

INTERACTIVE EFFECTS AMONG PSYCHOPATHIC TRAITS, VICTIM DISTRESS, AND
AGGRESSION IN THE LABORATORY

by

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(Under the Direction of Joshua D. Miller, Ph.D. and Amos Zeichner, Ph.D.)

ABSTRACT

Psychopathy is a personality disorder that has been frequently linked to instrumental aggression (i.e., aggression for the purpose of obtaining a specified goal). Additionally, previous findings suggest that psychopathic traits are related to limited perception of distress in others, including victim distress. This low reactivity may be the underlying mechanism between psychopathic traits and increased instrumental aggression. The purpose of the study was to examine the relationship between psychopathic traits and instrumental aggression evinced in order to dominate an ostensible co-participant. This relationship was examined as a function of victim distress. Participants received feedback on an ostensible co-participant's distress (i.e., high vs. low levels of distress) and then assigned pain for the co-participant to endure. Aggression was measured by intensity of pain (via several stimuli) that participants assigned. Overall, hypotheses from the study were largely supported. Participants generally assigned less pain to the ostensible co-participant endorsing high-distress. Additionally, high levels of psychopathic traits were frequently related to group assignment (i.e., participants high on psychopathic traits assigned similar pain amounts to the co-opponent despite level of distress while individuals lower on psychopathic traits assigned less pain to the distressed co-opponent). Exploratory

analyses revealed these findings were moderated by sex such that men were less influenced by group assignment (when high on psychopathic traits) than their female counterparts. Findings are discussed in context of relevant theoretical models of psychopathic behavior with implications drawn for future research.

INDEX WORDS: Psychopathy, Aggression, Victim Distress, Integrated Emotion Systems, Behavioral Paradigm

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CHAPTER 1

INTRODUCTION

Psychopathic Traits and Aggressive Behavior

Psychopathy is a personality disorder consisting of callousness, remorselessness, manipulateness, egocentricity, superficial charm, shallow emotionality, and arrogance (Cleckley, 1941) as well as an increased likelihood to engage in antisocial behavior.

Psychopathy is particularly relevant to the study of aggression, as it is linked to greater likelihood to engage in aggressive behaviors (Cornell et al., 1996; Falkenbach, Poythress, & Creevy, 2008; Flight & Forth, 2007; Hodges & Heilbrun, 2009; Laurell, Belfrage, & Hellström, 2010; Louise von Borries et al., 2012; Serin, 1991; Vitacco, Neumann, Caldwell, Leistico, Van Rybroek, 2006; Walsh, Swogger, & Kossen, 2009). Psychopathic traits appear to share a strong and consistent relationship with a specific type of aggression; individuals who are higher in psychopathic traits are more likely to utilize predatory, goal-oriented (i.e., instrumental, or sometimes termed proactive) aggression in addition to the more emotionally reactive aggressive behaviors seen in individuals both high and low on psychopathic traits (see Glenn & Raine, 2009 for a review). The link between psychopathic traits and instrumental aggression is consistent across samples (e.g., incarcerated samples, community samples, and mixed gender samples) and across assessment methodologies, including self-report and laboratory paradigms of aggressive behavior, with psychopathic traits often being a unique and robust predictor of instrumental aggression (Bobadilla, Wampler, & Taylor, 2012; Cima & Raine, 2009; Cornell et al., 1996; Falkenbach et al., 2008; Nouvion, Cherek, Lane, Tcheremissine, & Lieving, 2007; Porter,

Woodworth, Earle, Drugge, & Boer, 2003; Reidy, Zeichner, Miller, & Martinez, 2007; Reidy, Zeichner, & Seibert, 2011; Swogger, Walsh, Houston, Cashman-Brown, & Conner, 2010; Woodworth & Porter, 2002). Given the propensity of this evidence, the relationship between psychopathic traits and callous, goal-driven aggression appears replicable and substantial.

