the purpose of this study was to explore a new measure of the frequency of anger consequences and to explore the predictors of both the frequency and severity of anger consequences as they pertain to sex, trait anger, angry cognitions, and forms of anger expression. Additionally, this study separated the types of anger consequences into two distinct categories: the frequency of anger consequences (ACQ-R) and the severity of anger consequences (ACSS). Eight hundred and three participants completed the Trait Anger Scale (TAS), Anger Expression Inventory (AX), Hostile Automatic Thoughts Inventory (HAT), Anger Consequences Questionnaire-Revised (ACQ-R), and Anger Consequence Severity Scale (ACSS). Statistical analysis for this project began by subjecting the ACQ-R to exploratory factor analysis. Primary analyses were hierarchical regressions on variables from the ACQ-R and ACSS with predictors of TAS, AX scales, HAT scales, and sex by scale interactions.

Limitations and Strengths of the Study

A primary limitation resides with the participants. They were predominately young (mean age was 18.8 years), White (81.8%), freshmen (70.1%) undergraduate psychology students. While a meaningful population in their own right, clearly results cannot be readily generalized to older or younger, diverse groups. Further research will be needed to establish the degree of generalization of findings.

Another limitation of the study has to do with the nature of the data. The study relied upon self-report data, which may call into question the reliability of reporting, including socially desirable responding. For example, a number of questions (e.g., whether the person had "physically hurt a child") may lead to socially acceptable or desirable, rather than truthful responses. However, self-reporting was the only feasible manner of collecting information on a large number of anger consequences, and underreporting should, if anything, weaken the relationships to predictors.

Another issue is the number of predictors chosen for the study. On the one hand, predictors were chosen from three logically relevant domains—cognitive (HAT variables), emotional (trait anger), and behavioral/expressive (forms of anger expression). On the other hand, there were a significant number of variables, which may increase the probability of significant correlations with predictors. This problem was compounded by the large sample size, which, while valuable for other reasons, increases the probability that relatively small correlations would be statistically significant. Several safeguards were undertaken to minimize these problems. First, indices of effect size were combined with statistical significance to reduce the probability that statistically significant, but very small relationships were not over-interpreted. Specifically, correlations and other relationships were not considered meaningful unless they met criteria for at least the lower limit of a small effect size. Second, hierarchical regression analyses were considered the primary analytic format from which conclusions were drawn. Hierarchical regression controls the common variance among variables, identifying the most powerful predictors when such variance is controlled. Third, a series of criteria were employed to reduce chances that small sex by variable interactions in regression

models were not over-interpreted. Specifically, not only did the set of interactions have to be statistically significant and account for at least 1% of the explained variance, but any individual statistically significant interaction also had to account for at least 1% of the variance. These statistical corrections are believed to reduce the probability of over-interpreting statistically significant, but not very meaningful findings generated by a large sample size and many different predictors.

Despite the limitations of this study, there are several strengths to this study. First, a large number of anger consequences were sampled for inclusion in the ACQ-R. Second, the large sample size allowed for factor analysis and the development of the ACQ-R. The large sample size also facilitated the exploration of a number of variables that may influence the outcome of anger consequences. Third, the research approached anger consequences from two different perspectives (i.e., the frequency of consequences over time and the severity of consequences in a specific, intense anger event). Although it was an empirical question, these approaches were not highly correlated and may lead to somewhat different understandings of anger consequences, because they addressed the issue in different ways. These strengths, combined with the statistical safeguards outlined previous, are believed to provide a meaningful basis from which to explore relationships of cognitive, emotional and behavioral/expressive variables in the understanding and prediction of anger-related consequences.

New Measure of Anger Consequences

An important part of this study involved reworking the original 33-item Anger Consequences Questionnaire to include 88 more items. The new questionnaire was given to a large sample and subjected to exploratory factor analysis with stringent criteria for

item inclusion. The resulting Anger Consequences Questionnaire-Revised (ACQ-R) contained 12 factors. The ACQ-R demonstrated solid psychometric properties, such as strong internal alpha reliabilities and, as discussed below, demonstrated comparable factors when compared to previous versions of the ACQ.

Incremental Validity. An important aspect of improving or updating a preexisting scale is to assess the incremental validity. Incremental validity asks "does a measure add to the prediction of a criterion above what can be predicted by other sources of data?" (Hunsley & Meyer, 2003, p. 445). In order to explore the incremental validity of the ACQ-R, it was compared with previous versions of the Anger Consequences Questionnaire. When the 12 factors of the ACQ-R were compared with the five factors from the exploratory factor analysis detailed by Dahlen and Martin (2006), four factors from the ACQ-R were found to be very similar to four of their five factors. Additionally, when the ACQ-R was compared with the original ACQ (Deffenbacher, Oetting, Lynch, et al., 1996a), five of the original eight clusters of consequences were replicated with the factor analysis conducted for the present study. The three clusters that were partially replicated were the "Alcohol Use" cluster on the original ACQ versus the "Substance Abuse" factor on the ACQ-R, the "Legal/Vocational Difficulties" on the original ACQ versus "Vocational Consequences" on the ACQ-R and "Verbal Fights" on one earlier version of the ACQ. The Damaged Friendships cluster did not replicate. Additionally, the ACQ-R identified four new anger-related consequences. Comparative information on the different ACQ versions is presented in Table 19.

As Table 19 demonstrates, most of the clusters from the 1996 ACQ (Deffenbacher, et al.) were replicated by the ACQ-R factor structure, whereas four of the

five factors of the 2006 ACQ (Dahlen & Martin). The most notable exception is in reference to the "Damaged Friendships" domains that exist on the 1996 and 2006

Table 19.

Comparison with the ACQ-R and previous versions of the ACQ*

ACQ* (1996)	ACQ** (2006)	ACQ-R (2008)
Negative Emotions (6 items)	Negative Emotions (13 items)	Negative Emotion (8 item)
Physical Fights (4 items)	Aggression (8 items)	Physical Aggression and Injury to Others (10 items)
Alcohol Use (2 items)	Drug/Alcohol Use (3 items)	Substance Abuse (3 items)
Hurt Self Physically (3 items)	Self-Harm (3 items)	Hurt Self Physically (4 items)
Damaged Friendships (3 items)	Damaged Friendships (3 items)	N/A
Legal/Vocational Difficulties (3 items)	N/A	Vocational Consequences (2 items)
Property Damage (3 items)	N/A	Property Damage (6 items)
Verbal Fights (2 items)	N/A	Verbal Fights (9 items)
		Injury to Children and Animals (2 items)
		Reckless Driving (3 items)
		Mixture of Severe Consequences (6 items)
		Somatic Outcomes (6 items)

*Deffenbacher, Oetting, Lynch, et al.,. (1996a) **Dahlen & Martin (2006)

versions of the ACQ, but was not replicated on the updated ACQ-R. With the addition of new item to the item-pool of the ACQ-R for the current study, it is not surprising that more anger-related consequences emerged than in previous investigations. As such, the new factors on the ACQ-R provide a more complete picture of possible anger-related consequences as compared to previous versions. It also gives new possibilities in terms of understanding specific consequences that may have clinical and social implications.

