THE TASTE OF AGGRESSION:

A MODEL FOR PSYCHOPATHY AND REACTIVE AGGRESSION

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A THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Arts
in the Department of Psychology
in the Graduate School of
The University of Alabama

TUSCALOOSA, ALABAMA

2012

ABSTRACT

Psychopathy is a constellation of personality traits including callousness, manipulativeness, and antisocial behavior. Aggression, both in response to provocation and for personal gain, is a key component of antisocial acts of individuals high on psychopathy. Hostile attribution bias (HAB) is the interpretation, in response to ambiguous or accidental circumstances, that another has provoked the subject with hostile intent. This bias is commonly associated with reactive, or retaliatory, aggression. Previous research on HAB has focused mainly on children and has yielded inconsistent validity of this model in adults. The current study examined to what extent college age individuals high on psychopathy view the world as inherently hostile, which in turn explained greater aggressive responses to provocation than individuals low on psychopathy. The garnered information will be useful in both the clinical and forensic psychological settings, especially when targeting interventions with potentially psychopathic individuals.

DEDICATION

This thesis is dedicated to my family, close friends, and mentor, who have encouraged me throughout my academic career, and have offered endless support through all of my endeavors.

LIST OF ABBREVIATIONS AND SYMBOLS

β Beta: a standardized partial regression coefficient

M   Mean: the sum of a set of measurements divided by the number of measurements in the set

N   Sample size of group

p   Probability associated with the occurrence under the null hypothesis of a value as extreme as or more extreme than the observed value

r   Pearson product-moment correlation

SD   Standard Deviation: value of variation from the mean

$<$ Less than

$>$ Greater than

$=$ Equal to

ACKNOWLEDGMENTS

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CHAPTER 1

INTRODUCTION

Current conceptualizations of psychopathy recognize the significant presence of antisocial, and often violent, acts as characteristic of the disorder (Hare, 1981; Hare & Neumann, 2010; Patrick & Zempolich, 1998). There is ample evidence in the empirical literature of the high rate of psychopathy among incarcerated individuals often with a range of criminal activity (Patrick & Zempolich, 1998). Recent research concerning the link between psychopathy and aggression has particularly focused on specific motivations underlying the behavior (Cima & Raine, 2009; Falkenbach, Poythress, Creevy, 2008; Reidy, Zeichner, Miller, & Martinez, 2007; Warren & Clarebour, 2009). These studies show that psychopaths generally commit acts of aggression that are instrumental and coldblooded against strangers and are not crimes of passion (Woodworth & Porter, 2002). However, some characteristics of psychopathy are more closely related to aggression in reaction to provocation. Identifying the motivations for crimes has important implications in legal proceedings such as distinguishing between manslaughter and murder (Cima & Raine, 2009; Woodworth & Porter, 2002).

The current study focused on the mechanisms that might at least partially explain the association between psychopathy and aggression. More specifically, it examined the role of the hostile attribution bias, the extent to which individuals view the world as inherently hostile, as a mediator for more aggressive responses to provocation by individuals high on psychopathy than individuals low on psychopathy. This information is useful in both the clinical and forensic

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psychological settings, especially when targeting interventions with potentially psychopathic individuals.

Psychopathy

A contemporary conceptualization of psychopathy was first offered by Harvey Cleckley in his 1941 edition of *The Mask of Sanity*. Here, Cleckley recognized the psychopathic individual as having an antisocial personality, though with distinct differences from the ordinary criminal including acting without motivation, along with a characteristic lack of remorse or guilt for his/her violation of social norms. Over the years, psychopathy researchers have continued to emphasize a constellation of traits including callousness, lack of emotionality, fearlessness, impulsivity, glib, superficial charm, and failure to conform to social norms as being distinctive features of the psychopathic personality. This personality type can lead to destruction in society in the form of coldhearted attacks on others and guiltless manipulation.

Hare's (1991, 2003) Psychopathy Checklist-Revised (PCL-R) was designed to assess male prisoners and is widely considered one of the most valid measures of psychopathy for this population. The PCL-R places emphasis on the frequency and versatility of criminal activity and is therefore an ideal measure for incarcerated individuals. For non-criminal populations, the Psychopathic Personality Inventory (PPI) was developed as a self-report measure that de-emphasized criminality and focused specifically on the personality traits thought to underlie the disorder (Lilienfeld, 1990; Lilienfeld & Andrews, 1996). Both measures show that psychopathy can generally be conceptualized as a combination of two broad personality domains: affective-interpersonal attributes (i.e., callousness, superficiality, and lack of remorse or empathy) and social deviance (i.e., sensation seeking, impulsivity, and lack of responsibility; Hare, 1993)

which have been supported via factor analysis (Hare, 1991; Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Patrick, Edens, Poythress, Lilienfeld, Benning, 2006).

Different measurement modalities have shown evidence for three domains: affective, interpersonal, and behavioral. For example, Patrick (2008) used a three-trait model in the development of the Triarchic Inventory and the Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995) yields three factor scores. Recently, the items on Hare's Self-Report Psychopathy Scale (SRP-III; Paulhus, Neumann, & Hare, in press) have been shown to include a fourth criminality domain that is currently being debated concerning its relevance to psychopathy (Neal & Sellbom, 2012; Sellbom, 2011). While three- and four-factor models of psychopathy have been proposed (Cooke & Michie, 2001; Hare & Neumann, 2008), most researchers agree that the psychopathic personality is distinguished by at least two facets.

Antisocial behavior (i.e. behavior that disregards others or is harmful to society and is often grounds for arrest) has increasingly been integrated into the conceptualization of psychopathy, particularly reflected in the disinhibition facets of some psychopathy measures (e.g., PCL-R Facet 4; Hare, 2003; SRP-III Criminal Tendencies; Paulhus, Neumann, & Hare, in press), but its inclusion has caused controversy (e.g., Skeem & Cooke, 2010). Cleckley (1941) did not include antisocial or violent acts as a requisite trait of psychopathy, but he attributed acts of violence by psychopaths to impulsivity rather than pre-planned acts of rage (Cleckley, 1976). Although debate continues about whether criminality and violent behavior should be an indicator of the psychopathy construct (Hare & Neumann, 2010; Skeem & Cooke, 2010), most researchers recognize that antisociality and violent behavior are at the very least common sequela of the disorder (e.g., Cooke, Michie, & Hart, 2006; Patrick & Zempolich, 1998).

Aggression

Baron and Richardson (1994, as cited in Meier & Hinsz, 2004) define aggression as "a behavior meant to harm another living being that intends to avoid such harm." Aggressive acts often manifest differently across individuals with and without psychopathy. For instance, acts of violence committed by people high on psychopathy tend to be more opportunistic, impulsive, and wide ranging, whereas those committed by non-psychopaths are often against people they know well and more frequently result in extreme violence (Patrick & Zempolich, 1998). Criminal psychopaths and non-psychopaths have been shown to be different in their use of violence (Serin, 1991), but less is known about non-criminal aggression in these groups.

Researchers often distinguish between *reactive* (response to provocation) and *proactive* (unprovoked, goal-oriented) aggression (e.g., Dodge & Coie, 1987).[1] More specifically, reactive aggression is "hot-blooded" anger that lacks self-control and includes hostile attacks (e.g., Woodworth & Porter, 2002). Conversely, proactive aggression is more controlled, "cold-blooded," and highly organized or instrumental with the objective being some kind of reward (e.g., Dodge, Lochman, Harnish, Bates, & Pettit, 1997). Dodge and Coie (1987) showed that in boys, attributional bias was more often present when they exhibited reactive aggression than proactive aggression.

Important differences have been shown between psychopathic subfacets and the type of aggression employed. Global psychopathy is most often associated with proactive aggression in both inmate (Cima & Raine, 2009; Serin, 1991) and non-incarcerated samples (Falkenbach, Poythress, & Creevy, 2008; Reidy, Zeichner, Miller, & Martinez, 2007). However, when psychopathy is viewed as a dimensional construct, a different pattern emerges. Cima and Raine

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[1] These terms have also been called instrumental, predatory, and coldhearted vs. affective and hostile aggression, respectively, but these labels are interchangeable, thus proactive and reactive will be used throughout the current study.

(2009) found that affective-interpersonal personality traits were only associated with proactive

aggression, whereas social deviance was significantly correlated with both types of aggression.

Other researchers found the opposite pattern with affective-interpersonal psychopaths using

roughly the same amount of both types of aggression but socially deviant psychopaths using

more reactive aggression than proactive aggression (Falkenbach, Poythress, & Creevy, 2008;

Reidy, Zeichner, Miller, & Martinez, 2007). In addition to conflicting evidence for type of

aggression associated with type of psychopathy, little is known about the theoretical

underpinnings of these relationships (Falkenbach, Poythress, & Creevy, 2008; Vitale, Newman,

Serin, & Bolt, 2005). What is clear however, is that social information processing and biases

have long been implicated in child aggression research (Dodge & Frame, 1982), and have the

potential to be highly relevant in understanding the link between psychopathy and reactive

aggression.

Hostile Attribution Bias

Hostile attribution bias (HAB) is the over-attribution of hostile intent to others in

ambiguous situations when this attribution is not warranted (Dodge & Frame, 1982; Crick &

Dodge, 1994). Children with this bias misinterpret benign provocations from their peers as

hostile while ignoring disconfirming information or clues that point to the interaction being

nonthreatening (Dodge & Newman, 1981). Additionally, Dodge and Newman (1981) showed

that in ambiguous situations, aggressive boys were more likely to respond quickly, pay less

attention to social cues, and over-attribute the hostile intent of their peers. Thus, a person who (a)

is more likely to over-attribute hostile intent in ambiguous situations, (b) shows this bias when

the provocation is directed toward them, and (c) is more likely to react aggressively in

ambiguous situations, may have a distorted social processing system that explains the

relationship between psychopathy and increased reactive aggression.

Extensive research on children and adolescents has been conducted showing that

maladaptive social processing systems and HAB often result in reactive aggression (Dodge &

Coie, 1987; Dodge, Price, Bachorowski, & Newman, 1990; Orobio de Castro, Veerman, Koops,

Bosch, & Monshouwer, 2002; Pettit, Polaha, & Mize, 2001), but less is known about HAB in

adults (Epps & Kendall, 1995). A few studies have examined HAB in psychopathic adults with

mixed results. Epps and Kendall (1995) showed that HAB was present in more aggressive

individuals in an undergraduate sample. Serin (1991) and Vitale and colleagues (2005) both

administered vignettes where the story's subject was the victim of a negative social interaction

with ambiguous actions of a provocateur that could be interpreted as either malicious or

accidental. Serin found that psychopaths attributed more hostile intent to the provocateur than

did non-psychopaths, but Vitale and colleagues found that HAB did not mediate the relationship

between psychopathy and violent crime. Additionally, Miller and Lynam (2003) did not find that

psychopathy was associated with the HAB, only aggressive responses. Given these conflicting

results, a study with comprehensive measures of psychopathy, aggression, and HAB is needed to

directly address the relationship between these variables. The current study investigated the

social-cognitive processes that lead non-criminal adults high on psychopath to react more

aggressively in ambiguous situations.

Objectives

Researchers have proposed a few models to account for the amount and type of

aggression utilized by psychopaths such as emotion regulation (Blair, 2010; Patrick &

Zempolich, 1998), reward systems and anxiety (Falkenbach, Poythress, Creevy, 2008), and

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attributional style (Serin, 1991; Vitale, Newman, Serin, & Bolt, 2005). Some inconsistencies were shown in each of these studies and there continues to be a gap in the literature surrounding the underpinnings of why psychopaths commit certain types of crime. The current study adds significantly to the literature by re-evaluating conflicting findings and investigating new ways of thinking of the cognition behind aggression in individuals high on psychopathy. The main purpose of the study was to add to knowledge about how social information is processed by people who score high on psychopathic personality traits relative to those low on this construct and how these perception biases may lead to increased reactive aggression. Second, I re-examined hostile attribution bias, a construct commonly studied in children, in an adult population to settle conflicting outcomes in previous studies (Serin, 1991; Vitale et al., 2005; Miller & Lynam 2003). Importantly, I used a non-incarcerated sample to test the proposed model which made findings generalizable to normative aggressive functioning.