Mechanism of Action: Perceptions of Victim Distress

This consistent link between psychopathy and instrumental aggression is unsurprising, given that instrumental aggression, by its very nature, is less-emotional and more goal-oriented. This characteristic of instrumental aggression overlaps with the conceptualization of psychopathy as a construct comprising manipulateness and callousness (see Blair, 2007a). While this correlation between trait and behavior is well-replicated, the exact nature of the underlying causes and mechanisms remains debatable. Psychopathic traits have been linked to low empathy and deficiencies in perspective taking, which may relate to this characteristic callousness and aggressivity. Early theorists (e.g., Cruz, 1997), in an effort to explain attendant low empathy, suggested that psychopathic individuals may have cognitive deficits resulting in an inability to articulate what another person is thinking (e.g., Theory of Mind). However, findings have failed to find a relationship (either positive or negative) between Theory of Mind and psychopathic traits (e.g., Blair et al., 1996; Richell et al., 2003) and suggest that psychopathic traits are more closely linked to deficits in affective (as opposed to cognitive) empathy (i.e., being unable to perceive others' distress or failing to experience distress when others are distressed; see Blair, 2005; Blair 2008).

The connection between affective empathy and psychopathic traits is well supported by recent laboratory findings. In tasks that required participants to identify emotions displayed in pictures of faces, psychopathic individuals demonstrated higher errors and increased latencies when

identifying fearful and, at times, sad faces compared to other emotions (Blair et al. 2004; Blair, Colledge, Murray, & Mitchell, 2001; Dadds et al., 2006; Dolan & Fullam, 2006; Montagne et al., 2005; Moore, 2004). These findings suggest that psychopathic traits are related to specific deficits in perceiving and correctly interpreting fearful and sad facial expressions in others, which may translate to “in the moment” deficits in understanding other’s emotions. Similar findings have emerged from at least one other study for identifying guilt in others (Blair, Sellars, Strickland, & Clark, 1995). Additionally, in a task assessing approach and avoidance behaviors relative to the emotional expressions of others, psychopathic individuals were less avoidant of angry faces than their non-psychopathic counterparts (Louise von Borries et al., 2012), indicating that high levels of psychopathy may relate to experiencing less aversion to anger in others.

These findings extend beyond visual stimuli (i.e., faces) to audio stimuli (i.e., voices), such that individuals with psychopathic traits have been found to experience difficulty in identifying fearful and otherwise distressed voices (Blair et al., 2002; Blair, Budhani, Colledge, & Scott, 2005). This link between psychopathic traits and reduced affective empathy has been replicated in other works as well. For instance, high levels of psychopathy were consistently related to reduced arousal responses to others’ distress (see Blair 1999; Blair, Jones, Clark, & Smith, 1997). In lexical tasks, psychopathic traits have been linked to increased errors and latencies when processing words indicative of distress (e.g., sad words, fear words) following a priming stimulus (Blair et al., 2006; Reidy, Zeichner, Hunnicutt-Ferguson, & Lilienfeld, 2008).

These findings have also been replicated in children and adolescents with psychopathic traits. Studies have demonstrated reliable psychopathy-related deficits in identifying emotions in facial stimuli (Blair & Coles, 2000; Blair et al., 2001; White et al., 2012) and in audio stimuli (Stevens, Charman, & Blair, 2001) as well as deficits in autonomic response (Blair, 1999). Kimonis,

Frick, Fazekas, and Loney (2006) found that, in a community sample of children, there was a link between psychopathic traits and diminished processing of emotional stimuli but only for children high in aggressive behavior. Taken as a whole, this body of research indicates that psychopathic traits are related to reduced accuracy and efficiency in identifying distress in others, particularly fear and sadness. Additionally, these deficits exist despite the stimulus used or age of the sample and may be closely related to psychopathy-related aggression.