Reliability and Validity. For the current iteration of the ACQ-R, solid evidence of reliability was demonstrated by the internal consistencies of the factors, which ranged

from .77 to .90. Scales from the ACQ-R correlated reasonably and meaningfully with trait anger, angry/hostile cognitions, and forms of anger expression (Tables 12 and 13). For example, trait anger positively correlated with all ACQ-R anger consequences, most highly with physical aggression and injury to others, verbal fights and property damage as found by others (Dahlen & Martin, 2006; Deffenbacher, Oetting, Lynch, et al., 1996a; Deffenbacher, Oetting, Thwaites, et al., 1996b). Physically aggressive and revengeful thoughts correlated with most anger-related consequences and again most highly with physical aggression and injury to others, verbal fights, and property damage. Derogatory/denigrating thoughts correlated with most consequences and most highly with verbal fights. Many forms of anger expression also correlated with anger consequences and in logical patterns. For example, expressing anger through assaults on people and things were highly related to physical aggression and injury and property damage. Verbally aggressive forms of anger expression (i.e., Verbal Put Downs, Noisy Arguing, and Verbal Assault) were strongly related to anger-related verbal fights. Positive, prosocial forms of anger expression (i.e., Control, Time Out, and Think Before Responding) were also negatively correlated with several consequences, especially verbal fights and property damage. These pairings of anger expressions and anger consequences are also supported by previous research on anger consequences, which found that four anger expression-consequence could be easily linked. Similar to the current research project, the Deffenbacher, Oetting, Lynch, et al. (1996b) research demonstrated that Physical Assault-People was strongly associated with physical fights, that Noisy Arguing and Verbal Assault were strongly associated with verbal fights, and that Physical Assault-Objects was strongly associated with property damage. Hence, the correlation analyses

of the current research support convergent validity and, to some extent discriminate validity, of the ACQ-R.

Discriminate validity was also explored by correlating the questions of the Anger Consequences Severity Scale (the ACSS is discussed more thoroughly below) with the factors of the ACQ-R. The ACSS explored the severity of anger consequences in a single event, whereas the ACQ-R provided a measure of the frequency of anger consequences over time. As such, the expectation was that these two measures of anger consequences would not be highly correlated. In fact, correlations between the items of the ACSS and the ACQ-R (Table 16) were small, with only four of the 108 correlations falling in the moderate range (all four correlations were $r = .30$). These results support the discriminate validity of the ACQ-R, as the frequency of anger consequences across time (ACQ-R) seems to capture something different from the severity of consequences in a most extreme anger event.

Sex Differences. Of the 12 factors that comprised the ACQ-R, just four reflected statistically significant differences between female and male respondents. Females reported more Somatic Consequences and Negative Emotions, whereas males reported more Physical Aggression and Injury to Others and Property Damage. These findings replicate prior research on a previous iteration of the Anger Consequences Scale, where males experienced higher levels of "aggression" and females experienced higher levels of "negative emotions" (which, among other issues, included items related to physical illness) (Dahlen & Martin, 2006). The 1996 version of the Anger Consequences Scale did not include somatic items in the "negative emotions" scale; however, on the

consequences relating to aggression (physical fights and property damage), males did report more consequences (Deffenbacher, Oetting, Lynch, et al., 1996a).

This pattern is also reflected in the anger-related scales used as predictors in subsequent regression models (discussed thoroughly in a subsequent portion of this Discussion section). For instance, male respondents had significantly higher mean scores on the HAT-Aggression and HAT-Revenge scales. Martin and Dalen (2007) also reported similar differences between males in females on the HAT-Aggression and HAT-Revenge scales. In another study, revengeful thoughts were implicated as a significant predictor for explaining state anger; however, the study did not explore sex differences nor did the study explore aggressive thoughts, derogatory thoughts, or anger consequences (DiGiuseppe & Froh, 2002). Male respondents also displayed significantly higher mean scores on three aggressive forms of anger expression: Assault- Objects, Assault-People, and Verbal Assault. Female participants displayed significantly higher levels on the Dirty Looks and Body Language subscales. While both of these expressions of anger are non-verbal, they do not necessarily involve the outward-directed, vigorous, and intrusive expressions of anger, which may relate to anger consequences.

Anger Consequences Severity Scale

For the purposes of this study, the ACSS was utilized as an alternative measure of anger consequences to provide both a contrast for the ACQ-R and to explore its utility in measuring another aspect of anger consequences. Surprisingly, the relationships between all of the anger measures in this study did not yield strong correlations. The correlations between the ACSS items and the TAS and HAT subscales did not yield any moderate or

strong relationships. The correlations between the nine ACSS items and the 13 AX subscales yielded only one moderate correlation (r = .32). As previously mentioned, the correlations between the ACSS and the ACQ-R demonstrated few strong relationships as well.

Sex Differences. There were four statistically significant differences between females and males on the ACSS. Compared to the females in this study, the male respondents were more likely to endorse a higher severity of anger-related consequences on items related to harming others and to damaging objects/property. Females had statistically higher scores on the ACSS item relating to feeling bad about oneself due to an anger-related incident and damaging relationships.

Correlations with the ACQ-R and ACSS

Correlations were examined between the anger-related predictors (TAS, HAT subscales, and Anger Expression subscales) and separately with the ACQ-R and the ACSS.

ACQ-R. The correlation pattern on the ACQ-R factors suggested that Physical Injury and Aggression to Others and Property Damage were strongly related to several facets of anger, such as higher levels of trait anger and higher levels of hostile automatic thoughts concerning aggression and revenge. Consequences related to Verbal Fights were also related to higher levels of trait anger and all hostile automatic thoughts (thoughts relating to aggression, revenge, and derogation). The remaining ACQ-R factors demonstrated weaker relationships with the TAS and HAT subscales. A similar pattern emerged when looking at the correlations between the ACQ-R and forms of anger expression. The ACQ-R factors containing the highest number of moderate to strong

correlations were the same three factors described above: Physical Injury and Aggression to Others, Property Damage, and Verbal Fights. The remaining ACQ-R factors did not demonstrate a large number of correlations but not a comparable degree of moderate to strong correlations. These general patterns of correlations replicate those found on comparable factors in prior research (Dahlen & Martin, 2006; Deffenbacher, Oetting, Lynch, et al., 1996a; Deffenbacher, Oetting, Thwaites, et al., 1996b).

ACSS. Severity of anger consequences on the ACSS was less well predicted by correlation analysis. For instance, there was only one correlation that was moderate and that occurred between the ACSS item regarding physical damage/health problems occurring to others and the Physical Assault-People anger expression subscale. Other bodies of evidence were examined to see if prior research would support the current findings; however, none contained correlation analyses for the ACSS (or previous iterations thereof). As such, the current correlation analyses for the ACSS could not be compared to prior research.

Regression Models for the ACQ-R and the ACSS

The Best Predictors of the ACQ-R. First, it is important to note that the Reciprocal Communication predictor acted as a suppressor variable in five of the twelve regression models. In all cases, the ß coefficient was positive when the correlation analyses either indicated a negative or near zero relationship. In two of the regression models, Reciprocal Communication was statistically significant in the presence of the statistically significant predictors of sex and trait anger. In two other regression models, the Reciprocal Communication predictor was significant in the presence of a positive Verbal Assault predictor that statistically significant. There was no pattern for the

remaining regression model containing Reciprocal Communication as a suppressor variable.

The text below describes each anger consequences in light of the exploratory predictive ability of sex, trait anger, hostile thoughts, and anger expressions.

Somatic Outcomes. The regression model accounted for 23.6% of the variance in the Somatic Outcomes anger consequence. A higher number of anger-related consequences related to somatic outcomes were reported by female respondents with higher levels of trait anger. These high-trait anger females also reported not being able to control their temper, but at the same time internalizing their anger as well as utilizing negative body language.

Physical Aggression and Injury to Others. The regression model accounted for 49.1% of the variance in the Physical Aggression and Injury to Others. More anger-related consequences involving physical aggression and injuring others were reported by male respondents with high trait anger who express their anger by physically aggressing towards people and objects/property. There was a statistically significant interaction between sex and physical aggression.