Furthermore, no studies to date have examined HAB using the Hot Sauce paradigm of aggression. Historically, aggression has been assessed in laboratory settings using either verbal attacks or pain infliction (e.g. by electric shock) given by the participant to another person (Lieberman, Solomon, Greenberg, & McGregor, 1999). Both of these methods have shortcomings including believability that the act will harm the other person, willingness to actually inflict pain, ethical issues, and construct validity. Additionally, many undergraduate psychology students have heard of the shock experiments performed by Milgram in the 1960s and may not believe that shocks will truly be delivered to the confederate, therefore invalidating the deception feature. The Hot Sauce paradigm has perforce been proposed as an alternative method of assessing infliction of pain by a participant to a target (McGregor et al., 1998). In this model, the participant is provoked in some way by a supposed fellow participant and is then

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given the opportunity to retaliate by giving an amount of extremely hot sauce to the other participant who is said to strongly dislike spicy food. Aggression is measured by the amount of hot sauce allocated to the other individual. This paradigm has been shown to be an effective measure of reactive aggression with real-world theoretical foundations in cases of abuse and retaliation (Witt, Donnellan, & Blonigen, 2009; Lieberman et al., 1999; Meier & Hinsz, 2004). The current study investigated HAB as a mediator between psychopathy and reactive aggression in a college sample (see Figure 1).

Figure 1.

Model examining overall psychopathy predicting reactive aggression via HAB.
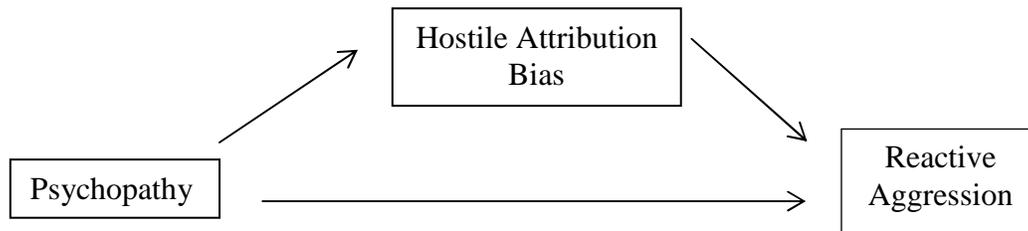
Hypotheses

1) I hypothesized that psychopathy scores would be positively correlated with scores of reactive aggression (Falkenbach, Poythress, & Creevy, 2008).

2) I hypothesized that HAB would be correlated with (a) psychopathy and (b) reactive aggression (Dodge & Coie, 1987).

3) I hypothesized that HAB would partially mediate the relationship between psychopathy and reactive (but not proactive) aggression.

4) I hypothesized that reactive aggression would be more strongly correlated with facets of psychopathy that measure social deviance than those describing affective-interpersonal styles. These relationships would be explained by HAB as a partial mediator.

5) I hypothesized that people high on the affective-interpersonal facet would predict greater use of proactive aggression (Cima & Raine, 2009).

CHAPTER 2

METHOD

Participants

Participants were recruited from the University of Alabama through the Department of

Psychology's subject pool. The estimated sample size needed (250) was determined based on

recommendations for path analysis, which is the most complex analysis conducted in this study.

The most complex model (see Figure 2) would involve eleven parameters to be estimated, and

quantitative scholars (e.g., Kline, 2011) recommend 20 participants per parameter.

Figure 2.

Potential facets of psychopathy predicting reactive aggression via HAB
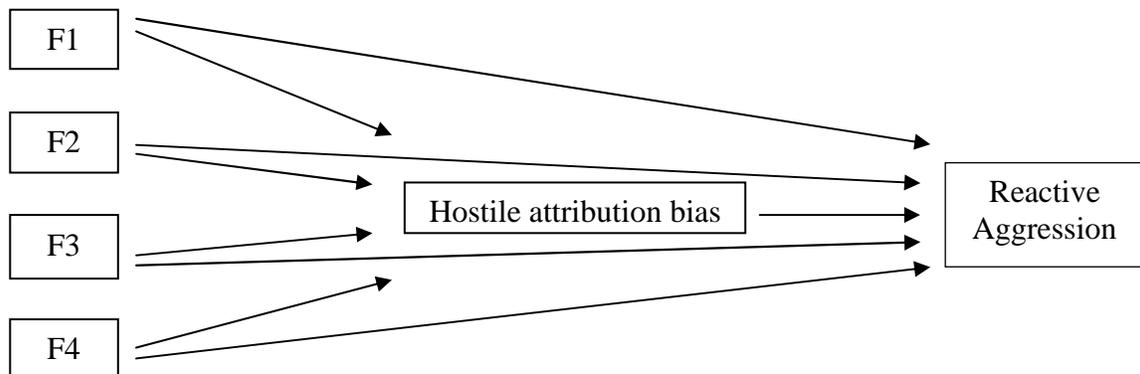
We also conservatively estimated an attrition rate of 30 participants who complete Phase 1, but

who would not appear for Phase 2. Of the 325 undergraduate students who participated in Phase

1, only 138 completed Phase 2. Although there was a much higher attrition rate than expected, I

decided to continue with the current sample because of time constraints. To eliminate invalid test

profiles based on inconsistent non-responding, as such response styles would introduce random measurement error into the analyses due to uncooperativeness, the following MMPI-2-RF exclusion criteria were applied: Cannot Say-revised ≥ 18, and Variable Response Inconsistency - Revised or True Response Inconsistency - Revised T ≥ 80. Therefore, those individuals who provided 18 or more unscorable responses or exceeded the typical level of random or fixed responding were identified as invalid, and their data was not used. This procedure eliminated 10 participants leaving a final sample of 47 (36.7%) men and 80 (62.5%) women. The final sample ranged in age from 16 to 31 years (M = 19.31, SD = 1.55). In terms of ethnic background, most were Caucasian (78%), with about 17% African-American, 3% Hispanic, and the remaining 2% of various other backgrounds.

Measures

      Psychopathy.

      Minnesota Multiphasic Personality Inventory - 2 - Restructured Form (MMPI-2-RF). The MMPI-2-RF (Ben-Porath & Tellegen, 2008) is a 338 item self-report measure of psychopathology and personality that uses a True/False format. The technical manual by Ben-Porath and Tellegen (2008) cites extensive research on the psychometrics of this instrument's scale scores. Sellbom, Ben-Porath, Patrick, Wygant, Gartland, and Stafford (2012) showed the utility of the MMPI-2-RF for estimating the PPI Fearless Dominance and Impulsive Antisociality facets of psychopathy; these estimates were used in the current study.

      Hare Self-Report Psychopathy Scale – 3rd Edition (SRP-III). The SRP-III (Paulhus, Neumann, & Hare, in press) is a 64 item self-report measure of psychopathy that was designed to mirror, to the extent possible, the PCL-R and its four facets (Williams et al., 2007). The present study used the SRP-III short form which contains 28 items from the original measure.

Participants responded to questions on a 5-point Likert scale ranging from Strongly Agree to Strongly Disagree. The scale has four subscales: Interpersonal Manipulation (IPM; conning, manipulation, lying, blaming others), Callous Affect (CA; low empathy and remorse, lack of concern for others' feelings), Erratic Life Style (ELS; impulsivity, recklessness, thrill seeking, boredom proneness), and Criminal Tendencies (ASB; criminal activity, drug problems; Neal & Sellbom, 2012). The ELS and ASB subscales both describe behavioral components of psychopathy with ELS describing tendencies to engage in highly external behavior while ASB is a more specific measure of actual illicit behavior. Overall, the SRP-III captures many of the characteristic traits of psychopathy and shows good construct validity (Neal & Sellbom, 2012). Subscale alpha reliabilities from a student sample ranging from .74 to .82 with the overall scale reliability of .81 were reported (Paulhus, Neumann, & Hare, in press).

Levenson's Self-Report Psychopathy Scale. The LSRP (Levenson, Kiehl, & Fitzpatrick, 1995; Appendix A) is a 26-item self-report inventory of psychopathic personality traits designed for use in non-institutionalized populations. In addition to a Total Score, research (e.g., Brinkley, Diamond, Magaletta, & Heigel, 2008; Sellbom, 2011) has indicated that the LSRP yields three factor scores (Egocentricity, Callous, and Antisocial). Brinkley et al. (2001) showed that the LSRP correlates moderately with the PCL-R, and other studies have shown more general support for its construct validity (Levenson et al., 1995; Lynam et al, 1999; Sellbom, 2011).

Triarchic Psychopathy Measure (TriPM). The 58 item TriPM (Patrick, 2010; Appendix B) measures psychopathy by focusing on three historical constructs of the disorder: disinhibition, boldness, meanness. The disinhibition construct (i.e. impulsivity, hostility, and oppositional) has been identified as a primary characteristic of psychopathy and is a central feature of most measures of psychopathy (Patrick, Fowles, & Krueger, 2009). However, researchers have placed

varying emphasis on the second two factors. Boldness (i.e. social dominance, venturesomeness, and low anxiety) is best tapped by the PPI Factor 1, Fearless Dominance, whereas meanness (i.e. callousness, cruelty, and aggressiveness) is captured by Factor 1 of the PCL-R (Patrick, 2010; Patrick, Fowles, & Krueger, 2009). This measure shows some promise in validity studies comparing it to other established measures of psychopathy in a variety of samples (Patrick, 2010; Sellbom & Phillips, in press; Stanley, Wygant, & Sellbom, in press).

Aggression.

Aggression Questionnaire (AQ). Buss and Perry's 1992 Aggression Questionnaire is a common measure of aggression with 29 questions (Appendix C). The measure yields four subscales: Physical Aggression, Verbal Aggression, Anger, and Hostility (Buss & Perry, 1992). The questionnaire has been used in a variety of studies including others that use the Hot Sauce Paradigm (Meier & Hinsz, 2004; Lieberman et al., 1999). This scale was used to assess overall aggression as well as to examine the various components.

Reactive Proactive Aggression Questionnaire (RPQ). The RPQ (Raine et al., 2006; Appendix D) is a 23 item measure that was developed to assess proactive (12 items) and reactive (11 items) aggression in children and adolescents. Though originally intended to be used with children, the measure has been successfully used with adult samples (Tharp, Sharp, Stanford, Lake, Raine, & Kent, 2011). The questionnaire asks participants how frequently they engage in various forms of aggression on a three point scale. The scale shows reliability scores ranging from .81 to .91 and acceptable construct validity scores (Raine et al., 2006). The current study used this self-report scale as a secondary measure of reactive aggression in addition to the hot sauce procedure as well as the only measure of proactive aggression.

Hot Sauce. A Hot Sauce variable was created based upon procedures outlined by Lieberman and colleagues (1999). This variable is a count amount of hot sauce the participant gave to another "fellow participant" measured in grams. Specifics of procedures that culminated in this measurement are provided in the Procedures section.

Hostile Attribution Bias.

Internal, Personal and Situational Attributes Questionnaire (IPSAQ). The IPSAQ (Kinderman & Bentall, 1996; Appendix E) is a 32 item self-report measure of causal locus. Each item describes a brief scenario that is either positive or negative (e.g. "A friend gave you a lift home" or "A friend refused to talk to you") and the participants must decide what caused the main event (i.e. something about you, something about another person, or something about the situation). This measure assesses whether participants attribute events to internal attributions (themselves) or external attributions (other persons or situations).

Ambiguous Intentions Hostility Questionnaire (AIHQ). The AIHQ (Combs et al., 2007; Appendix F) is a measure of hostile social-cognitive biases where 15 vignettes are presented that reflect causes that are ambiguous, intentional, and accidental. The brief scenarios (e.g. "A friend of yours slips on the ice, knocking you onto the ground") are followed by two qualitative questions (i.e. "What do you think the real reason why_____?" and "What would you do about it?") as well as three Likert scale questions that ask the person to evaluate the intentionality of the other person's actions, how angry it would make them, and how much they would blame the other person. Combs and his colleagues (2007) found the AIHQ to be a valid measure of hostile social-cognitive biases compared with other measures of Paranoia and the IPSAQ.

Additional Measures.

Positive Affect and Negative Affect Scales (PANAS). Watson, Clark, and Tellegen (1998) developed the PANAS as a reliable and valid way to measure affect (Appendix G). The scale is comprised of two 10 item scales (one measuring positive affect and one measuring negative affect) which combine to create a 20 item checklist that asks participants to rate the degree to which each of 20 emotion words describes her or his current emotional state. In the current study, the PANAS was used as an indication of participants' level of distress before leaving the study.

Taste Preferences Inventory. Participants also completed an 18 item Taste Preferences Inventory developed by the researcher (Appendix H). Participants were asked to simply rank order 18 different flavors and tastes. This measure acted as an assessment of the participant's own preference toward spicy food and served as a cover story for the "partner's preference" in the hot sauce manipulation.