Connections to Instrumental Aggression

Deficits in empathy are meaningful to risk of engaging in instrumental aggression. Recent work by Blair posits that psychopathic individuals' inability to perceive distress in others is directly linked to instrumental aggression and other antisocial behaviors. Blair and colleagues have proposed the Violence Inhibition Mechanism (VIM) model and the more inclusive Integrated Emotion Systems (IES) model. These models posit that distress cues from others produce a submission response in healthy individuals (Blair, 2005; Blair, 2011; Blair & Frith, 2000; Blair, Morris, Frith, Perrett, & Dolan, 1999) and that these deficits have neuroanatomical correlates related to the amygdala, orbitofrontal cortex, and ventromedial prefrontal cortex (i.e., IES model). Blair posits that the submission response is likely tied to experiencing guilt as a result of others' distress. However, Blair argues that individuals high on psychopathy lack the ability to understand distress in victims, given that they do not experience the appropriate guilt response when harming others. As such, psychopathic individuals may be less likely to experience the (typical) aversive consequence of perceiving others' distress that results from their aggressive behavior.

As part of the IES model, Blair suggests that these deficits have neuroanatomical underpinnings. Specifically, he argues that amygdala impairments are often directly tied to

sadness and fear rather than other negative emotions, such as anger and disgust (Blair, 2007b). Blair posits that neuroanatomical abnormalities associated with psychopathic traits are also evident in reduced activation in the orbitofrontal and ventromedial prefrontal cortices (Blair, 2007b). He suggests that these deficits may increase the probability of future immoral behaviors via decreased moral socialization. Blair argues that moral socialization (i.e., understanding and avoiding moral transgressions) relies on experiencing an aversive reaction to immoral behavior and pairing that experience with other antisocial acts (see Blair, 1995; Blair, 2011). Some support of this theory has been provided in that psychopathic traits are associated with reduced stimulus-reinforcement learning (Blair, 2012; Mitchell et al., 2006), indicating that psychopathic individuals may have more difficulty pairing negative reactions to behavior and anticipating similar responses in future behavior.

The VIM and IES theories have been substantiated by recent laboratory findings. Previous research has established a link between psychopathic traits and increased difficulty with identifying moral transgressions/moral reasoning (Aharoni, Sinnott-Armstrong, & Kiehl, 2012; Seara-Cardoso, Neumann, Roiser, McCrory, & Viding, 2012). Glenn, Iyer, Graham, Koleva, & Haidt (2009) found that empathy mediated the relationship between psychopathic traits and decreased moral concern, with specific relationships in facets of morality relating to harming others and fairness. That is, the lack of empathy associated with psychopathic traits accounted for the relationship between psychopathy and reduced moral reasoning, particularly reasoning that involves interpersonal relationships with others (i.e., avoiding harming others and treating others fairly). These findings were similar to those of Marsh and Cardinale (2012), which demonstrated a link between reduced ability to identify fear in others and increased acceptance of moral transgressions. Further support for the IES was provided in recent findings that have

identified neuroanatomical abnormalities related to psychopathic traits and identification of moral transgressions. Specifically, individuals higher on psychopathic traits demonstrated reduced amygdala activity, decreased connectivity between the amygdala and orbitofrontal cortex, and decreased activation in the ventromedial prefrontal cortex when analyzing moral situations (Glenn, Raine, Schug, Young, & Hauser, 2009; Harenski, Harenski, Shane, & Kiehl, 2010; Marsh et al., 2011). As such, it appears that psychopathic traits are indeed related to immoral decisions involving relationships with others, and that these deficiencies are directly linked to neuroanatomical deficiencies in the amygdala, orbitofrontal cortex, and ventromedial prefrontal cortex.

Gaps and Limitations in the Current Literature

The current literature on moral development and decision making has provided important information regarding the mechanisms that connect psychopathic traits and calloused, instrumental aggression. However, a significant limitation of this body of research is that the preponderance of studies rely on self-reports of aggression or do not directly manipulate the presence of victim distress. As the model has implications for actual behavior, testing the model in a behavioral paradigm is important for establishing utility in “real world” settings. The only previous investigation of laboratory aggression manipulating victim distress was limited to children and found disconfirming evidence of the Blair model (i.e., participants high on psychopathic traits were no more likely to be aggressive when learning of the victim’s distress than individuals lower on these traits; van Baardewijk, Stegge, Bushman, & Vermeiren; 2009). As such, it is clear that further empirical investigation is necessary.