Mixture of Severe Consequences. A small amount of variance was accounted for by the regression model (5.2%), as this anger-related consequence was poorly explained by the current set of predictors. The only item that was predictive was the anger expression scale of aggressing towards others.

Hurt Self Physically. A moderate amount of variance was accounted for by the regression model (10.4%). An increase in the consequence of hurting one's self

physically was predicted by being female, internalizing anger, and ultimately expressing it by assaulting objects/property.

Verbal Fights. Nearly half of the variance in Verbal Fights was accounted for by the regression model (47.5%). Verbal fighting was best predicted by revengeful hostile thoughts and an inability to control the expression of anger. In addition, verbal fighting was also a consequences of verbal put downs, loud arguing, and assaulting others verbally.

Reckless Driving. The regression model accounted for 12.4% of the variance in Reckless Driving anger consequence. Respondents who reported a higher number of anger-related reckless driving consequences also reported expressing their anger by physically assaulting objects, engaging in verbal assault, and internalizing their anger.

Negative School/Work Consequences. A moderate amount of variance was accounted for by the regression model (6.7%). An increase in consequences related to school/work issues was best predicted by respondents who reported negative critical thoughts, along with the internalization of anger and lowered anger-related coping strategies.

Substance Abuse. The regression model accounted for 12.9% of the variance in for Substance Abuse. An increase in anger consequences related to substance abuse was predicted by individuals who had lower levels of aggressive thoughts but a higher level of revengeful thoughts. In addition, such individuals also reported engaging in verbal assault, but a lower level of angry facial expressions and negative critical thoughts.

Injury to Children/Animals. Only 5.1% of the variance in Injury to Children/Animals was accounted for by the regression model. As with the Mixture of

Severe Consequences, an increase of anger-related consequences involving injury to children or animals was poorly explained by the predictors in this study. Only two predictors were evident. Respondents who reported injuring children or animals were individuals who were more likely to engage in verbal derogation along with physically assaultive behaviors.

Property Damage. Over half of the variance in Property Damage was accounted for by the regression model (53.5%). People who reported increased consequences related to property damage were males with high trait anger and aggressive thoughts who expressed their anger by suppressing their angry feelings, refrain from verbal derogation, and then by physically aggressing towards people and objects.

Negative Emotions. The regression model accounted for 18.1% of the variance in Negative Emotions. Experiencing a higher degree of negative emotions as a consequence of anger was predicted by individuals who reported having revengeful thoughts, who expressed their anger by physically aggressing towards objects, having critical thoughts about others, suppressing their angry feelings, and attempting to engage in positive time-out coping strategies. Lessened attempts to control their anger and the reduced the likelihood of physically aggressing against others also predicted anger-related emotional consequences.

Vocational Consequences. Only 6.0% of the variance was accounted for by the regression model, demonstrating that increases in vocational consequences was poorly explained by this study's predictors. The only predictor involved was anger expression involving physically aggressing against people.

As previously indicated, sex may be an important predictor for some ACQ-R consequences. Females reported more somatic anger-related consequences and situations where their anger led them to hurt themselves physically. Males, on the other hand, reported their anger lead to greater property damage and physical aggression and injury to others. Moreover, the single meaningful sex by variable interaction provided additional information on how sex interacted with the tendency to direct anger expression towards people when explaining the consequence of aggression/injury to others. Take together, this suggests that while both males and females experience anger consequences related to physical aggression and injury to others when they engage in physically assaultive behaviors, it was male respondents who experienced more negative consequences. When combined with previously mentioned research, the findings of the current study support the idea that sex may be viable predictor when exploring anger-related consequences that involve somatic issues (e.g., the experience of headaches and stomachaches, or hurting oneself) or aggression to others or property.

The regression models showed that higher trait anger was a viable predictor in only three of the ACQ-R consequences. Two of the consequences involved aggression (Physical Aggression and Injury to Others and Property Damage) and the other was the Somatic Consequences, all three of which co-occurred with sex as a viable predictor. However, it is likely that the TAS provides a higher degree of accuracy in explaining certain anger consequences. Given that TAS mean scores for the current study did not differ meaningfully between males and females, but was moderately correlated with consequences related to Property Damage and Physical Aggression and Injury to Others and also with expressions related to assaulting people and objects, it possible that the

TAS provides greater specificity in explaining the frequency of these particular anger consequences that result from physically assaultive expressions of anger.

Also surprising was the lack of predictability associated with hostile thoughts, though there were five ACQ-R factors that had a HAT scale as a statistically significant predictor. Hostile thoughts related to revenge were predictive of consequences related to Verbal Fights, Substance Abuse, and Negative Emotions. Hostile thoughts related to aggression were predictive of consequences related to Substance Abuse and Property Damage. The HAT scale related to derogation did not appear in any of the ACQ-R regression models. Previous research on the relationship between angry cognitions and anger consequences yielded different results from the current study. Martin and Dahlen (2007) found a significant positive relationship between angry cognitions and anger consequences as measured by a 42-item version of the ACQ (Deffenbacher et al., 1996a). While the primary focus of Martin and Dahlen's (2007) research did not directly include the relationship between the HAT scales and the ACQ, they correlated the HAT with the Angry Cognitions Scale to establish convergent validity and found strong to moderate positive relationships between all scales (Martin & Dahlen, 2007). Additionally, different dimensions on the Angry Cognitions Scale proved to be statistically significant predictors in regression models for the ACQ (Martin & Dahlen, 2007). Though this is perplexing when considering the Martin and Dahlen's findings with the current research, it is likely that the HAT scales measure a different aspect of angry cognitions than the Angry Cognitions Scale and, similar to the TAS, the HAT scales may provide a level of specificity in explaining the frequencies of certain anger consequences.

Unlike the previous predictors (sex, TAS, and HAT subscales), each ACQ-R regression model contained at least one predictor related to anger expression. With regard to the anger expression predictors, only those predictors that were statistically significant across three or more ACQ-R factors are considered here. Assault-People and In-Suppression of anger were the most prevalent anger-expression-related predictors for the ACQ-R, followed by Assault-Objects. Assault-People and Assault–Objects occurred three times together on ACQ-R factors, specifically: Physical Aggression and Injury to Others, Property Damage, and Negative Emotions. Similarly, verbal anger expressions were good predictors of anger-related consequences of verbal fighting. Verbal Assault was also a good predictor for consequences related to Reckless Driving and Substance Abuse. Verbal Put Downs were good predictor of consequences related to Property Damage and Injury of Children/Animals. Lastly, the lack of anger control was a good predictor for consequences related to Somatic Outcomes, Verbal Fights, and Negative Emotions.

Taken together, these results indicate that sex, trait anger, and hostile automatic thoughts are not as useful in predicting anger consequences, as compared to anger expression. However, trait anger may provide some specificity in some cases and, in another case, the predictive power of sex related solely to the anger consequence related to Physical Aggression and Injury to Others.

The Best Predictors of the ACSS. As with the ACQ-R, it is first important to note that the Reciprocal Communication predictor acted as a suppressor variable in three of the eight regression models. In all cases, the ß coefficient as positive when the correlation analyses indicated either negative or near zero relationship. In all three cases,

Reciprocal Communication was statistically significant in the presence of In-Suppression and in two cases; Reciprocal Communication was statistically significant in the presence of the predictor's In-Suppression and Body Language.

The text below describes each anger consequences in light of the exploratory predictive ability of sex, trait anger, hostile thoughts, and anger expressions.

Physical Damage-Self. A moderate amount of variance was accounted for by the regression model (7.2%). The severity of anger consequences related to physical damage happening to self was predicted by individuals who are more likely to express their anger by assaulting objects and engage in noisy arguing, but who are also less likely to demonstrate angry body language or have negative critical thoughts about others.