Post Study Interview. The researcher conducted a brief Post Study Interview at the conclusion of the research protocol during which participants were asked to indicate their reaction to the hot sauce and questions to probe their believability of the study and if they had heard about the deception aspect of the study before participating (Appendix I). This measure assessed their own preferences toward the hot sauce as well as their expectations in giving the hot sauce to the other person. Most importantly, this interview helped the researcher detect cross-talk between participants from the subject pool and identify those who may have entered the study knowing that there was deception involved or guessed as much during the procedures. Though the Post Study Interview was conducted, I elected not use information gathered to exclude participants to conserve power.

Procedures

  Phase 1. When participants signed up for the study through the subject pool, they were sent an email with an identification number and a link to the online portion of the study. The first page of the online questionnaires was a Participant Information Sheet (Appendix J) that participants read and indicated consent to the study by clicking "Accept" and continuing. Alternatively, they were given a chance to decline to participate without receiving penalty. The online portion of the study then consecutively linked together the following questionnaires: brief demographic survey (Appendix K), IPSAQ, AQ, RPQ, TriPM, SRP-III, and LSRP. These combined 200 items were completed in one sitting and took approximately one hour. All data was stored in the secure online database, was only identifiable by ID number, and was only accessed by the PI and the faculty supervisor.

  Phase 2. Upon arriving at Gordon Palmer room 273A, participants encountered in the waiting area another student who was a confederate of the study posing as another research participant. Participants worked with a "fellow participant" of the same gender as them to avoid any cross-gender effects that may moderate or otherwise confound hostile attributions. This confederate asked the research participant "*Are you here for the study too?*" to ensure the participant believed that there was actually another research participant involved. The participant was taken into the lab and given a hard copy of the Participant Information Sheet. The research assistant reviewed the informed consent information, asked if they have any questions at that time, and asked them if they agreed to continue participating. The researcher explained that this was actually two studies, one on personalities and one on taste preferences. The researcher used the same ID number for all tasks that the participant was given when she/he signed up for the study and completed Phase 1.

The participant was asked to write a short essay describing their political affiliation and was then left alone while the researcher supposedly attended to the other participant (the confederate) in another room. When the participant was finished with his/her essay, they began taking the AIHQ, LSRP, and MMPI-2-RF on the computer. They were then told they were exchanging essays with the confederate, but really they received one of two pre-written, standardized essays written by the researcher. The essays were assigned based upon how the participants responded to the political affiliation question on the Brief Demographic Survey. Participants who responded Very Liberal or Liberal received the anti-liberal essay and participants who responded Very Conservative or Conservative received the anti-conservative essay (Appendix L). After reading the respective essay, they were asked to complete the Grading Sheet to evaluate the fellow participant's work based on six criteria and a comments section.

They were then told that they would begin the second study, the taste study, shortly and were asked at this time to rate how much they like different flavors (i.e. sweet, salty, bitter, spicy, etc.) on the Taste Preferences Inventory. Participants were then given standardized feedback (a filled in Grading Sheet; Appendix M), presumably from the other participant, about their essay that was negative and provocative, but not personally criticizing to allow for ambiguity of hostile intent. They had time to look over this sheet and the researcher ensured that they had read all of the comments before moving on to the next step.

The participant was then given the ability to retaliate against the confederate participant by giving him/her amounts of very spicy hot sauce. First, they were told that they had been randomly chosen to be the partner who gives the samples to the other participant. The participant drew from a bowl a flavor to test on the confederate (all the pieces of paper said "Spicy") and the researcher brought them the sauce. Second, the participant was asked to taste a small dab of the

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hot sauce so they knew how hot it was; water was provided after they taste it. The hot sauce was made from a mixture of Heinz chili sauce and Tapatio salsa picante hot sauce (based on Lieberman et al., 1999). We asked if the participant had a food allergy to any of the ingredients in the hot sauce (or were unsure if she/he has such allergies), and if so, this person was allowed to skip the taste testing and asked to continue to the next step. Third, the participant was informed that the confederate had a strong aversion to hot sauce (based on the Taste Preferences Inventory), that each drop would create more and more discomfort, and that the confederate must consume everything they are given. The participant was given time to spoon the mixture onto a small paper plate for the confederate.

While the researcher supposedly took the hot sauce to the confederate to taste, the participant completed the PANAS mood scale to determine current self-reported distress. The researcher then orally gave the participant a brief post-study interview about their reaction to the study. The questionnaire asked about believability and salience of the procedures. Participants were then verbally debriefed by the confederate RA to show that they did not, in fact, eat the hot sauce, and that they were not harmed in any way. The researcher made sure that the participant had a chance to ask questions and was not upset about the deception. The participants were asked not to talk about the deception used in the study with anyone and to keep the true purpose of the study a secret. They received the Participant Information Sheet to keep with the contact information of the investigators and the IRB Office for Research Compliance. Each participant participated for roughly 1 hour online during Phase 1 and 1.5 hours in the lab during Phase 2 and received 3 hours of credit total from the subject pool.

CHAPTER 3

RESULTS

Descriptive Statistics

Descriptive statistics and internal consistency reliability estimates for all variables used in

the final analyses are reported in Table 1. I examined all variables for normality of their

distributions. Most variables fell within an acceptable range for both skewness (+/-1) and

kurtosis (+/-1), except for the RPQ Proactive Aggression variable (skewness = 2.206; kurtosis =

6.271). I normalized the Proactive Aggression variable using square root transformations which

is reported in Table 1. The Hot Sauce variable was also not normally distributed, but because it is

clearly a count distribution with substantial positive skew, no transformation would make it

normal. I retained it as a count variable and used procedures to account for its distribution in the

path analysis.

Table 1.
Descriptive statistics of all variables used in this study

Scales	Mean	SD	Min	Max	Skewness	Kurtosis	Chronbach's alpha
PY Total	-.01	.83	-1.56	2.57	.59	.10	.84
Meanness	-.01	.76	-1.18	2.62	.91	.72	.95
Disinhibition	-.00	.79	-1.83	2.77	.86	.85	.87
Boldness	.00	.89	-2.47	2.19	-.21	-.04	.83
AIHQ tot	2.16	.27	1.47	2.91	.46	.44	.81
AMB	2.06	.38	1.33	3.04	.36	-.37	.67
INT	2.93	.33	1.64	3.56	-.57	1.21	.64
ACC	1.50	.34	1.02	2.80	1.53	2.94	.76

PB	.59	.24	.00	1.00	-.04	-.76	N/A
EB	2.95	3.08	-5.00	9.00	-.17	-.28	N/A
Hot Sauce	16.81	21.06	.00	128.00	2.63	8.57	N/A
Reactive	8.01	3.53	.00	20.00	.364	.17	.79
Proactive	.94	.82	.00	3.00	.37	-.66	.82
Physical	19.83	7.55	9.00	40.00	.54	-.67	.84
Verbal	13.78	4.36	6.00	25.00	.50	-.23	.77
Anger	15.36	4.98	8.00	32.00	1.02	1.29	.79
Hostility	20.24	6.37	7.00	38.00	.47	-.07	.78

Note: PY Total = psychopathy total score; AIHQ = Ambiguous Intentions Hostility Questionnaire; AMB = AIHQ Ambiguous; INT = AIHQ Intentional; ACC = AIHQ Accidental; PB = IPSAQ (Internal, Personal, Situational Attributions Questionnaire) Personal Bias; EB = IPSAQ (Internal, Personal, Situational Attributions Questionnaire) External Bias; Proactive = square root transformed RPQ (Reactive Proactive Aggression Questionnaire) Proactive Aggression subscale.

Exploratory Factor Analysis

In order to generate psychopathy factor scores, I conducted exploratory factor analysis (EFA) to extract the optimal number of factors. All subscales from the different psychopathy measures were included in this analysis: the three factors of the LSRP, the three domain scales of the TriPM, the four factor scores of the SRP-III, and two MMPI-2-RF-estimated PPI factors. I subjected these scale scores to an EFA using maximum likelihood estimation with oblique (promax) rotation. To determine the appropriate number of factors to extract, the Kaiser (1960) criterion of an eigenvalue above 1.00 was used to indicate a viable factor, with an *a priori* maximum of four factors being considered, as this is the maximum number indicated in the literature. A three-factor model met the Kaiser criterion, was conceptually optimal, and was therefore retained for rotation to simple structure. Table 2 displays the factor loadings for the rotated structure. The resulting factors resemble Patrick's (2010) Triarchic model of Disinhibition, Meanness, and Boldness (see Table 2 for factor loadings), and the factors were therefore labeled accordingly.

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Table 2.
Percent variance explained and factor loadings for exploratory factor analysis of psychopathy scales

	Meanness (38.99%)	Disinhibition (12.15%)	Boldness (8.93%)
SRP Callous Affect	.953		
TriPM Meanness	.878		
SRP Interpersonal Manipulation	.781		
LSRP Callous	.664		
SRP Criminal Tendencies	.648		
LSRP Egocentricity	.392	.306	
PPI Impulsive Antisociality		.831	
TriPM Disinhibition		.782	
LSRP Antisocial		.773	
SRP Erratic Lifestyle	.343	.457	
PPI Fearless Dominance			.930
TriPM Boldness			.702

Note: SRP = Self-Report Psychopathy Scale; TriPM = Triarchic Psychopathy Measure; LSRP = Levenson Self-Report Psychopathy Scale; PPI = Psychopathic Personality Inventory.

To create the three factors, the subscales from each psychopathy measure that loaded onto each of the three factors were standardized (i.e., transformed into z-scores) and averaged. For scales that significantly loaded onto more than one factor, the scale was included in the factor on which it had the higher loading. To create a total psychopathy score, I standardized the total scores of each of the four psychopathy measures (TriPM, LSRP, SRP, and PPI) and averaged the values.

Correlation Analyses

Next, I conducted correlation analyses to examine the zero-order associations between psychopathy measures, HAB measures, and both self-report and behavioral measures of aggression (see Table 3). Most correlations followed conceptually expected patterns. In examining the relationship between psychopathy and HAB, the IPSAQ Personal Bias and

External Bias subscales were not associated with any of the psychopathy or aggression measures. Psychopathy Total and the Disinhibition factor showed significant, medium correlations with all AIHQ scales. The Meanness factor was only significantly correlated with AIHQ Total and Accidental, and Boldness was not significantly correlated with any of the AIHQ scales. I then explored the relationships between psychopathy and aggression. The Psychopathy Total score had medium to large correlations with all aggression measures. Disinhibition also showed medium to large correlations with aggression measures, and compared to the Psychopathy Total score, Disinhibition evidenced larger correlations with the aggression measures, with exceptions being Proactive Aggression and Physical Aggression. Meanness showed medium to large correlations with all aggression measures except Hot Sauce and Anger. The Boldness factor showed a medium correlation with AQ Physical Aggression and an unexpected medium negative correlation with AQ Hostility. Finally, concerning the association between aggression and AIHQ measures, most correlations showed medium effects. Hot Sauce, Reactive Aggression, and Verbal Aggression were significantly correlated with all four AIHQ scales. Physical Aggression had medium correlations with AIHQ Total and Accidental but was not correlated with the other two AIHQ subscales. Intercorrelations among the aggression measures showed small to large effects for all correlations, including Hot Sauce. Unexpectedly, Proactive Aggression was more strongly correlated than Reactive Aggression with psychopathy variables and had stronger than expected relationships with AIHQ variables.

Table 3.

Correlations between aggression measures, psychopathy scales, hostile attribution measures.

Scales	PY Total	Mean	Dis	Bold	AIHQ Total	AMB	INT	ACC	PB	EB	Hot Sauce	Reactive	Proactive	Phy	Ver	Ang	Hos
PY Total	-	.86**	.81**	.50**	.32**	.24**	.19*	.29**	-.14	-.08	.27**	.44**	.57**	.66**	.49**	.28**	.26**
Mean		-	.55**	.21*	.22*	.15	.11	.24**	-.14	-.10	.16	.34**	.54**	.55**	.40**	.11	.30**
Dis			-	.15	.36**	.33**	.24**	.25**	-.16	-.03	.34**	.53**	.53**	.61**	.50**	.53**	.46**
Bold				-	.04	-.02	.03	.10	.01	-.06	.00	.04	.11	.27**	.16	-.11	-.30**
AIHQ Total					-	.81**	.72**	.77**	.08	.11	.31**	.39**	.33**	.25**	.40**	.33**	.31**
AMB						-	.35**	.44**	.11	.06	.24**	.24**	.34**	.17	.33**	.37**	.33**
INT							-	.33**	.06	.03	.24**	.46**	.11	.17	.31**	.25**	.15
ACC								-	.01	.15	.24**	.21*	.30**	.25**	.28**	.12	.22*
PB									-	.07	-.05	-.15	-.08	-.14	-.00	-.01	.02
EB										-	.05	.05	.10	.05	-.07	.05	-.10
Hot Sauce											-	.25**	.24**	.23**	.18*	.25*	.20*
Reactive												-	.31**	.68**	.58**	.61**	.37**
Proactive													-	.44**	.37**	.34**	.28**
Physical														-	.58**	.49**	.27**
Verbal															-	.61**	.48**
Anger																-	.45**
Hostility																	-

Note: PY Total = psychopathy total score; Mean = Meanness; Dis = Disinhibition; Bold = Boldness; AIHQ = Ambiguous Intentions Hostility Questionnaire; AMB = AIHQ Ambiguous; INT = AIHQ Intentional; ACC = AIHQ Accidental; PB = IPSAQ (Internal, Personal, Situational Attributions Questionnaire) Personal Bias; EB = IPSAQ (Internal, Personal, Situational Attributions Questionnaire) External Bias; Phy = AQ (Aggression Questionnaire) Physical Aggression; Ver = AQ (Aggression Questionnaire) Verbal Aggression; Ang = AQ (Aggression Questionnaire) Anger; Hos = AQ (Aggression Questionnaire) Hostility. *$p < .05$. **$p < .01$.