Current Study

Purpose. The purpose of the current study was to examine how psychopathic traits relate to aggressive behavior in a lab paradigm. Specifically, the experimenter designed this study to investigate the interactions between psychopathic traits and cues of victim distress when participants were provided opportunity to be aggressive in order to obtain a mild social incentive (i.e., gaining status via winning). To support this purpose, the current study included two groups (low versus high victim distress), as detailed below. The study measured aggression through the level of pain (over multiple stimuli) that a participant assigned an ostensible co-participant to endure. More detailed information regarding variable coding can be found in the Data Preparation section below.

CHAPTER 2

HYPOTHESES

Hypothesis 1

Participants in the high distress group were expected to assign less pain for all stimuli than those in the low distress group, revealing a main effect for group assignment on aggressive behavior.

Hypothesis 2

A main effect for psychopathic traits was expected such that higher psychopathic scores would predict higher pain assignments in all stimuli.

Hypothesis 3

An interaction effect was expected to emerge between psychopathic traits and group membership such that individuals with low levels of psychopathic traits in the high distress group will assign the least amount of pain, followed by individuals with low levels of psychopathic traits in the low distress group. Individuals high in psychopathic traits were expected to assign the same amount of pain, regardless of group membership. A graphical representation of the expected interaction can be found in Figure 1.

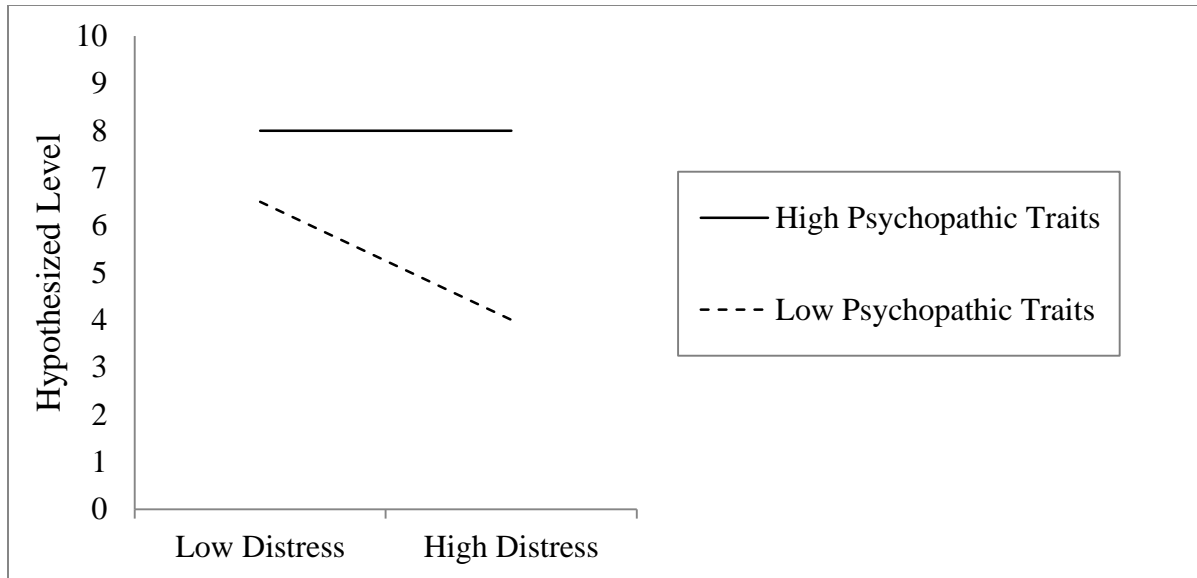


Figure 1

Expected Pain Threshold Group and Psychopathic Trait Interactions

CHAPTER 3

METHOD

Participants and Experimental Design

Participants were 194 undergraduate psychology students who received partial class credit for participation and were recruited via the research participant pool. This sample included participants who completed successfully both the first (i.e., self-report battery) and second (i.e., behavioral component) sessions of the study. Psychopathic traits were oversampled by recruiting 41.8 percent (i.e., $n = 81$) of the sample through a special advertisement:

We are looking for individuals who are charming, impulsive, and carefree. We would like participants who are good at handling people and looking out for number one. Are you good at manipulating others? Are you more capable than others? If so, this project is for you.