Physical Damage-Other. The regression model accounted for 15.9% of the variance in Physical Damage-Other anger consequences. This item was predicted by respondents who reported having aggressive thoughts and who also expressed their anger by assaulting people; however, they reported being less likely to engage in giving anger-related dirty looks or demonstrating angry body language.

Property Damage. A moderate amount of variance in Property Damage was accounted for by the regression model (9.5%). Respondents who indicted that they experience more severe anger-related consequences involving damage to objects/property were more likely to be males who have aggressive thoughts who attempt to suppress their angry feelings, refrain from anger-related body language, but physically aggress towards objects.

Relationship Damage. Only 7.9% of the variance in Relationship Damage was accounted for by the regression model. Female respondents who expressed their anger

with negative body language, but who did not give negative anger-related looks and who also suppressed their angry feelings reported having more severe consequences relating to relationship damage.

Work/School Problems. Just 3.8% of the variance was accounted for by the regression model, meaning that this item was poorly predicted by the scales in this study. The only item that was predictive of problems developing at work or school was in regard to individuals who reported engaging in coping with their anger by taking time out away from the situation.

Legal/Official Consequences. The regression model accounted for 5.8% of the variance in Legal/Official Consequences. This means that the severity of official consequences was also poorly predicted. Only those respondents who reported having high trait anger and expressing their anger by assaulting objects were likely to report having a higher level of severity regarding official consequences.

Damage to Self-Esteem. The regression model accounted for 6.6% of the variance. An increased level of severity related to feeling badly about one's self was most associated with female respondents who engaged in negative critical thoughts and suppressed feelings of anger, but who did not have aggressive thought content or engage in verbal derogation.

Reported Cost. This severity of anger-related consequences was poorly predicted, as only 5.6% variance was accounted for and none of the predictors in this study adequately explained this item.

Total Number of Consequences. The regression model accounted for 12.3% of the variance for the Total Number of Consequences. The total number of anger

consequences was primarily associated with female respondents who engage in noisy arguing and verbal assault. They were also more likely to suppress their anger and were not able to exercise adequate control over their anger expressions.

There was one regression model that was not explained by any of the predictors. This was the ACSS item regarding the costliness of the anger-related incident.

Sex was a statistically significant predictor for the ACSS item related to damage to objects/property where male respondents reported more consequences and damage to a relationship and feeling badly about self where female respondents experienced more consequences. There were no predictive sex by predictor interactions with the ACSS.

As with the ACQ-R, measures related to trait anger and hostile automatic thoughts were not particularly useful in predicting the severity of anger consequences. The TAS was predictive for only one regression model (Legal/Official Consequences). The predictors related to hostile thoughts were related only to aggression and present on three of the seven viable ACSS regression models (physical damage/health problems, damage to objects/property, and feeling badly about self). In reference to the TAS, these results support previous research on an earlier iteration of the ACSS (Anger in the Last Year Questionnaire). The previous research indicated that while individuals with high levels of trait anger (as measured by the TAS) reported significantly higher severity levels of anger consequences, these differences were primarily due to the fact that individuals with high trait anger are more likely to report an anger consequence (Deffenbacher, Oetting, Thwaites, et al., 1996b). When the researchers dropped the Anger in the Last Year questionnaire results for those participants who did not report an anger consequence, there were far fewer statistically significant differences between the

high and low anger participants; additionally, the researchers did not find significant gender differences (Deffenbacher, Oetting, Thwaites, et al., 1996b). The current and previous research support the idea that the ACSS is not easily predicted by trait anger or sex.

While Anger Expression subscales proved to be the best overall predictors for the ACSS, the subscales differed slightly from those that served as predictors for the ACQ-R. The most prevalent Anger Expression indicators for the ACSS were the Body Language and In-Suppression subscales, and three of those items contained both predictors. These items were related to physical damage/health problems to self, damage to objects/property, and damage to a relationship. Additionally, Body Language was a significant predictor for physical damage/health problems to others and In-Suppression was a significant predictor for feeling badly about self. The second most common Anger Expression indicators in the ACSS regression models were In-Critical and Assault-Objects.

Clinical Implications

A potentially useful aspect of this research pertains to the clinical assessment and treatment of anger symptoms and anger disorders. Currently, treatment for clinically relevant anger symptoms is typically targeted towards the externalization of anger. Yet, determining the frequency of anger consequences and potential predictors would allow for a more finely tuned assessment of the types of anger consequences and therefore permit the clinician to develop a more precise intervention. For example, the assessment and treatment of externally expressed anger may yield a different set of anger consequences as compared to internally expressed anger; as a result, assessing anger-

related symptoms may be more difficult to detect if the anger is expressed internally and treating the anger-related symptom may vary accordingly.

The *DSM-IV-TR* is set up as a categorical classification system, where mental disorders are defined based upon sets of features or symptoms (American Psychiatric Association, 2000). Anger-related symptoms and anger disorders in the *DSM-IV-TR* are largely limited to the external aspects of anger. For instance, anger-related symptoms for oppositional defiant disorder, conduct disorder, antisocial personality disorder, and borderline personality disorder include losing one's temper, anger, irritability, aggression towards people/animals, and inappropriate anger. Anger and anger-related symptoms (e.g., hostility or physical aggression towards others) are listed as an "associated feature" in paranoid schizophrenia (p. 314), mania (p. 359), and posttraumatic stress disorder (p. 465), narcissistic personality disorder (p. 715) (American Psychiatric Association, 2000). The symptoms for Intermittent Explosive Disorder (IED) rest solely on disproportionally aggressive "impulses that result in serious assaultive acts or destruction of property" (American Psychiatric Association, 2000, p. 667), though there is research that supports the inclusion of verbal aggression as an additional hallmark symptom for IED (McCLoskey, Lee, Berman, Noblett & Coccaro, 2007). However, there is one disorder in which the explicit mention of anger is not restricted by the externalization of anger. In the "associated features" of obsessive-compulsive personality disorder, a description of anger-related symptoms includes becoming "angry in situation s in which they are not able to maintain control of their physical or interpersonal environment, although the anger is typically not expressed directly. For example, a person (with this disorder) may be angry when service in a restaurant is poor, but instead of complaining to the

management, the individual ruminates about how much to leave as a tip" (American Psychiatric Association, 2000, p.727).

In regard to the forthcoming fifth edition of the *Diagnostic and Statistical Manual (DSM-V),* there has been debate regarding utilizing diagnostic categories or diagnostic dimensions (Kupfer, 2005). While this debate is long-standing and has been argued since before the *DSM-IV,* there has yet to resolution (Brown & Barlow, 2005). The difference between diagnostic categories and diagnostic dimensions can best be summed up as the difference between discrete diagnoses with discrete etiologies (categorical) versus the identification of the common elements in co-occurring/co-morbid psychopathology (dimensional) (Widiger & Samuel, 2005). The current research suggests that anger-related symptoms and anger disorders may work well a dimensional system, where the internal expressions of anger and resultant consequences would be considered along with the external expressions of anger and resultant consequences. In this way, anger-related symptoms and anger disorders could be conceptualized as dimensionally rather than categorically. The clinical utility of a dimensional system can yield "a more specific and individualized profile description of a patient's psychopathology," which may have "differentiated and specific treatment implications" (Widiger & Samuel, 2005, p. 500).

Summary

This study explored the potential of anger-related predictors of the consequences of anger. While it appears that sex does not account for much variation with the severity or frequency of anger consequences, exploration of the possible precursors to anger consequences does expound upon certain societal stereotypes of how females and males expression anger and its resultant consequences. First, in this study, there were no

meaningful differences between males and females regarding trait anger. However, this study did reveal differences between males and females on violent expressions of anger (males demonstrating more violent acts towards objects and people). Males were also more likely to have anger-related thoughts involving aggression and revenge. In another instance, female respondents were found to engage in more physically contained expressions of anger, such as giving dirty looks or expressing negative body language when angry. While males were more like to act out, they were also more likely to control their anger expression and to think before responding to an angry situation. Females were more likely to engage in two-way communication.