Given some of the unexpected relationships between variables shown by the correlational analyses, I had to make decisions about which variables to use in the path analyses. Although the AIHQ Total score and Ambiguous subscale both showed statistical and conceptual associations with psychopathy and aggression measures, the AIHQ Total score is more representative of the HAB construct and was therefore used for the path analyses. Additionally, to reduce the possibility for Type I errors (especially in light of the smaller than anticipated sample size), I focused on the AIHQ Total score as the HAB mediator as there was no clear pattern across subscales of the AIHQ. The Personal Bias and External Bias scales from the IPSAQ were not significantly correlated with any of the other measures, including other measures of HAB, and were not used for further analyses.

Path Analyses

I then conducted path analysis to examine the direct and indirect effects of psychopathy, HAB, and aggression. Figures 3-16 show all standardized parameter estimates and associated p-values for each of the estimated models. All indirect (i.e., mediation) effects were tested using bootstrapping to generate standard errors of the indirect parameter (psychopathy to reactive aggression via HAB; beta weights and p-values for indirect effects can be found in figure captions) to account for possible asymmetries in data (Preacher & Hayes, 2004). This procedure is now the standard of practice when calculating standard errors for indirect effects. Further, because all models estimated are fully saturated and thus perfectly reproduce observed data, model fit statistics are not reported.

First, I conducted a series of path analysis using all aggression variables as dependent variables (in separate models), the Psychopathy Total score as the predictor variable, and the AIHQ Total score as the HAB mediator (see Figures 3-9).

Figure 3.
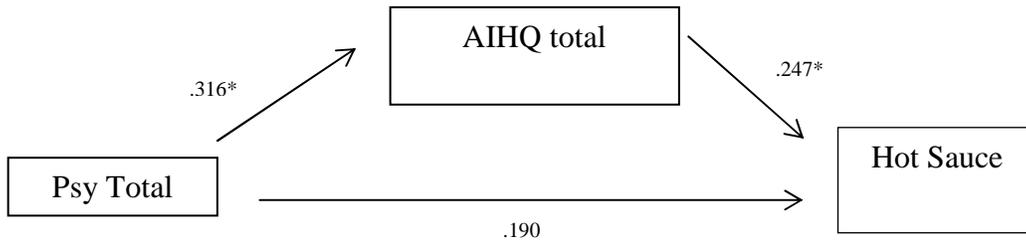
Model examining overall psychopathy predicting reactive aggression via HAB. Indirect effect of Psychopathy Total on Hot Sauce ($\beta = .078$, $p \leq .05$).
Note: *$p \leq .05$

Figure 4.
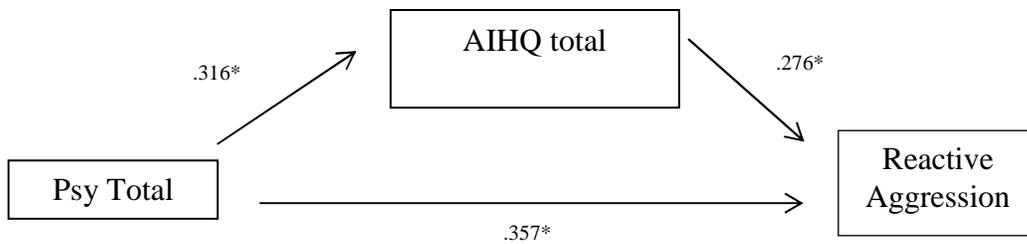
Model examining overall psychopathy predicting reactive aggression via HAB. Indirect effect of Psychopathy Total on Reactive Aggression ($\beta = .087$, $p \leq .05$).
Note: *$p \leq .05$

Figure 5.
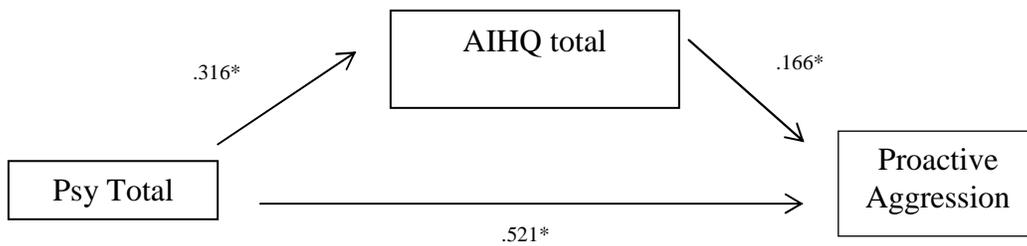
Model examining overall psychopathy predicting proactive via HAB. Indirect effect of Psychopathy Total on Proactive Aggression ($\beta = .052$, $p = .070$).
Note: *$p \leq .05$

Figure 6.
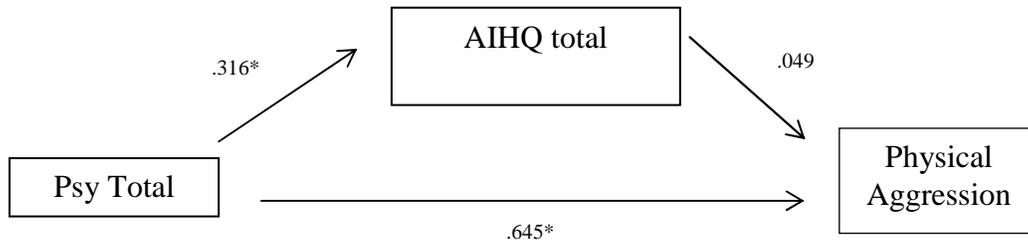
Model examining overall psychopathy predicting physical aggression via HAB. Indirect effect of Psychopathy Total on Physical Aggression (β = .015, *p* = .568).
Note: **p ≤ .05*

Figure 7.
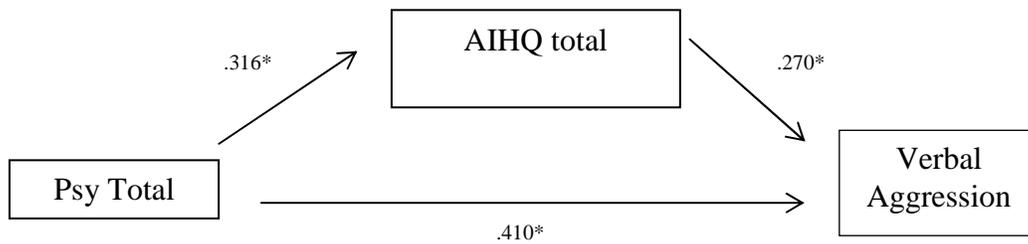
Model examining overall psychopathy predicting verbal aggression via HAB. Indirect effect of Psychopathy Total on Verbal Aggression (β = .085, *p* ≤ .05).
Note: **p ≤ .05*

Figure 8.
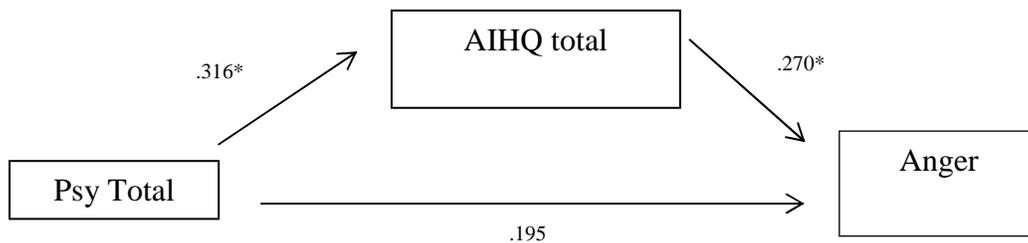
Model examining overall psychopathy predicting anger via HAB. Indirect effect of Psychopathy Total on Anger (β = .085, *p* ≤ .05).
Note: **p ≤ .05*

Figure 9.
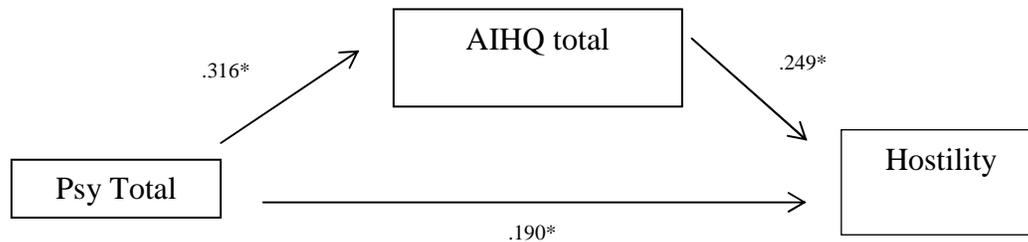
Model examining overall psychopathy predicting hostility via HAB. Indirect effect of Psychopathy Total on Hostility ($\beta = .079$, $p \leq .05$).
Note: *$p \leq .05$

The Psychopathy Total score was associated with a significant direct effect on all aggression scores except for Hot Sauce (Figure 3) and Anger (Figure 8). For each of these models, Psychopathy Total significantly predicted AIHQ Total ($\beta=.316$, $p=.001$). In all models, except where Physical Aggression was used as the dependent variable (Figure 6), AIHQ Total significantly predicted the aggression variable. An examination of the indirect effects revealed that the effects of Psychopathy Total via HAB predicting the aggression variables were significant (ps $< .05$) in all models except when Proactive Aggression (Figure 5) and Physical Aggression (Figure 6) were used as dependent variables.

Second, I conducted a series of path analysis for predicting aggression scores with the three psychopathy factor scores, and with AIHQ Total again being used as the HAB mediator (see Figures 10-16).
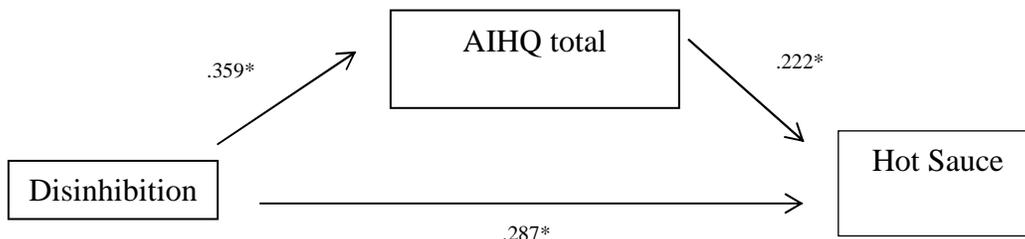
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Figure 10.