This language was adopted from Widom (1977), who found that such advertisements could be successful in recruiting individuals high in psychopathic traits from community samples. The remaining sample of participants (i.e., $n = 113$) was recruited through a neutral ad. However, these two groups did not differ on mean levels of psychopathic traits (per the psychopathy composite score, see Data Preparation; $t(192) = -1.57, p = .12$). Participants were then randomly assigned to one of the two conditions (i.e., high distress for the ostensible co-participant/low co-participant pain threshold [$n = 96$]; low distress for the ostensible co-participant/average co-participant pain threshold [$n = 98$]).

Materials/Apparatuses

Part 1: self-report battery. Of note, descriptive statistics of measures (including mean, standard deviation, and internal consistency) are presented in Tables 1 and 2.

Demographics Questionnaire. This self-report questionnaire assessed pertinent demographics (e.g., race, age, gender, and sexual orientation) of all participants. Specifics of participant demographics are included in the Results section below.

Self-Report Psychopathy Scale: Version III (SRP-III). The SRP-III (Williams, Pulhaus, & Hare, 2007) is a 64-item, self-report measure of psychopathy that yields a total score as well as four subscales (i.e., Interpersonal Manipulation, Callous Affect, Erratic Life Style, and Anti-Social Behavior). Scales demonstrated adequate internal consistency in the current sample (α ranging from .70 to .92).

Levenson Self-Report Psychopathy Scale (LSRP). The LSRP (Levenson, Kiehl, & Fitzpatrick, 1995) is a 26-item self-report measure of psychopathy and yields Factor 1 (i.e., interpersonal/affective) and Factor 2 (i.e., antisocial/behavioral) scores. Items are scored on a “1” (Disagree Strongly) to “4” (Agree Strongly) scale. Internal consistencies were adequate in the current sample (α = .74 and .88).

The Short Dark Triad (SD3). The SD3 (Jones & Paulhus, 2013) is a 27-item self-report measure of the Dark Triad (comprised of psychopathy, narcissism, and Machiavellianism). Items are measured on a 5-point scale ranging from “Disagree Strongly” to “Agree Strongly.” In the current study, only the psychopathy scale was analyzed (α = .79).

Part 2: measures and apparatus.

Pain Sensitivity Questionnaire (PSQ). The PSQ (Ruscheweyh, Marziniak, Stumpfenhorst, Reinholz, & Knecht, 2009) assesses pain sensitivity through 17 questions reflecting everyday situations (e.g., “Imagine you bump your shin badly on a hard edge, for example, on the edge of

a glass coffee table. How painful would that be for you?”). Items are ranked on a 10-point-scale. The PSQ served as a means of maintaining the deceptive premise of the experiment. Participants received information that they were in the “average” pain threshold range based on this scale and that the other ostensible participant fell in the “low” or “average” range, contingent on the randomized condition assignment (see Procedure).

Cold Pressor Task. The Cold Pressor is used traditionally to measure pain threshold and endurance in a low-risk fashion. For the Cold Pressor task in the current study, participants immersed their lower arm into cold water (approximately 1^o – 3^o Celsius). To achieve this temperature, a partitioned cooler held ice on one side while participants placed their arm in the other side (to avoid direct contact with ice). The experimenter requested that participants hold the arm in the water until the sensation first became painful. Participants received feedback about their actual duration and received bogus feedback that placed this duration on a supposedly standardized scale (all participants were told their score was a 7/10, which was average). This feedback provided an anchor for participants to then assign the ostensible opponent a duration of time and pain level to meet in an analogous task (see Procedure).

Pressure Algometer. A Pressure Algometer is a device used to assess participant pain threshold via applying pressure. In the current study, a Wagner Instruments FDIX 50 algometer was used. This Pressure Algometer measured pressure placed on participants’ non-dominant forearm supinator trigger point. Pressure was measured digitally via the Pressure Algometer (pounds per square foot). Similar to the Cold Pressor task, participants received their actual feedback on the task as well as bogus feedback (i.e., their pain threshold was 4/10 and in the “average range”). Again, this feedback provided a perspective point for participants to assign the ostensible co-participant an amount of pressure and pain level to endure.