However, sex differences in anger expression and angry thoughts only minimally explained the variance in the severity and frequency of anger-related consequences. Certainly, sex was a significant predictor in the frequencies of anger consequences involving harming others and damaging property (males more likely to experience both of these consequences), as were the frequency of anger-related consequences related to somatic effects and physically hurting oneself (females more likely to experience both). Similarly, sex differences were attributable to only three severities of anger-consequences; female respondents were more like to endorse severe anger-consequences related to relationship damage and feeling badly about one's self. The male respondents reported more severe anger-related consequences concerning damaging objects or property.

In considering trait anger as a unique predictor, the current study indicated that the TAS was not a statistically meaningful predictor in most of the regression models. In the few cases in which it did, that TAS might have added a degree of specificity in

correctly classifying which individuals may experience a higher frequency of anger-related consequences. For example, when the TAS was combined with sex, it demonstrated that males with higher levels of trait anger were more likely to be involved in a greater number of consequences relating to injuring others and damaging property. Female respondents with high trait anger were more likely to experience a greater number of somatic consequences. The sex and TAS relationship did not explain why females were more likely to report higher numbers of injuring self, nor did the sex and TAS combination show up in the severity of anger consequences.

Similarly, the HAT subscales did not yield a robust set of predictors, as it only appeared on seven anger-related consequences on Step 1 and on another anger-related consequence on Step 2 (as an HAT x Sex interaction). However, like with the TAS, the HAT scales may have added a degree of specificity in correctly classifying which individuals may experience a higher frequency of anger-related consequences For example, in all but one case, the HAT subscales (when predictive) occurred in conjunction with the assaultive forms of anger expression. The respondents that were more likely to experience angry thoughts related to revenge or aggression were more likely to report anger expression related to verbal assault, assault on objects, and physical assault on others. This relationship between the HAT Aggression or HAT Revenge scales and the three different assaultive anger expression scales was evident on the frequency of anger consequences related to verbal fighting (HAT Revenge and Verbal Assault), substance abuse (HAT Revenge and Aggression and Verbal Assault), property damage (HAT Aggression and Assault-Objects/People), and negative emotions (HAT Revenge and Assault-Objects and People). With regard to the severity of anger

consequences, the item regarding physical damage/health happening to others was predicted by the HAT Aggression scale in concert with the anger expression Assault-People and with the item relating to damage to objects/property was predicted by the HAT Aggression scale in concert with Assault-Objects.

Of the anger-related predictors used in this study, anger expression proved to be the most useful construct in explaining both the frequency and severity of anger consequences. With few exceptions, sex, trait anger, and hostile thoughts were not good general predictors, though, as previously stated, they may have provided a degree of specificity in explaining certain anger consequences. Additionally, some of the anger consequences were predicted by seemingly contradictory forms of anger expression. For instance, the ACQ-R factor of "Hurt Self Physically" was predicted by the AX scales related the suppression of anger and assaulting objects. This begs the question regarding the timing of the expression of anger. Did the assault of objects occur first, followed by the suppression of anger? Alternatively, did an attempt at anger suppression occur first, followed by an eruption of aggression towards an object? If so, was there an element of impulsivity that mediated the effect of the suppression of angry feelings to the aggression? In either case, physical injury to self occurred as a result, but it would be beneficial to know the order of events.

Beyond exploring the utility of one set of predictors over another remains the fact that this research represents one of a handful studies that pull together several anger-related constructs in an effort to explore the precursors to anger consequences. The results of the study are quite promising, given the amount of variance accounted for by

the regression models. The figures below demonstrate, in ascending order, the percentage of variance.

Figure 2.

ACQ-R: Variance Accounted for by Regression Models

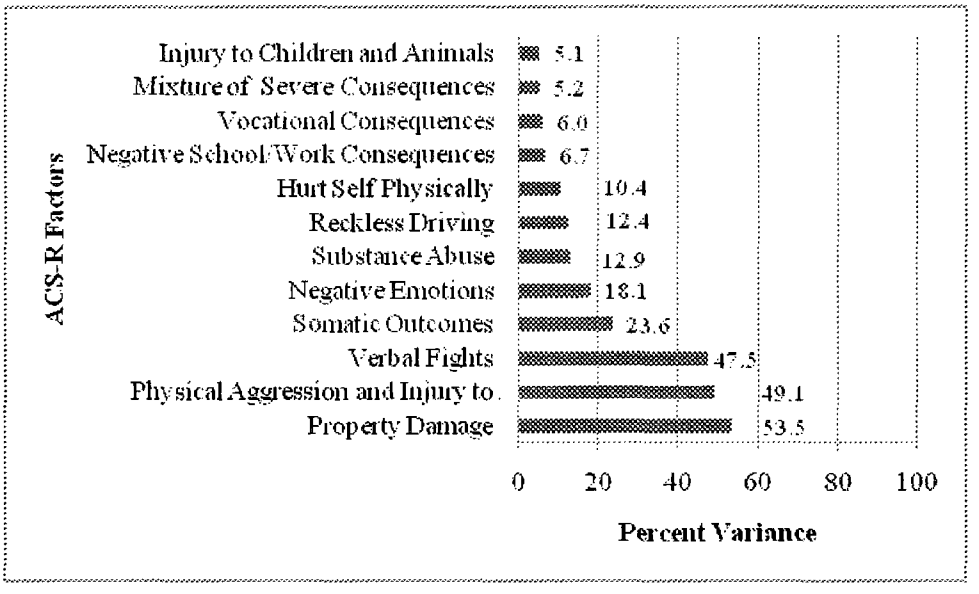


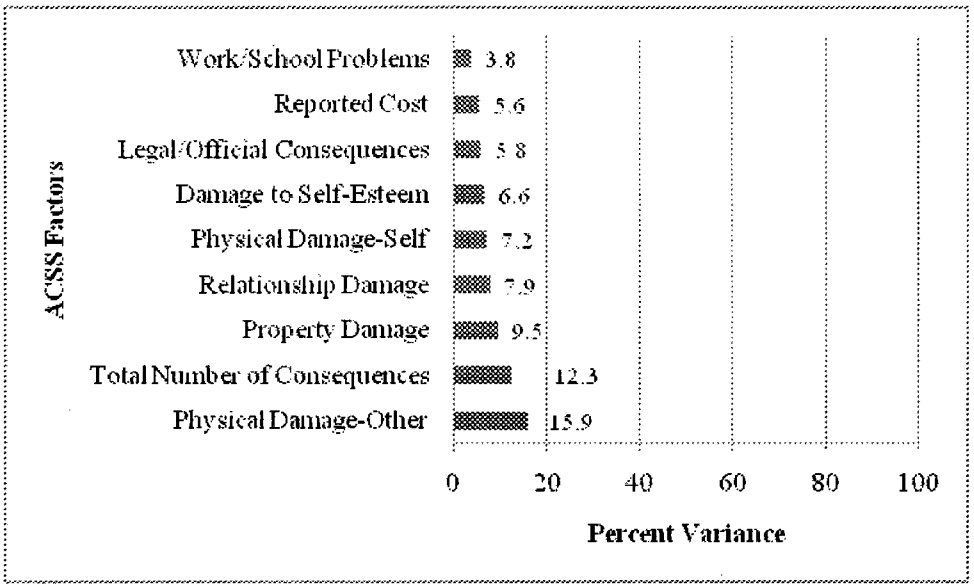
Figure 2 demonstrates that 8 of the 12 ACQ-R factors had greater than 10% of the variance explained by the exploratory predictors in the regression models. Three of the factors had nearly 50% or more of the variance explained. Given the stringent statistical control placed upon the exploratory factor analysis and regression models, and despite the limitations of the study, these results are highly encouraging and may provide a firm stepping-stone for future research on the frequency of anger consequences.