Model examining disinhibition predicting reactive aggression via HAB. Indirect effect of Disinhibition on Hot Sauce (β = .080, *p* ≤ .05).
Note: **p* ≤ .05

Figure 11.
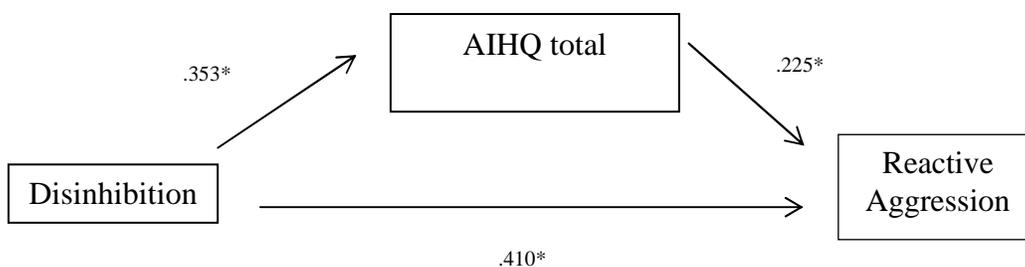
Model examining disinhibition predicting reactive aggression via HAB. Indirect effect of Disinhibition on Reactive Aggression (β = .353, *p* = .070).
Note: **p* ≤ .05

Figure 12.
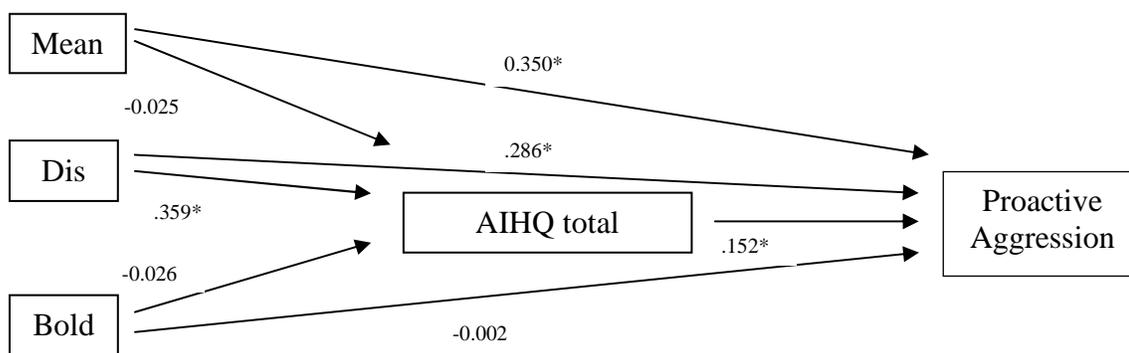
Model examining psychopathy factors predicting proactive aggression via HAB. Indirect effect of Meanness on Proactive Aggression (β = -.004, *p* = .840). Indirect effect of Disinhibition on

Proactive Aggression (β = .056, *p* = .130). Indirect effect of Boldness on Proactive Aggression (β = -.003, *p* = .841).
Note: **p* ≤ .05
Figure 13.
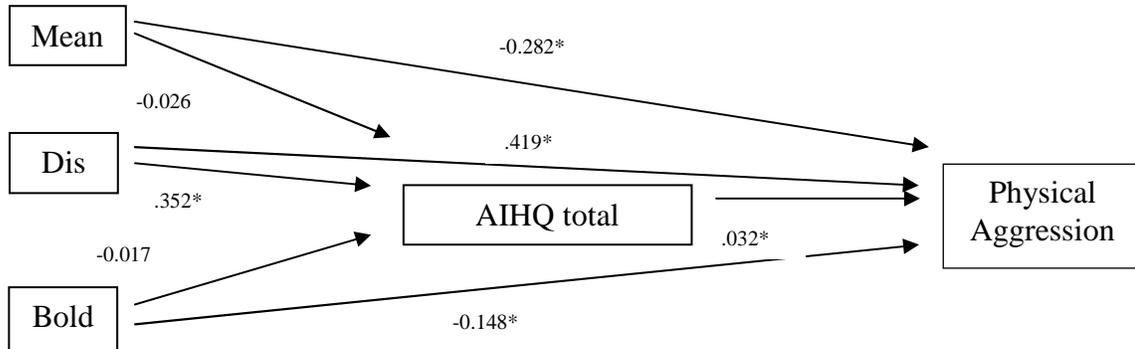
Model examining psychopathy factors predicting physical aggression via HAB. Indirect effect of Meanness on Physical Aggression (β = -.001, *p* = .938). Indirect effect of Disinhibition on Physical Aggression (β = .011, *p* = .725). Indirect effect of Boldness on Physical Aggression (β = -.001, *p* = .947).
Note: **p* ≤ .05

Figure 14.
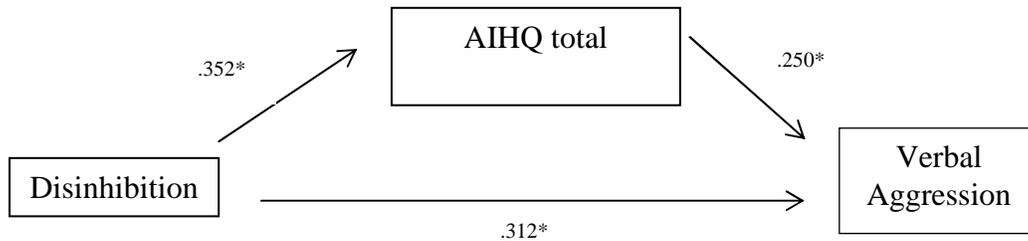
Model examining disinhibition predicting verbal aggression via HAB. Indirect effect of Disinhibition on Verbal Aggression (β = .485, *p* ≤ .05).
Note: **p* ≤ .05

Figure 15.
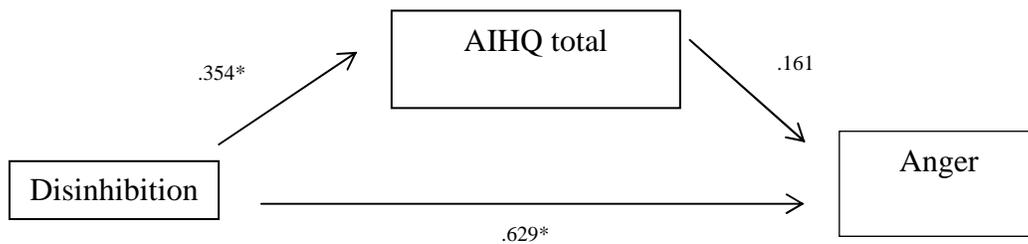
Model examining disinhibition predicting anger via HAB. Indirect effect of Disinhibition on Anger (β = .359, *p* = .191).

Figure 16.
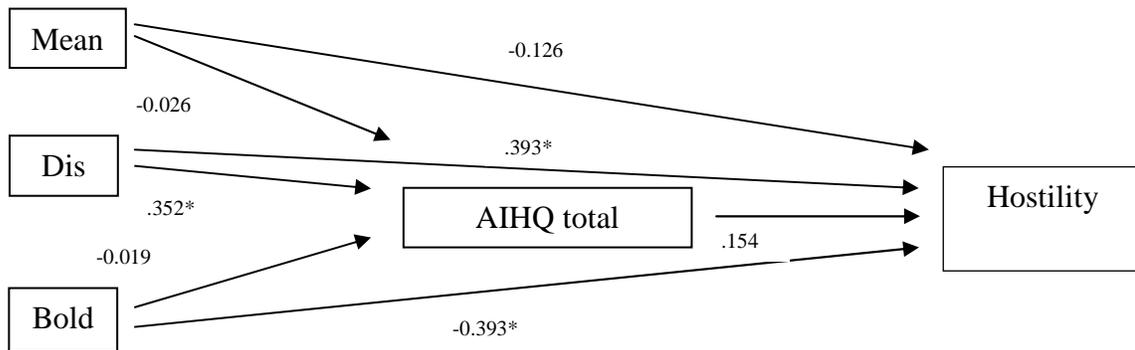
Model examining psychopathy factors predicting hostility via HAB. Indirect effect of Meanness on Hostility (β = -.034, *p* = .853). Indirect effect of Disinhibition on Hostility (β = .437, *p* = .134). Indirect effect of Boldness on Hostility (β = -.020, *p* = .862).
Note: *p ≤ .05

With respect to direct effects of psychopathy facet scores and aggression, Disinhibition

significantly predicted all aggression measures except Anger (Figure 15). Meanness was

predictive of Proactive Aggression (Figure 12) and Physical Aggression (Figure 13), and

Boldness significantly predicted Physical Aggression (Figure 12) and Hostility (Figure 16). In all

models, Disinhibition significantly predicted AIHQ Total scores, whereas Boldness and

Meanness did not. As with the previous series of path models, the AIHQ Total significantly

predicted all aggression variables except Anger (Figure 15) and Hostility (Figure 16). Indirect

effects of Disinhibition via AIHQ Total to predict the aggression variables were only significant

for the models containing Hot Sauce (Figure 3) and Verbal Aggression (Figure 14). For models

where Disinhibition was the only significant factor among the psychopathy facets, the other two

factors were pruned from the model, and I reanalyzed the models with only Disinhibition as the predictor variable to capitalize on statistical power (see Figures 10, 11, 14, 15).

CHAPTER 4

DISCUSSION

The aim of the current study was to examine the direct and indirect effects of psychopathy on hostile attribution bias to predict aggression. There is longstanding evidence that global psychopathy and its facets are related to a variety of aggressive acts including violent criminality (Patrick & Zempolich, 1998). The current study confirmed that psychopathy, particularly the disinhibition facet, predicted nearly every type of aggression assessed. This finding confirms the enduring connection between psychopathy and aggression, but it begs further examination of subtypes for both constructs and a search for mechanisms of this effect.

The first hypothesis of the study was that psychopathy and reactive aggression would be positively correlated (Falkenbach et al., 2008). Total psychopathy as well as the meanness and disinhibition factors were significantly positively correlated with reactive aggression. Furthermore, when path analyses were examined, global psychopathy was significantly associated with the self-report measure of reactive aggression (i.e. RPQ Reactive Aggression), but not the behavioral Hot Sauce measure. Additionally, global psychopathy was significantly associated with all other measures of aggression, except Anger. When the facets of psychopathy

were considered simultaneously in path analyses, disinhibition predicted both measures of reactive aggression.

Although not explicitly included in the hypotheses, all three psychopathy facets were correlated with Physical Aggression, which is a pure measure of behavioral aggression. One important component of psychopathy encapsulated by disinhibition is externalizing behaviors and impulsivity that may include physically acting out (Patrick, Fowles, & Krueger, 2009). The boldness factor, on the other hand, is often conceptualized as an indicator of social dominance/assertiveness. People high on boldness may engage in physical aggression because of a reduced fear of consequences and to show their high self-assurance; such aggression is likely to be more instrumental in nature. Meanness is conceptually linked to behavioral aggression as people high on this factor often use active confrontation to express their cruelty and overtly exploit others. The finding that all three facets of psychopathy were related to behavioral aggression confirms that different psychopathic traits can lead to aggressive behavior, likely with different underlying causes.

The second hypothesis was that there would be positive correlations between HAB and psychopathy and between HAB and reactive aggression (Dodge & Coie, 1987). As predicted, HAB and psychopathy (global psychopathy, and the disinhibition facet specifically) were moderately correlated. These results suggest that people who are high on psychopathy, particularly the disinhibited facet, are more likely to attribute others' actions in ambiguous situations to hostility towards themselves. HAB was also moderately correlated with both measures of reactive aggression, indicating that those who over-attribute hostile intent in ambiguous situations are more likely to react aggressively. Furthermore, HAB was significantly correlated with all forms of aggression, meaning that they may respond to perceived hostility

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either proactively or reactively using a variety of types of aggression (i.e. physical, verbal, anger, hostility). Other studies have shown links between attributional style and violent behavior (physical aggression or threats with a weapon; McNiel, Eisner, & Binder, 2003) and physical or relational aggression (Bailey & Ostrov, 2008). These studies in combination show further evidence for social-cognitive mechanisms producing higher levels of aggression in various forms.

The third hypothesis was that HAB would partially mediate the relationship between psychopathy and reactive aggression, but not proactive aggression. Indirect effects showed that HAB partially mediated the relationship between Psychopathy Total and Reactive Aggression, confirming the hypothesis. Moreover, results showed that this model with Hot Sauce as the measure of aggression was fully mediated, exceeding expectations. Additionally, HAB mediated the connection between Psychopathy Total and Verbal Aggression (partially), Anger (fully), and Hostility (partially); and between Disinhibition and Hot Sauce (partially) and, Verbal Aggression (partially). Because most of these models were partially mediated by HAB, there are likely other mechanisms that might explain the association between psychopathy and reactive aggression beyond HAB. The influence of intelligence, SES, and race as potential moderators of the relationship between HAB and aggression have been ruled out in conduct disordered adolescent boys (Dodge et al., 1990). Vitale and colleagues (2005) proposed that negative affectivity contributed to hostile attributions, and other character traits such as anger, paranoia, and emotionality should be explored.

Furthermore, although associations between Psychopathy Total, HAB, and Proactive Aggression showed significant direct effects between one another, the overall mediation model was not significant, confirming the second part of my third hypothesis. However, HAB should

not have been associated with Proactive Aggression at all, as those individuals showing proactive aggression tend to seek out conflict and potential victims for instrumental purposes rather than be sensitive to perceived hostility from others. Poor construct validity of the RPQ Proactive scale may be one potential explanation for these unexpected results (see further discussion of this issue later), but Dodge and colleagues (1990) also found that (using different measures), contrary to their hypotheses, proactive aggression was significantly correlated with HAB. Therefore, another potential explanation could be that when a person misinterprets social cues, they will engage in an aggressive act of any kind, including instrumental aggression, to assert themselves against the person they perceived as being hostile. A third possible explanation that has been proposed is that the dichotomous conceptualization of reactive vs. proactive aggression is too simplistic and that a mixed model of aggression may be more accurate (Bushman & Anderson, 2001). On the contrary, this dismissal of the reactive-proactive aggression model has been refuted by arguments for purer measures of these functional types of aggression that are not contaminated by forms of aggression (see Little, Jones, Henrich, & Hawley, 2003; Vitaro, Brendgen, & Barker, 2006). Overall, the unpredicted association between HAB and Proactive Aggression may be the result of poor discriminant validity, or the distinction between reactive and proactive aggression may be confounded, and future research needs to further clarify this issue.