Electric Shocks. Electric shocks were administered to participants' non-dominant fingertips via attached electrodes. Participants provided feedback on their pain threshold through enduring incrementally increasing shocks until the shock first felt painful. Participants were given feedback that their pain threshold was in the average range (a 6/10). Participants were then able to assign a shock of varying intensity (level "1" to "10") to the ostensible participant for up to 6 seconds.

Manipulation Check and Pain Administration Form. This self-report form consisted of several items gauged at measuring participant awareness of the experiment (e.g., "What was the sex of the [co-]participant?", "What is the [co-]participant's pain tolerance?") and participant belief of the deception (e.g., "Do you have any questions or concerns about the [co-]participant?", "Please indicate your understanding of the purpose of this experiment."). Participant responses to these questions allowed the experimenter a chance to gather more detailed information for the purpose of removing invalid data.

Experiment Assigner Form. This form provided space for participants to receive the bogus feedback regarding their pain threshold on each individual stimulus. Participants were also provided a space to assign a level of pain for the other participant to endure. This provided a means of maintaining the study deception, controlling for participant belief regarding pain threshold, and measuring participant aggression.

Procedure

Part 1. Participants completed the self-report battery online via Qualtrics software. Participants were able to follow a link to the survey from the advertisement through which they were recruited. Measures were presented randomly to reduce order effects. Following this, participants were invited to complete the second part with the behavioral paradigm.

Part 2. For the behavioral paradigm, participants were scheduled for individual sessions and informed that another participant (i.e., a fictional co-participant) had also been scheduled for the session. Upon arrival, participants were provided a cover story for the study (i.e., that they were a part of an experiment investigating the relationship between personality and pain experiences). Participants were seated individually in one room and informed that the ostensible co-participant would be seated in an adjacent room. Participants completed the PSQ and received bogus feedback regarding their self-reported pain threshold (i.e., all participants were told they were in the average range). Following this, participants were told that their pain threshold would be behaviorally measured via the Electric Shocks task.

The experimenter administered the Electric Shocks task in a third room via intercom. Digital audio recordings provided the ostensible co-participant's bogus responses to prompts posed by the experimenter. This procedure provided the perception that the ostensible co-participant was physically present. Additionally, these files contained content that delivered the information about the co-participant's pain threshold and distress level (as assigned by the participant's group membership). For participants in the control group, the digital recordings conveyed that the co-participant had an average pain threshold (i.e., 5/10 on the standardized scale) and was not bothered by pain tasks (i.e., low distress/average pain threshold). For the participants in the victim distress group, the digital recordings indicated that the co-participant had a low pain threshold (i.e., 2/10 on the standardized scale) and was bothered by pain tasks. All participants were told that they fell in the average range on the Electric Shock task (i.e., a 6/10 on the standardized scale).

For the pain assignment task, the experimenter informed participants that one participant would be the "receiving" participant (i.e., experience pain) and the other would be the

“experiment assigner” participant (i.e., assign pain). The experimenter had participants draw a number to assign them ostensibly to either be a “receiver” or “assigner,” though all participants were given the role of “experiment assigner.” At this point, participants were informed that the experimenter was interested in testing whether or not the “assigners” will “win” by assigning more pain than the co-participant can endure. This provided instrumental incentive for participants to seek social status by assigning enhanced levels of pain.

The experimenter informed participants that the “assigner” role would involve first experiencing stimuli then indicating the intensity at which the other co-participant must endure each behavioral task (i.e., the Electric Shock, Cold Pressor, and Pressure Algometer). Given that the Electric Shock task was previously completed, the experimenter administered both the Cold Pressor and Pressure Algometer tasks and provided the resulting feedback. As previously stated, participants were told they fell in the average range on each of these tasks. Participants assigned the ostensible co-participant levels of each behavioral stimulus (i.e., Electrical Shocks, Cold Pressor, and Pressure Algometer).

Following this, participants completed the manipulation check to ensure the deception of the experiment was maintained throughout. Finally, the experimenter provided the actual participant with an initial debriefing in person. A more detailed debriefing was provided at a later time.