Figure 3 demonstrates that while ACSS scale was not as strongly identified by the regression models, two scales had a respectable amount of variance accounted for: the Total Number of Consequences and the Physical Damage-Other. However, as previously stated, the results of this study suggest that the frequency of anger consequences and the

severity of anger consequences may be different constructs or that the scale used to measure the severity of anger is not valid.

Figure 3.

ACSS: Variance Accounted for by Regression Models



Future Areas of Research

There were several things gained by conducting this study. First, the Anger Consequences Scale was greatly enhanced by the addition of several items, resulting in the Anger Consequences Scale-Revised that enriches the understanding of a poorly understood aspect of anger. On a related note, there was also a general lack of literature regarding the precursors of the frequency and severity of anger consequences. This study also set out to explore whether or not anger consequences could be predicted by sex, trait anger, angry thoughts, and different forms of anger expressions. In general, this study found that the frequency of anger consequences was better predicted by the current set of predictors than the severity of anger consequences. It could be that the severity scale used in this study did not adequately capture the construct or it could also be that the

severity of anger consequences is related to some other anger-related construct that was outside the scope of this study.

As such, the findings of this study necessitate the need for replication. While the ACQ-R demonstrated reliability and validity, the sample was limited to a young, white, college sample. It would be helpful to know if the factors born out of the current study extend to other populations. In addition, there are some limitations regarding collecting data via a self-report questionnaire. For the current study, these limitations include not being able assess the degree to which social desirability was a factor. For instance, several of the questions in the ACQ-R dealt with highly sensitive topics (e.g., hurting and scaring children) and the inclusion of a social desirability check may have allowed the researcher to assess the degree to which respondents were answering the questions in an overly favorable light. On a related note, it may also be useful to include a measure related to impulsivity to assess its relationship to anger consequences.

The ACQ-R did not find any anger consequences related to relationships. This is odd considering that, in its many forms, anger can profoundly affect relationships. However, it is possible that the strict parameters set in place for the exploratory factor analysis may have excluded factors that would have been otherwise revealed, including anger consequences affecting relationships. Conducting another exploratory factor analysis with a more relaxed set of parameters may be a useful follow up study.

Lastly, there is the issue of the handful of poorly predicted consequences. It is possible that some anger consequences cannot be adequately explained by sex, trait anger, angry thoughts, or angry expressions, as some anger consequences may be tied only to a specific time/place (e.g., reaction to a life-threatening event), or they may be

consequences related to more altruistic motives involving anger (e.g., addressing an injustice). However, it is also possible those other anger-related predictors could be beneficial or that the poorly predicted consequences were amorphous or infrequent enough as to not be tied to a particular anger-related predictor. Including anger-related predictors that address the positive aspects of anger may partially address this issue; otherwise, in specific relation to the ACQ-R, relaxing the exploratory factory analysis parameters may potentially allow more items to load on the more poorly predicted factors, thereby allowing for a more well rounded understanding of the factor.

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Appendix A

Materials Given to Participants

Demographic Information

Directions: Do not put your name on this form. Please provide the following information.

Your Age: _____Your Sex:

O Male O Female

Year in School:

O Freshman O Sophomore O Junior O Senior O Other

Ethnicity (bubble in all that apply):

O Native American O African American O Asian American

O Hispanic/Latino O White non-Hispanic O Other

Consent to Participate in a Research Study
Colorado State University

TITLE OF STUDY: Anger: Its Expression and Consequences

PRINCIPAL INVESTIGATOR: Jerry L. Deffenbacher, Ph.D. (970-491-6871)
jd6871@lamar.colostate.edu

WHY AM I BEING INVITED TO TAKE PART IN THIS RESEARCH? We are investigating the relationship of anger, angry thoughts, anger expression, and anger consequences in college students.

WHO IS DOING THE STUDY? Jerry L. Deffenbacher, Professor in the Department of Psychology

WHAT IS THE PURPOSE OF THIS STUDY? We want to understand the relationship of anger, angry thoughts, anger expression, and anger consequences.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST? This study will take place in classrooms at Colorado State University and will take approximately 40 minutes.

WHAT WILL I BE ASKED TO DO? You will be asked to complete a series of questionnaires regarding your general anger, anger-related thoughts, forms of anger expression, and the consequences of your anger.

ARE THERE REASONS WHY I SHOULD NOT TAKE PART IN THIS STUDY? If you are under the age of 18, contact Dr. Jerry L. Deffenbacher and arrangements will be made for your parents to review the project and provide their consent for you to be involved, if they give their permission to participate.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS? Risks and discomforts are minimal., All questionnaires are voluntary and may be terminated at any time. We do not want our research to put you at risk. In fact, our research depends on honest, truthful responses. We protect you by the way the questionnaires are completed and materials are turned in. Do not put your name anywhere on the questionnaires so that they are anonymous. We think these procedures protect you and minimize risk so that it should not be a problem to respond openly and truthfully. It is not possible to identify all potential risks in research procedures, but the researchers have taken reasonable safeguards to minimize any known and potential, but unknown, risks.

WILL I BENEFIT FROM TAKING PART IN THIS STUDY? There are no known benefits to you.

DO I HAVE TO TAKE PART IN THE STUDY? Your participation in this research is voluntary. If you decide to participate in the study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WHAT WILL IT COST ME TO PARTICIPATE? There are no known costs to participating, except for the time you take completing the questionnaires.

Page__ of__ Participant's initials _____ Date _____

WHO WILL SEE THE INFORMATION THAT I GIVE? This study is anonymous. Since your name or other personally identifying information are not on the questionnaire, this means that no one, not even members of the research team, will know that the information you give comes from you. Your information will be kept in locked, secure areas and will be seen only by research staff. We will keep private all research records that identify you, to the extent allowed by law. Your information will be combined with information from other people taking part in the study. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. You will not be identified in these written materials.

We may publish the results of this study; however, we will keep your name and other identifying information private.

CAN MY TAKING PART IN THE STUDY END EARLY? Your participation in this research is voluntary. If you decide to participate in this study, you may withdraw your consent and stop participating at any time without penalty or loss of benefits to which you are otherwise entitled.

WILL I RECEIVE ANY COMPENSATION FOR TAKING PART IN THIS STUDY? You will earn one PY100 research credit for taking part in this study.

WHAT HAPPENS IF I AM INJURED BECAUSE OF THE RESEARCH? The Colorado Governmental Immunity Act determines and may limit Colorado State University's legal responsibility if an injury happens because of this study. Claims against the University must be filed within 180 days of the injury.

WHAT IF I HAVE QUESTIONS? Before you decide whether to accept this invitation to take part in the study, please direct any questions you might have right now to the research assistant. Later, if you have questions about the study, you can contact the investigator, Dr. Jerry L. Deffenbacher at 970-491-6871 or jld6871@lamar.colostate.edu. If you have any questions about your rights as a volunteer in this research, contact Celia Walker, Director of Regulatory Compliance, at 970-491-1553. We will give you a copy of this consent form to take with you.

WHAT ELSE DO I NEED TO KNOW? Hopefully, we have answered all of your questions, but if you have any questions, ask the research assistant or contact Dr. Jerry L. Deffenbacher.

Your signature acknowledges that you have read the information stated and willingly sign this consent form. Your signature also acknowledges that you have received, on the date signed, a copy of this document containing two pages.