My fourth hypothesis was that psychopathy subscales indexing "social deviance" traits (i.e., disinhibition) would be more strongly correlated with reactive aggression than "affective-interpersonal" traits (i.e., meanness and boldness). Within the three-factor framework, disinhibition most strongly encapsulates the antisocial and impulsive traits of most social deviance measurement factors (Patrick, Fowles, & Krueger, 2009). There has been a long history of empirical support for prefrontal cortex deficits leading to inability to modulate and inhibit

aggression (Raine et al, 1998), and those high on psychopathy tend to show reduced prefrontal gray matter which may lead to dysregulated behavior (Yang et al., 2005; Yang et al., 2009). Additionally, some subcortical brain regions show evidence of the generation of aggressive feelings and behaviors in people high on antisocial or psychopathic traits. Reduction in right prefrontal cortex volume, specifically the orbitofrontal cortex and anterior cingulate cortex, is indicative of impaired decision-making and impairment in emotional processing, whereas reduction in the left dorsolateral prefrontal cortex was associated with impulsivity and poor behavioral control (Yang & Raine, 2009). The lack of impulse control due to an underactive prefrontal cortex may lead to the reactive aggression seen in people high on psychopathy. This theoretical basis helps to explain why disinhibition was the only factor in the current study positively associated with measures of reactive aggression.

My final hypothesis was that proactive aggression would be better accounted for by "affective-interpersonal" psychopathy traits than by "social deviance" traits (Cima & Raine, 2009). The Boldness measurement factor is comprised of the PPI Fearless Dominance and TriPM Boldness factors in the current study. Therefore, the "fearless genotype" described by Patrick, Fowles, and Krueger (2009) may be expressed through boldness in the form of proactive aggression. A stronger representation of affective-interpersonal psychopathy traits is (at least from the PCL-R perspective of psychopathy) meanness, which encapsulates manipulation, callousness, and a lack of empathy. Furthermore, meanness is conceptually linked to exploitativeness and empowerment through cruelty, and it therefore makes sense that it is uniquely associated with proactive aggression (Patrick, Fowles, Krueger, 2009). The hypothesis that meanness would predict proactive aggression was partly confirmed as meanness and, unexpectedly, disinhibition were the significant predictors of proactive aggression, but boldness

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was not. Disinhibition is most strongly linked (both conceptually and empirically) to PCL-R

Factor 2 (social deviance) which, as has been shown in the current study and in the literature, is

most often associated with reactive aggression measures (Falkenbach et al., 2008). As alluded to

previously, there may be an issue with the construct validity of the RPQ Proactive scale.

Theoretically, there should not be an association between disinhibition and proactive aggression,

but the significant correlation in the current study may be explained by the significant correlation

between reactive and proactive aggression. The overlap in constructs may be obstructing a pure

measurement of proactive aggression. Furthermore, there was equal strength in the correlations

between both Reactive Aggression and Proactive Aggression with Hot Sauce, which is an

uncontaminated measure of reactive aggression and supports the continued call to question the

validity of the RPQ Proactive scale. Thus, future research should try to identify a better scale of

proactive aggression with better discriminant validity than the RPQ.

In general, the current study is consistent with the child and adolescent literature

indicating that social-information processing is associated with reactive more so than proactive

aggression, though the proactive scale in the current study was related to psychopathy and HAB

more so than expected (Dodge & Coie, 1987). It is important to note, however, that aggression

and psychopathy may not be distinct concepts as aggression can be conceptually definitional of

psychopathy. Because of this conceptual overlap, associations between the two constructs may

be artificially inflated. Nevertheless, the current study confirms the links among psychopathy,

HAB, and reactive aggression and extends these findings to a three-factor structure of

psychopathy. Furthermore, it clarifies the conflicting results in the adult literature surrounding

the ability of psychopathy versus HAB to predict aggression (Epps & Kendall, 1995; Serin,

1991; Vitale, et al., 2005; Miller & Lynam, 2003). The current study achieved clarity in the

examination of these three variables by using thorough measures of each and innovation in its assessment via behavioral manipulation in addition to self-report measures.

This study has significant theoretical implications for understanding and treating psychopathy. Aggression has long been associated with psychopathy, but the current study provides more knowledge of the subtypes of both constructs and how they inter-relate. Specifically, this study elucidated the importance of disinhibition over other psychopathy facets in relation to a variety of aggression modalities. Interpersonal violence is one of the most significant concerns with people high on psychopathy and finding the mechanisms of this behavior is likely to be most effective in decreasing it. By understanding the information-processing of social cues by individuals high on psychopathic traits, we can better structure interventions that intercept these maladaptive thought processes. For example, therapeutic approaches such as Cognitive Behavioral Therapy (CBT) that directly address maladaptive thought processes may be used to reduce the influence of psychopathic personality on aggressive behavior. If hypersensitivity to ambiguous social cues can be addressed, then the behavioral response should be less reactive. In a study investigating use of CBT treatment with men who had Antisocial Personality Disorder,[2] a disorder similar to psychopathy, showed more positive beliefs about others and improved social functioning compared to individuals in the treatment as usual condition (Davidson, et al., 2009). Additionally, offenders who are identified as being high on disinhibition could be targeted for such an intervention. HAB is an important cognitive precursor to aggression that may show potential for intervention.

Several limitations of this study must be considered. Perhaps most importantly, the final sample size was nearly half of our initial goal for optimal statistical power. This sample size was

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[2] Psychopathy is considered inclusive of most Antisocial Personality Disorder (APD) criteria dictated in the DSM-IV, but not all cases of APD meet full criteria for psychopathy. Furthermore, APD correlates most strongly with the social deviance, or "disinhibition," factor of psychopathy (Hart & Hare, 1989).

due to the nearly 60% attrition rate between Phase 1 and Phase 2, and time constraints prohibited further data collection. Because of our limited base sample size, I was unable to use exclusions based upon answers to the Post Study Interview that may have removed participants who had prior knowledge or did not believe these deception techniques; this could have introduced measurement error in the Hot Sauce variable and potentially attenuated effect size estimates for analyses involving this variable. Another limitation was having only one measure of HAB due to the poor performance of the IPSAQ. The IPSAQ and AIHQ have shown significant intercorrelations in previous studies (e.g., Combs et al., 2009), but inexplicably the IPSAQ did not appear to be representative of the HAB construct in the present study. Finally, although the hot sauce paradigm was a significant strength by adding a laboratory measure of aggression, this study primarily relied on self-report measures which may lead to inflated correlations due to shared method variance (Lilienfeld & Fowler, 2006).

Future studies should examine possible moderators (i.e., gender, spicy taste preference, etc.) of the parameters among psychopathy, HAB, and aggression that may provide additional insight into these personality, cognitive, and behavioral mechanisms. Other factors such as ratings of the confederate's essay, believability ratings, salience of provocation, and mood at the time of the study should also be examined. Because of unexpected relationships with the Proactive Aggression scale, future research should consider a more thorough evaluation of these hypotheses using a measure of proactive aggression that is a purer assessment of the construct. Further extensions of this study should include treatment applications, particularly cognitive behavioral therapy, to address the hostile cognitive bias. Treatment modalities for psychopathy are lacking, so methods for targeting specific mechanisms of maladaptive thought processes, particularly those that lead to aggression, have potential to facilitate intervention.

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Levenson Self-Report Psychopathy Scale

LSRP

Instructions: *Please respond to each item as honestly as you can. There are no right or wrong answers, and your answer will be completely anonymous. Using the scale below, place your response in the space provided next to each item below.*

Disagree strongly	Disagree somewhat	Agree somewhat	Agree strongly
1	2	3	4

_____ 1. Success is based on survival of the fittest; I am not concerned about the losers.
_____ 2. For me, what's right is whatever I can get away with.
_____ 3. In today's world, I feel justified in doing anything I can get away with to succeed.
_____ 4. My main purpose in life is getting as many goodies as I can.
_____ 5. Making a lot of money is my most important goal.
_____ 6. I let others worry about higher values; my main concern is with the bottom line.
_____ 7. People who are stupid enough to get ripped off usually deserve it.
_____ 8. Looking out for myself is my top priority.
_____ 9. I tell other people what they want to hear so that they will do what I want them to do.
_____ 10. I would be upset if my success came at someone else's expense.
_____ 11. I often admire a really clever scam.
_____ 12. I make a point of trying not to hurt others in pursuit of my goals.
_____ 13. I enjoy manipulating other people's feelings.
_____ 14. I feel bad if my words or actions cause someone else to feel emotional pain.
_____ 15. Even if I were trying very hard to sell something, I wouldn't lie about it.
_____ 16. Cheating is not justified because it is unfair to others.
_____ 17. I find myself in the same kinds of trouble, time after time.
_____ 18. I am often bored.
_____ 19. I find that I am able to pursue one goal for a long time.
_____ 20. I don't plan anything very far in advance.
_____ 21. I quickly lose interest in tasks I start.
_____ 22. Most of my problems are due to the fact that other people just don't understand me.
_____ 23. Before I do anything, I carefully consider the possible consequences.
_____ 24. I have been in a lot of shouting matches with other people.
_____ 25. When I get frustrated, I often 'let off steam' by blowing my top.
_____ 26. Love is overrated.

Triarchic Psychopathy Measure

Directions: This questionnaire contains statements that different people might use to describe themselves. Most of these statements are followed by four choices: 4, 3, 2, 1. The meaning of these four different choices is given below:

4= True   3= mostly true   2= mostly false   1= False

For each statement, fill in the bubble next to the choice that describes you best. There are no right or wrong answers; just choose the answer that best describes you.

Remember: Fill only one bubble per item. Answer all of the items. Please work rapidly and do not spend too much time on any one statement.

1.	I'm optimistic more often than not.	4	3	2	1
2.	How other people feel is important to me.	4	3	2	1
3.	I often act on immediate needs.	4	3	2	1
4.	I have no strong desire to parachute out of an airplane.	4	3	2	1
5.	I've often missed things I promised to attend.	4	3	2	1
6.	I would enjoy being in a high-speed chase.	4	3	2	1
7.	I am well-equipped to deal with stress.	4	3	2	1
8.	I don't mind if someone I dislike gets hurt.	4	3	2	1
9.	My impulsive decisions have caused problems with loved ones.	4	3	2	1
10.	I get scared easily.	4	3	2	1
11.	I sympathize with others' problems.	4	3	2	1
12.	I have missed work without bothering to call in.	4	3	2	1
13.	I'm a born leader.	4	3	2	1
14.	I enjoy a good physical fight.	4	3	2	1
15.	I jump into things without thinking.	4	3	2	1
16.	I have a hard time making things turn out the way I want.	4	3	2	1

17.	I return insults.	4	3	2	1
18.	I've gotten in trouble because I missed too much school.	4	3	2	1
19.	I have a knack for influencing people.	4	3	2	1
20.	It doesn't bother me to see someone else in pain.	4	3	2	1
21.	I have good control over myself.	4	3	2	1
22.	I function well in new situations, even when unprepared.	4	3	2	1
23.	I enjoy pushing people around sometimes.	4	3	2	1
24.	I have taken money from someone's purse or wallet without asking.	4	3	2	1
25.	I don't think of myself as talented.	4	3	2	1
26.	I taunt people just to stir things up.	4	3	2	1
27.	People often abuse my trust.	4	3	2	1
28.	I'm afraid of far fewer things than most people.	4	3	2	1
29.	I don't see any point in worrying if what I do hurts someone else.	4	3	2	1
30.	I keep appointments I make.	4	3	2	1
31.	I often get bored quickly and lose interest.	4	3	2	1
32.	I can get over things that would traumatize others.	4	3	2	1
33.	I am sensitive to the feelings of others.	4	3	2	1
34.	I have conned people to get money from them.	4	3	2	1
35.	It worries me to go into an unfamiliar situation without knowing all the details.	4	3	2	1
36.	I don't have much sympathy for people.	4	3	2	1
37.	I get in trouble for not considering the consequences of my actions.	4	3	2	1
38.	I can convince people to do what I want.	4	3	2	1
39.	For me, honesty really is the best policy.	4	3	2	1
40.	I've injured people to see them in pain.	4	3	2	1
41.	I don't like to take the lead in groups.	4	3	2	1
42.	I sometimes insult people on purpose to get a reaction from them.	4	3	2	1
43.	I have taken items from a store without paying for them.	4	3	2	1