_____ _____

Signature of person agreeing to take part in the study Date

_____

Printed name of person agreeing to take part in the study

_____ _____

Name of person providing information to participant Date

_____

Signature of Research Staff

Page__ of__ Participant's initials _____ Date _____

Debriefing Statement for Study on Anger, Its Expression, and Consequences

Anger is an important human emotion. This study explored the relationships of general anger, angry thoughts, anger expression, and anger consequences. The findings will help us understand how these are related to each other and help us design counseling strategies for helping people suffer fewer anger-related consequences.

We truly appreciate your involvement in this research and hope that it has been an interesting experience. If you have any questions, please feel free to contact Dr. Jerry L. Deffenbacher, Department of Psychology (970-491-6871 or jld6871@lamar.colostate.edu.).

The Anger Expression Inventory

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

WHEN ANGRY OR FURIOUS...	**ALMOST NEVER**	**SOME-TIMES**	**OFTEN**	**ALMOST ALWAYS**
1. I control my temper	O	O	O	O
2. I express myself calmly	O	O	O	O
3. I give others a dirty look	O	O	O	O
4. I keep things in	O	O	O	O
5. I break things	O	O	O	O
6. I shout	O	O	O	O
7. I belittle people	O	O	O	O
8. I give others a look that could kill	O	O	O	O
9. I withdraw from people	O	O	O	O
10. I roll my eyes	O	O	O	O
11. I throw things	O	O	O	O
12. I make sarcastic remarks to others	O	O	O	O
13. I keep my cool	O	O	O	O
14. I bang things around	O	O	O	O
15. I listen to others	O	O	O	O
16. I frown at others	O	O	O	O
17. I do things like slam doors	O	O	O	O
18. I kick things around	O	O	O	O
19. I take cheap shots at others	O	O	O	O
20. I encourage others to be honest about their feelings	O	O	O	O
21. I relax until I calm down	O	O	O	O
22. I hit things	O	O	O	O
23. I raise my eyebrows	O	O	O	O
24. I ask others their opinions	O	O	O	O
25. I boil inside, but do not show it	O	O	O	O
26. I threaten to hit people	O	O	O	O

	ALMOST NEVER	SOME-TIMES	OFTEN	ALMOST ALWAYS
WHEN ANGRY OR FURIOUS...				
27. I control my behavior	O	O	O	O
28. I do things like kick the wall	O	O	O	O
29. I put people down	O	O	O	O
30. I think things through before I respond	O	O	O	O
31. I try to find solutions acceptable to all	O	O	O	O
32. I hit others	O	O	O	O
33. I fold or cross my arms	O	O	O	O
34. I argue with others	O	O	O	O
35. I try to compromise	O	O	O	O
36. I put my hand on my hips	O	O	O	O
37. I stomp around	O	O	O	O
38. I tend to harbor grudges that I don't tell anyone about	O	O	O	O
39. I give others a stern look	O	O	O	O
40. I yell	O	O	O	O
41. I flip people off	O	O	O	O
42. I give others an icy stare	O	O	O	O
43. I raise my voice	O	O	O	O
44. I threaten to push or shove others	O	O	O	O
45. I do things like punch the wall	O	O	O	O
46. I get my head together before I respond	O	O	O	O
47. I swear	O	O	O	O
48. I can stop myself from losing my temper	O	O	O	O
49. I glare at others	O	O	O	O
50. I call others names	O	O	O	O
51. I get away until I calm down	O	O	O	O
52. I sigh pointedly	O	O	O	O
53. I am secretly quite critical of others	O	O	O	O
54. I express my opinions and allow others to express theirs	O	O	O	O
55. I take time out when needed	O	O	O	O
56. I am critical of others	O	O	O	O
57. I am angrier than I am willing to admit	O	O	O	O

58. I push or shove others	O	O	O	O
	ALMOST NEVER	**SOME-TIMES**	**OFTEN**	**ALMOST ALWAYS**
WHEN ANGRY OR FURIOUS...				
59. I wait to cool down before I respond	O	O	O	O
60. I think before I act	O	O	O	O
61. I drum my fingers or tap my feet	O	O	O	O
62. I become argumentative	O	O	O	O
63. I say nasty things	O	O	O	O
64. I'm irritated a great deal more than people are aware of	O	O	O	O
65. I shake my head	O	O	O	O
66. I tell people off	O	O	O	O
67. I lose my temper	O	O	O	O
68. I control my angry feelings	O	O	O	O

The Hostile Automatic Thoughts Inventory (HAT)

Directions: Below are a number of thoughts people have when they are angry or hostile towards someone or something. Take a few seconds to think about whether that thought (or one similar to it) has occurred generally in your life. Read each statement and then fill in the circle indicating how much you generally think this thought (or one similar to it) **when you are angry or hostile.** Please answer all questions.

NUMBER OF TIMES IT HAPPENED	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
1. I hate this person so much I could kill him/her!	O	O	O	O	O	O
2. What an idiot!	O	O	O	O	O	O
3. I have to get this person back.	O	O	O	O	O	O
4. I want to kill this person!	O	O	O	O	O	O
5. This person is a loser.	O	O	O	O	O	O
6. I want to get back at this person.	O	O	O	O	O	O
7. I wish this person was dead.	O	O	O	O	O	O
8. I hate stupid people.	O	O	O	O	O	O
9. I just want to hurt this person as bad as he/she hurt me.	O	O	O	O	O	O
10. If I could get away with it, I'd kill this person!	O	O	O	O	O	O
11. What a jerk!	O	O	O	O	O	O
12. I want to get revenge.	O	O	O	O	O	O
13. I want to beat the hell out of this person!	O	O	O	O	O	O
14. S/he is so annoying.	O	O	O	O	O	O
15. I want to treat this person like he/she treated me.	O	O	O	O	O	O
16. I'd like to knock his/her teeth out. What the hell is this person doing?	O	O	O	O	O	O
17. I'll show this person!	O	O	O	O	O	O

NUMBER OF TIMES IT HAPPENED	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
18. I can think of a lot of terrible things I'd like to see happen to that person.	O	O	O	O	O	O
19. I think this person is rude.	O	O	O	O	O	O
20. I want to smack this person.	O	O	O	O	O	O
21. Why doesn't this person just shut up?	O	O	O	O	O	O
22. I should do thing to this person.	O	O	O	O	O	O
23. I want to hit this person.	O	O	O	O	O	O
24. I wish they'd just shut up and go away.	O	O	O	O	O	O
25. When someone attacks me like this person did, I attack them back.	O	O	O	O	O	O
26. I want to destroy something right now!	O	O	O	O	O	O
27. This person makes me feel angry.	O	O	O	O	O	O
28. This person needs to be taught a lesson.	O	O	O	O	O	O
29. If someone really wants to mess with me,then they deserve to get roughed up.	O	O	O	O	O	O

The Anger Consequences Questionnaire-Revised (ACQ-R)

Directions: These questions ask about what happens when **you become angry.** Please answer every question by filling in the appropriate circle showing how many times in the **last one month** it has happened to you because of **your anger.**

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
1. Depressed	O	O	O	O	O	O
2. Anxious	O	O	O	O	O	O
3. Feel like hurting someone	O	O	O	O	O	O
4. Feel like breaking something	O	O	O	O	O	O
5. Get into a physical fight	O	O	O	O	O	O
6. Get into an argument	O	O	O	O	O	O
7. Have trouble with the law	O	O	O	O	O	O
8. Break something	O	O	O	O	O	O
9. Drink alcohol	O	O	O	O	O	O
10. Bruise myself	O	O	O	O	O	O
11. Upset my friends	O	O	O	O	O	O
12. Use drugs other than alcohol	O	O	O	O	O	O
13. Get drunk	O	O	O	O	O	O

	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
14. Cut or scrape myself (not requiring stitches)	O	O	O	O	O	O
15. Feel sad	O	O	O	O	O	O
16. Be nauseated	O	O	O	O	O	O
17. Hit someone	O	O	O	O	O	O
18. Get a ticked while driving	O	O	O	O	O	O
19. Say nasty things	O	O	O	O	O	O
20. Have tight neck muscles	O	O	O	O	O	O
21. Damage a family relationship	O	O	O	O	O	O
22. Feel out of control	O	O	O	O	O	O
23. Have a headache	O	O	O	O	O	O
24. Drive recklessly	O	O	O	O	O	O
25. Overeat	O	O	O	O	O	O
26. Lose my boy/girlfriend	O	O	O	O	O	O
27. Tell someone off	O	O	O	O	O	O
28. Withdraw	O	O	O	O	O	O
29. Damage property	O	O	O	O	O	O
30. Lose my appetite (not want to eat)	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
31. Yell or scream at someone	O	O	O	O	O	O
32. Have police called about me	O	O	O	O	O	O
33. Hurt my work performance	O	O	O	O	O	O
34. Have diarrhea	O	O	O	O	O	O
35. Feel like killing myself	O	O	O	O	O	O
36. Feel physically ill	O	O	O	O	O	O
37. Feel bad about myself	O	O	O	O	O	O
38. Experience muscle tension	O	O	O	O	O	O
39. Feel ashamed	O	O	O	O	O	O
40. Have a stomachache or stomach troubles	O	O	O	O	O	O
41. Have trouble with my boss	O	O	O	O	O	O
42. Hurt my grades	O	O	O	O	O	O
43. Feel dumb	O	O	O	O	O	O
44. Have the dorm staff or the landlord called about me	O	O	O	O	O	O
45. Have trouble sleeping	O	O	O	O	O	O
46. Feel embarrassed	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
47. Hurt my school work	O	O	O	O	O	O
48. Make my friends mad at me	O	O	O	O	O	O
49. Damage a friendship	O	O	O	O	O	O
50. Make my friends afraid of me	O	O	O	O	O	O
51. Get into a hassle at work	O	O	O	O	O	O
52. Get into an argument with my family	O	O	O	O	O	O
53. Drive too fast	O	O	O	O	O	O
	O	O	O	O	O	O
54. Have trouble with co-workers	O	O	O	O	O	O
55. Feel uptight	O	O	O	O	O	O
56. Drive unsafely	O	O	O	O	O	O
57. Interfered with my studying	O	O	O	O	O	O
58. Feel nervous	O	O	O	O	O	O
59. Get into an argument with my friends	O	O	O	O	O	O
60. Feel guilty	O	O	O	O	O	O
61. Felt liking hurting myself	O	O	O	O	O	O
62. Clench my jaw	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
63. Cut or scrape myself (requiring stitches)	O	O	O	O	O	O
64. Bruise another person	O	O	O	O	O	O
65. Damage my car	O	O	O	O	O	O
66. Feel fatigued	O	O	O	O	O	O
67. Feel lonely	O	O	O	O	O	O
68. Break my bone(s)	O	O	O	O	O	O
69. Injure another person(requiring major medical care)	O	O	O	O	O	O
70. Push/shove someone	O	O	O	O	O	O
71. Call another person a name	O	O	O	O	O	O
72. Led me to a minor auto accident	O	O	O	O	O	O
73. Grind my teeth	O	O	O	O	O	O
74. Feel helpless	O	O	O	O	O	O
75. Injure myself (requiring major medical attention)	O	O	O	O	O	O
76. Injure another person (not requiring major medical care)	O	O	O	O	O	O
77. Kick someone	O	O	O	O	O	O
78. Be sarcastic to another person	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
79. Let me to a major auto accident	O	O	O	O	O	O
80. Feel hopeless	O	O	O	O	O	O
81. Dislocate a joint	O	O	O	O	O	O
82. Break someone's bones	O	O	O	O	O	O
83. Put another person down	O	O	O	O	O	O
84. Cry	O	O	O	O	O	O
85. Worry that I might offend someone	O	O	O	O	O	O
86. Grab someone	O	O	O	O	O	O
87. Lash out at an object	O	O	O	O	O	O
88. Insult someone	O	O	O	O	O	O
89. Get a arrested while driving	O	O	O	O	O	O
90. Shake my fist at someone	O	O	O	O	O	O
91. Lose friends	O	O	O	O	O	O
92. Quit a job	O	O	O	O	O	O
93. Get into a conflict with a teacher or professor	O	O	O	O	O	O
94. Use tobacco (smoking or chewing)	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
95. Regret something I did	O	O	O	O	O	O
96. Worry I might get into trouble	O	O	O	O	O	O
97. Hit a wall or something	O	O	O	O	O	O
98. Threaten to hurt someone physically	O	O	O	O	O	O
99. Feel foolish	O	O	O	O	O	O
100.Feel liking killing someone	O	O	O	O	O	O
101.Yell or curse at an object	O	O	O	O	O	O
102.Make other people dislike me	O	O	O	O	O	O
103.Get fired from a job	O	O	O	O	O	O
104.Scare a child	O	O	O	O	O	O
105.Think about getting even	O	O	O	O	O	O
106.Make an obscene gesture	O	O	O	O	O	O
107.Try to pick a physical fight	O	O	O	O	O	O
108.Almost physically hurt someone	O	O	O	O	O	O
109.Throw something	O	O	O	O	O	O
110.Avoid someone I might upset	O	O	O	O	O	O
111.Feel resentful	O	O	O	O	O	O

In the last month, **my** anger has made **me**:	Never	One Time	Two Times	Three Times	Four Times	Five or More Times
112. Get asked to leave a class or work	O	O	O	O	O	O
113. Think about getting even	O	O	O	O	O	O
114. Say something that hurt someone's feelings	O	O	O	O	O	O
115. Get asked to leave a social event	O	O	O	O	O	O
116. Hurt an animal	O	O	O	O	O	O
117. Say something I regretted	O	O	O	O	O	O
118. Physically hurt a child	O	O	O	O	O	O
119. Get a negative evaluation from an employee or teacher	O	O	O	O	O	O
120. Upset a friend	O	O	O	O	O	O
121. Slap someone	O	O	O	O	O	O

The Anger Consequence Severity Scale (ACSS)

Anger-Related Consequence Scale

Please describe <u>your</u> worst anger-related incident in the last <u>year</u> (e.g., the incident involving <u>you</u> being angry).

1. What happened? (Describe in detail.)

2. Did any financial costs result from this incident? Circle one: Yes No

   If yes, describe below:

3. Did any physical damage or health problems happen to <u>you</u> because of this incident? Circle one: Yes No

   If yes, describe in detail below:

4. Did any physical damage or health problems happen to <u>someone else</u> because of this incident? Circle one: Yes No

   If yes, describe in detail below:

5. Was there any damage to objects or property? Circle one Yes No

   If yes, describe in detail below:

6. Was there any damage to a relationship? Circle one Yes No

   If yes, describe in detail below:

7. Did any problems develop at school or work because of this?

   Circle one Yes No If yes, describe in detail below:

8. Where there any other official consequences? Circle one Yes No

   If yes, describe in detail below:

9. Did you feel badly about yourself as a result of this incident?

   Circle one Yes No If yes, describe in detail below:

10. All things considered, how costly was this incident? Circle one.

Extremely Costly	Very Costly	Somewhat Costly	A little Costly	No Cost

Appendix B

Exploratory Factor Analysis Scree Plot

Anger Consequences Scale-Revised: Exploratory Factor Analysis Scree Plot