44.	It's easy to embarrass me.	4	3	2	1
45.	Things are more fun if a little danger is involved.	4	3	2	1
46.	I have a hard time waiting patiently for things I want.	4	3	2	1
47.	I stay away from physical danger as much as I can.	4	3	2	1
48.	I don't care much if what I do hurts others.	4	3	2	1
49.	I have lost a friend because of irresponsible things I've done.	4	3	2	1
50.	I don't stack up well against most others.	4	3	2	1
51.	Others have told me they are concerned about my lack of self-control.	4	3	2	1
52.	It's easy for me to relate to other people's emotions.	4	3	2	1
53.	I have robbed someone.	4	3	2	1
54.	I never worry about making a fool of myself with others.	4	3	2	1
55.	It doesn't bother me when people around me are hurting.	4	3	2	1
56.	I have had problems at work because I was irresponsible.	4	3	2	1
57.	I'm not very good at influencing people.	4	3	2	1
58.	I have stolen something out of a vehicle.	4	3	2	1

Appendix C

Aggression Questionnaire

1. Once in a while I can't control the urge to strike another person.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

2. I tell my friends openly when I disagree with them.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

3. I flare up quickly but get over it quickly.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

4. Given enough provocation, I may hit another person.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

5. I am sometimes eaten up with jealousy.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

6. When frustrated, I let my irritation show.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

7. I often find myself disagreeing with people.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

8. I get into fights a little more than the average person.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

9. It times I feel I have gotten a raw deal out of life.
   Most characteristic   Least characteristic
   5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

10. If I have to resort to violence to protect my rights, I will.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

11. When people annoy me, I may tell them what I think of them.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

12. I sometimes feel like a powder keg ready to explode.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

13. There are people who pushed me so far that we came to blows.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

14. I am an even-tempered person.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

15. Other people always seem to get the breaks.
    Most characteristic   Least characteristic
    5 ------------------ 4 ------------------ 3 ------------------ 2 ------------------ 1

16. I can think of no reason for ever hitting a person.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

17. I wonder why sometimes I feel so bitter about things.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

18. I know that "friends" talk about me behind my back.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

19. Some of my friends think I'm a hothead.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

20. I have threatened people I know.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

21. I can't help getting into arguments when people disagree with me.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

22. Sometimes I fly off the handle for no good reason.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

23. I am suspicious of overly friendly strangers.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

24. I have become so mad that I have broken things.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

25. I have trouble controlling my temper.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

26. I sometimes feel that people are laughing at me behind my back.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

27. If somebody hits me, I hit back.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

28. My friends say that I'm somewhat argumentative.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

29. When people are especially nice, I wonder what they want.
Most characteristic   Least characteristic
5 ------------------- 4 ------------------- 3 ------------------- 2 ------------------- 1

Reactive Proactive Aggression Questionnaire
There are times when most of us feel angry, or have done things we should not have done.
Rate each of the items below by putting a circle around 0 (never), 1 (sometimes), or 2 (often).
Do not spend a lot of time thinking about the items—just give your first response. Make sure you
answer all the items (see below).

How often have you…
1. Yelled at others when they have annoyed you   0 1 2
2. Had fights with others to show who was on top   0 1 2
3. Reacted angrily when provoked by others   0 1 2
4. Taken things from other students   0 1 2
5. Gotten angry when frustrated   0 1 2
6. Vandalized something for fun   0 1 2
7. Had temper tantrums   0 1 2
8. Damaged things because you felt mad   0 1 2
9. Had a gang fight to be cool   0 1 2
10. Hurt others to win a game   0 1 2
11. Become angry or mad when you don't get your way   0 1 2
12. Used physical force to get others to do what you want   0 1 2
13. Gotten angry or mad when you lost a game   0 1 2
14. Gotten angry when others threatened you   0 1 2
15. Used force to obtain money or things from others   0 1 2
16. Felt better after hitting or yelling at someone   0 1 2
17. Threatened and bullied someone   0 1 2
18. Made obscene phone calls for fun   0 1 2
19. Hit others to defend yourself   0 1 2
20. Gotten others to gang up on someone else   0 1 2
21. Carried a weapon to use in a fight   0 1 2
22. Gotten angry or mad or hit others when teased   0 1 2
23. Yelled at others so they would do things for you   0 1 2

Internal, Personal, and Situational Attributes Questionnaire

Please read the statements on the following pages. For each statement please try to vividly imagine that event happening to you. Then try to decide what was the main cause of the event described in each statement. Please write the cause you have thought of in the space provided. Then tick the appropriate letter (a,b or c) according to whether the cause is :

    a) Something about you
    b) Something about another person (or a group of people)
    c) Something about the situation (circumstances or chance)

It might be quite difficult to decide which of these options is exactly right. In this case, please pick **one option**, the option which **best** represents your opinion. Please pick **only one** letter in each case.

Thank you for your time and co-operation.

1.   **A friend gave you a lift home.**
        What caused your friend to give you a lift home?
        (Please write down the one major cause)
        Is this :
        a.   Something about you ?
        b.   Something about the other person or other people ?
        c.   Something about the situation (circumstances or chance) ?

2.   **A friend talked about you behind your back.**
        What caused your friend to talk about you behind your back?
        (Please write down the one major cause)
        Is this :
        a.   Something about you ?
        b.   Something about the other person or other people ?
        c.   Something about the situation (circumstances or chance) ?

3.   **A friend said that he(she) has no respect for you.**
        What caused your friend to say that he(she) has no respect for you ?
        (Please write down the one major cause)
        Is this :
        a.   Something about you ?
        b.   Something about the other person or other people ?
        c.   Something about the situation (circumstances or chance) ?

4.   **A friend helped you with the gardening.**
        What caused your friend to help you with the gardening?
        (Please write down the one major cause)
        Is this :
        a.   Something about you ?

b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

5. **A friend thinks you are trustworthy.**
What caused your friend to think you are trustworthy?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

6. **A friend refused to talk to you.**
What caused your friend to refuse to talk to you?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

7. **A friend thinks you are interesting.**
What caused your friend to think you are interesting?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

8. **A friend sent you a postcard.**
What caused your friend to send you a postcard?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

9. **A friend thinks you are unfriendly.**
What caused your friend to think that you are unfriendly?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

10. **A friend made an insulting remark to you.**
What caused your friend to insult you?
(Please write down the one major cause)

Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

11.   **A friend bought you a present.**
What caused your friend to buy you a present .
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

12.   **A friend picked a fight with you.**
What caused your friend to fight with you?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

13.   **A friend thinks you are dishonest.**
What caused your friend to think you are dishonest?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

14.   **A friend spent some time talking to you.**
What caused your friend to spend time talking with you?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

15.   **A friend thinks you are clever.**
What caused your friend to think you are clever?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

16.   **A friend refused to help you with a job.**

What caused your friend to refuse to help you with the job?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

**17.	A friend thinks you are sensible.**
What caused your friend to think that you were sensible?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

**18.	A friend thinks you are unfair.**
What caused your friend to think that you are unfair?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

**19.	A friend said that he(she) dislikes you.**
What caused your friend to say that he(she) dislikes you?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

**20.	A friend rang to enquire about you.**
What caused your friend to ring to enquire about you?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

**21.	A friend ignored you**
What caused your friend to ignore you?
(Please write down the one major cause)
Is this :
a.	Something about you ?
b.	Something about the other person or other people ?
c.	Something about the situation (circumstances or chance) ?

22. **A friend said that she(he) admires you.**
What caused your friend to say that she(he) admired you?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

23. **A friend said that he (she) finds you boring.**
What caused your friend to say that he(she) finds you boring?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

24. **A friend said that she (he) resents you.**
What caused your friend to say that she(he) resents you?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

25. **A friend visited you for a friendly chat.**
What caused your friend to visit you for a chat?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

26. **A friend believes that you are honest**
What caused your friend to believe that you are honest?
(Please write down the one major cause)
Is this :
a. Something about you ?
b. Something about the other person or other people ?
c. Something about the situation (circumstances or chance) ?

27. **A friend betrayed the trust you had in her.**
What caused your friend to betray your trust?
(Please write down the one major cause)
Is this :

a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

28.   A friend ordered you to leave.
What caused your friend to order you to leave?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

29.   A friend said that she (he) respects you.
What caused your friend to say that she(he) respects you?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

30.   A friend thinks you are stupid.
What caused your friend to think that you are stupid?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

31.   A friend said that he(she) liked you.
What caused your friend to say that he(she) liked you?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

32.   A neighbor invited you in for a drink.
What caused your friend to invite you in for a drink?
(Please write down the one major cause)
Is this :
a.   Something about you ?
b.   Something about the other person or other people ?
c.   Something about the situation (circumstances or chance) ?

Ambiguous Intentions Hostility Questionnaire

PLEASE READ EACH OF THE SITUATIONS LISTED BELOW AND IMAGINE THE SITUATION HAPPENING TO YOU. FOR EACH SITUATION, WRITE DOWN A BRIEF REASON FOR IT. THEN, RATE WHETHER YOU THINK THE PERSON ACTED THAT WAY TOWARD YOU ON PURPOSE. YOU WILL THEN BE ASKED TO RATE HOW ANGRY THAT SITUATION MAKES YOU FEEL AND HOW MUCH YOU BLAME THE OTHER PERSON. FINALLY, PLEASE WRITE DOWN WHAT YOU WOULD DO ABOUT THAT SITUATION. A RESPONSE OF "I DON'T KNOW" IS NOT ACCEPTABLE. YOU NEED TO DESCRIBE SOME TYPE OF BEHAVIORAL RESPONSE.

1. Someone jumps in front of you on the grocery line and says, "I'm in a rush."
A. What do you think was the real reason why someone jumped in line in front of you?
_____
B. Did that person jump in front of you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame that person for jumping in front of you on line?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?
_____
2. A friend of yours slips on the ice, knocking you onto the ground.
A. What do you think was the real reason why your friend knocked you to the ground?
_____
B. Do you think your friend knocked you onto the ground on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame your friend for knocking you onto the ground?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?
_____
3. You've been at a new job for three weeks. One day, you see one of your new co-workers on the
street. You start to walk up to this person and start to say hello, but she/he passes by you without
saying hello.

A. What do you think was the real reason why your coworker passed by you without saying hello?

_____

B. Do you think your co-worker did this to you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the co-worker for passing by you?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

4, While walking outside during the rain, a car swerves to avoid hitting a cat, and drives into a puddle,
splashing water onto you.

A. What do you think was the real reason why the car splashed water onto you?

_____

B. Do you think the driver of the car splashed water onto you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the person in the car for splashing water onto you?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

5. You have an appointment with an important person. When you arrive at your appointment, the
secretary informs you that the person is not in; they took the day off.

A. What do you think was the real reason why the person didn't keep your appointment?

_____

B. Do you think the person did this to you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the person for not keeping your appointment?

1	2	3	4	5

Not at   Very
All   Much

E. What would you do about it?

_____

6. You are on a bus sitting in an aisle seat. A person gets on the bus at the next stop, begins walking
as the bus moves, and steps on your foot.

A. What do you think was the real reason why the person stepped on your foot?

_____

B. Do you think the person did this to you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5

Not at   Very
all Angry   Angry

D. How much would you blame the person for stepping on your foot?

1	2	3	4	5

Not at   Very
All   Much

E. What would you do about it?

_____

7. Your neighbors are playing loud music. You knock on the door and ask them to turn it down. Fifteen
minutes later, the music is loud again.

A. What do you think was the real reason why your neighbors made the music loud again?

_____

B. Do you think your neighbors raised the music on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5

Not at   Very
all Angry   Angry

D. How much would you blame them for raising the music again?

1	2	3	4	5

Not at   Very
All   Much

E. What would you do about it?

_____

8. You walk past a bunch of teenagers at a mall and your hear them start to laugh.

A. What do think was the real reason why the teenagers started to laugh after you walked past them?

_____

B. Do you think the teenagers did this to you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the teenagers for laughing as you walked past them?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

9. While driving, the person in the car behind you honks their horn and then cuts you off.

A. What do you think was the real reason why the person cut you off while driving?

_____

B. Do you think the person cut you off on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the driver of the car for cutting you off on the road?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

10. You are supposed to meet a new friend for lunch at a restaurant but she/he never shows up.

A. What do you think was the real reason why your new friend didn't show up at the restaurant?

_____

B. Do you think your new friend did this to you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame your new friend for not showing up at the restaurant?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

11. You've been looking for a parking spot for awhile, when you see one up ahead. You put your signal
on, proceed toward the spot, but someone passes your car and takes the parking space.

A. What do you think was the real reason why the person in the other car took your parking space?

_____

B. Do you think the person in the other car took your parking space on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the person in the other car for taking your parking space?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

12. You're dancing at a club and someone bumps into you from behind.
A. What do you think was the real reason why the person in the club bumped into you from behind?

_____

B. Do you think the person bumped into you on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame the person for bumping into you at the club?

1	2	3	4	5
Not at				Very
All				Much

E. What would you do about it?

_____

13. You call a friend and leave a message on their answering machine, asking them to call you back.
One week passes and they have not called you back.
A. What do you think was the real reason why your friend didn't call you back?

_____

B. Do you think your friend didn't call you back on purpose?

1	2	3	4	5	6
Definitely	Probably	Maybe	Maybe	Probably	Definitely
No	No	No	Yes	Yes	Yes

C. How angry would this make you feel?

1	2	3	4	5
Not at				Very
all Angry				Angry

D. How much would you blame your friend for not calling you back?

1	2	3	4	5

Not at   Very
All   Much
E. What would you do about it?
_____
14. You're at a bar watching a football game and having a drink. Suddenly, the home team scores,
people begin to cheer, and someone hits your arm, spilling the drink onto your clothes.
A. What do you think was the real reason why the other person hit your arm?

_____
B. Did the other person hit your arm on purpose?
      1   2   3   4   5   6
Definitely   Probably   Maybe   Maybe   Probably   Definitely
    No   No   No   Yes   Yes   Yes
C. How angry would this make you feel?
      1   2   3   4   5
Not at   Very
all Angry   Angry
D. How much would you blame the other person for hitting your arm?
      1   2   3   4   5
Not at   Very
All   Much
E. What would you do about it?
_____
15. A day before meeting someone for a date, she/he calls to cancel. This is the third straight time
they've done that.
A. What do you think was the real reason why the other person cancelled the date with you?
_____
B. Did the other person cancel the date on purpose?
      1   2   3   4   5   6
Definitely   Probably   Maybe   Maybe   Probably   Definitely
    No   No   No   Yes   Yes   Yes
C. How angry would this make you feel?
      1   2   3   4   5
Not at   Very
all Angry   Angry
D. How much would you blame the other person for canceling the date?
      1   2   3   4   5
Not at   Very
All   Much
E. What would you do about it?
_____

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Positive Affect Negative Affect Scale

Listed below are a number of words that describe different feelings and emotions. Read each item and mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way **right now**. Use the following scale to record your answers.

1	2	3	4	5
Very slightly or not at all	A little	Moderately	Quite a bit	Extremely

____1. interested   ____11. irritable

____2. distressed   ____12. alert

____3. excited   ____13. interested

____4. upset   ____14. inspired

____5. strong   ____15. nervous

____6.guilty   ____16. determined

____7. scared   ____17. attentive

____8. hostile   ____18. jittery

____9. enthusiastic   ____19. active

____10.proud   ____20. afraid

Appendix H

<div align="center">

Taste Preferences Inventory

</div>

Please rate these flavors 1-18 (with 1 being your favorite and 18 being your least favorite) according to your personal preference.

___Salty
___Bitter
___Sour
___Sweet
___Tart
___Nutty
___Spicy
___Fresh/crisp
___Fruity
___Creamy/rich
___Pickled
___Meaty
___Fishy
___Alcohol/fermented
___Fried
___Smokey
___Herbed
___Bland

Appendix I

<div align="center">

Post-Study Interview

</div>

1) How hot would you rate the hot sauce?

    a. Extremely hot   b. Hot   c. Mild   d. Not spicy

2) Did you like the hot sauce?

    a. Yes   b. No

3) Did you believe that the other participant had to eat the hot sauce?

    a. Yes   b. No

4) Did you think that the hot sauce would cause the other participant discomfort?

    a. Yes   b. No

5) How did you feel about giving the other person hot sauce that they didn't like?

6) What did you think of the other participant?

    a. Why do you think they rated your essay that they did?

7) Did you have any questions about anything? Did everything make sense to you?

8) What was the purpose of the experiment?

9) Had you heard anything about this experiment prior to participating? If yes, then what?

10) Did it ever occur to you that there was more to this experiment than meets the eye? Something we didn't tell you about? If yes, what?

(*Follow up questions to number 11*)

    a. What made you think that?

    b. When did this occur to you?

    c. How did this affect your responses?

Appendix J

<center>**Participant Information Sheet**</center>

You are being invited to take part in a research study called "Personality and Taste Preferences." The study is being done by Becca Kastner, a doctoral student in the Department of Psychology, and Dr. Martin Sellbom, an assistant professor in the Department of Psychology. The purpose of this study is to find out if participants with certain personality characteristics will respond in different ways on a series of questionnaires. You will also be asked to rate your taste preferences and then either taste some foods or give foods to others to taste. The knowledge gained from this study will help researchers identify differences in taste preferences for individuals with different personality characteristics.

You have been invited to be in this study because you are an undergraduate student enrolled in PY 101. Approximately 250 other PY 101 students will participate in this study. If you decide to be in this study, you will be asked to complete a series of questionnaires online and in the lab. There is no cost to you for participating in this study, except for your time in completing the questionnaires online (approximately 1 hour) and completing questionnaires and working with a partner in the lab (approximately 1.5 hours). You will receive three (3) hours of research credit for PY 101, and you will learn some general information about the research process and psychological assessment. Please note, you will receive 1 hour of research credit for completing the online questionnaires and will receive the remaining 2 hours of credit only after completion of the activities in the lab.

Participation is unlikely to, but may, cause some psychological distress. If distress remains at the end of your participation, we will discuss your concerns and refer you to the Psychology Clinic, if necessary. Your name is the only identifying information we will be collected from you, and after the completion of the in-lab session we will not be able to trace the results of your questionnaires back to you. We will not collect CWIDs, and the University will not be able to use your test results for any evaluative purposes. All data collected during this study will be kept confidential and protected by the primary investigator. If you do not wish to participate in this study, you may choose not to participate. You may participate in another research study or complete an alternate assignment (see your professor) to complete research participation requirements for PY101. If you start the study, you can stop at any time.

If you have questions about the study right now, please email the primary investigator, Becca Kastner, at rmkastner@crimson.ua.edu or call Dr. Martin Sellbom at (205)-348-9936. If you have any questions about your rights as a research participant you may contact the Office of Research Compliance at (205) 348-8461 or 1-(877)-820-3066. If you have psychological concerns as a result of your participation, you may contact the Psychology Clinic at (205) 348-5000 to schedule an appointment. You can have a copy of this form to keep.

Thank you very much for your interest.

Sincerely,
Becca Kastner, B.S.

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Appendix K

<p align="center">Brief Demographic Survey</p>

1) Age *(fill in the blank)*

2) Gender

     a. Male

     b. Female

3) Ethnicity

     a. African-American

     b. Asian

     c. Caucasian

     d. Hispanic

     e. Native American

     f. Other/Mixed/Prefer not to disclose

4) Political affiliation

     a. Very Liberal

     b. Liberal

     c. Conservative

     d. Very Conservative

Appendix L

Confederate Essays

(The essays will be hand written to appear as if the confederate had just written it)

(Essay given to Liberals)
Don't even get me started. Liberals are the cause of so many problems in this country, it's not funny. Not only that, but they get in the way of decent Americans who are trying to solve all those problems that they created in the first place. The bleeding heart stance they take, of trying to help everyone is a joke and incredibly stupid. How can they help the world when they can't even help themselves?! Do Liberals put any thought into what they believe? I don't think so. If they did, they would realize that they are ruining the country. Thankfully there are people in power that agree with me who can, and will control the whiny Liberals, and put them in their place. The best place for a Liberal is out of my sight. They make me sick.

(Essay given to Conservatives)
Don't even get me started. Conservatives are the cause of so many problems in this country, it's not funny. Not only that, but they get in the way of decent Americans who are trying to solve all those problems that they created in the first place. The cold-hearted stance they take, of trying to help only themselves is a joke and incredibly stupid. They are too busy thinking of themselves, and don't care about anyone else. Do Conservatives put any thought into what they believe? I don't think so. If they did, they would realize that they are ruining the country. Thankfully there are people in power that agree with me who can, and will control the selfish Conservatives, and put them in their place. The best place for a Conservative is out of my sight. They make me sick.

Appendix M
(Critique will be filled out by hand to appear as if the confederate had just completed it)

Participant ID___20028___
Grading Sheet

Please use the following criteria to grade the other participant's essay.

Organization:
Very strong   Very poor

    7 ------------ 6 ------------ 5 ----------- 4 ----------- 3 ----------(2)---------- 1

Content:
Very strong   Very poor

    7 ------------ 6 ------------ 5 ----------- 4 ----------- 3 ----------- 2 ----------(1)

Writing style:
Very strong   Very poor

    7 ------------ 6 ----------- 5 ----------- 4 ----------(3)---------- 2 ----------- 1

Clarity of Expression:
Very strong   Very poor

    7 ------------ 6 ----------- 5 ----------- 4 ----------- 3 ----------(2)---------- 1

Thoughtfulness:
Very strong   Very poor

    7 ----------- 6 ----------- 5 ----------- 4 ----------(3)---------- 2 ----------- 1

Overall quality:
Very strong   Very poor

    7 ------------ 6 ------------ 5 ----------- 4 ----------- 3 ----------(2)---------- 1

Please provide a few comments on the other participant's essay:

I don't agree with this and I didn't like it.

Appendix N

Office for Research

Institutional Review Board for the
Protection of Human Subjects

THE UNIVERSITY OF
ALABAMA
R E S E A R C H

May 14, 2012

Rebecca Kastner
Dept. of Psychology
College of Arts & Sciences
Box 870348

Re: IRB#: 11-OR-224-R1 "Personality and Taste Preferences"

Dear Ms. Kastner:

The University of Alabama Institutional Review Board has granted approval for your renewal application.

Your application has been given expedited approval according to 45 CFR part 46. Approval has been given under expedited review category 7 as outlined below:

(7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies

Your application will expire on May 13, 2013. If your research will continue beyond this date, complete the relevant portions of the IRB Renewal Application. If you wish to modify the application, complete the Modification of an Approved Protocol Form. Changes in this study cannot be initiated without IRB approval, except when necessary to eliminate apparent immediate hazards to participants. When the study closes, complete the appropriate portions of the IRB Request for Study Closure Form.

Should you need to submit any further correspondence regarding this proposal, please include the above application number.

Good luck with your research.

Sincerely,

358 Rose Administration Building
Box 870127
Tuscaloosa, Alabama 35487-0127
(205) 348-8461
FAX (205) 348-7189
TOLL FREE (877) 820-3066

UNIVERSITY OF ALABAMA INSTITUTIONAL REVIEW BOARD FOR THE PROTECTION OF HUMAN
SUBJECTS
REQUEST FOR APPROVAL OF RESEARCH INVOLVING HUMAN SUBJECTS

I. Identifying information

	Principal Investigator	Second Investigator
Name:	Rebecca Kastner, B.S.	Martin Sellbom, Ph.D.
Department:	Psychology	Psychology
College:	Arts and Sciences	Arts and Sciences
University:	University of Alabama	University of Alabama
Address:	Box 870348, Tuscaloosa, AL	Box 870348, Tuscaloosa, AL
Telephone:	(812) 344-8824	(205) 348-9936
FAX:		(205) 348-8648
E-mail:	rmkastner@crimson.ua.edu	msellbom@ua.edu

Title of Research Project: Personality and Taste Preferences

Date Printed: Funding Source: None

Type of
Proposal: _x_New   ___Revision   ___Renewal   ___Completed   ___Exempt

Attach a
renewal
application

Attach a continuing review of studies form

Please enter the original IRB # at the top of the page

UA faculty or staff member signature: _____

II. NOTIFICATION OF IRB ACTION (to be completed by IRB):

Type of Review: _____ Full board   X Expedited

IRB Action:

___Rejected   Date:_____
___Tabled Pending Revisions   Date:_____
___Approved Pending Revisions Date:_____
X Approved—this proposal complies with University and federal regulations for the protection of human subjects.

Approval is effective until the following date: 5/13/2013

Items approved: X   Research protocol: dated
                       ___ Informed consent: dated
                       ___ Recruitment materials: dated
                       ___ Other: dated

Approval signatu   2/2012