Table 1

Measure Characteristics of Paper and Pencil Questionnaires

Note: Information for the Demographics Measure can be found in Table 5.

	<i>M</i>	<i>SD</i>	<i>α</i>
SRP-III	138.23	26.79	.92
IPM	39.99	9.38	.86
CA	36.93	9.14	.84
ELS	39.23	8.49	.79
ASB	22.07	6.05	.70
LSRP			
Factor 1	30.19	7.78	.88
Factor 2	19.21	4.21	.74
SD3			
Psychopathy	1.95	.58	.79

Table 2

Characteristics of Behavioral Measures

	<i>M</i>	<i>SD</i>		<i>M</i>	<i>SD</i>
Electric Shocks			Assigned Shocks		
Low Threshold (μAmps)	270.88	82.79	Level (1-10)	6.80	1.57
High Threshold (μAmps)	1432.16	537.36	Duration (seconds)	2.36	7.75
Pressure Algometer			Assigned Pressure		
Time 1 (lbs./sq.ft.)	5.49	2.20	Pounds/Square Foot	6.73	3.28
Time 2 (lbs./sq.ft.)	5.14	2.14	Level (1-10)	5.68	1.61
Time 3 (lbs./sq.ft.)	4.93	1.94	Assigned Cold Pressor		
Cold Pressor			Duration (seconds)	21.71	19.54
Duration (second)	16.67	11.56	Level (1-10)	7.52	1.59
Temperature (° Celsius)	1.9	.98			

CHAPTER 4

DATA PREPARATION

Removal of Invalid Data

Participant data were removed if they were determined to be invalid. The 194 participants that were used for the final analyses came from a larger pool of 332 participants who attended the behavioral paradigm session. Some participant data were removed because answers during the first session were invalid due to taking the survey too many times ($n = 1$), completing the survey too quickly to yield valid data ($n = 1$), and participants completing surveys with random responses ($n = 9$). For the second session, participant data were removed if the participant indicated he/she did not believe the experiment deception ($n = 35$), if his/her pain threshold was too low ($n = 11$) or high ($n = 35$) to provide deceptive feedback, if he/she did not want to complete the experiment ($n = 10$), or if he/she met exclusion criteria ($n = 1$). Additionally, 35 participants were dropped from the study due to unpredicted occurrences (e.g., technical failures, error in the protocol, actual participants misidentifying the pain threshold of the ostensible co-participant). It should be noted that there were several significant differences between the participants with valid and invalid data. Participants with data removed for the second session were more likely to be male ($\chi^2(1, N = 315) = 11.21, p \leq .001$). Additionally, individuals with invalid data for the second session scored significantly higher on the SRP-III ELS subscale ($t(314) = 3.31, p \leq .001$), on the SD3 Psychopathy scale ($t(314) = 2.37, p \leq .05$), and on the LSRP Factor 2 scale when using a more liberal p-value ($t(314) = 1.92, p = .06$). There were no differences between the groups on race variables or on amount of aggression assigned on any of

the pain stimuli. After removing these unusable data points, the remaining valid data consisted of the described 194 participants.

Variable Coding

Given the behavioral nature of this experiment, it was important to code variables to capture appropriately the research questions. To fully encapsulate the psychopathy construct, the current study included several measures with the intention of creating psychopathy composite score(s) comprised of multiple measures. This allows for more fully representing the psychopathic trait construct rather than relying on a measure-specific conceptualization. Specifically, the SRP-III subscales (IPM, CA ELS, ASB), the LSRP subscales (Factors 1 and 2), and the SD3 psychopathy scale were included for this purpose. In order to create the composite score(s), it was first important to understand the relationships among these scales and then to derive an underlying factor structure. These measures were correlated with one another (see Table 3) and demonstrated consistency with one another ($\alpha = .72$). Exploratory factor analysis (principal axis factoring with an oblimin rotation) was used to determine the nature of latent factors measured by these scales. The EFA yielded one eigenvalue with a value of 1.0 or greater. The first four eigenvalues were as follows: 4.25, .78, .68, and .44, and the first factor alone accounted for 60.7% of the variance. Likewise, the scree plot similarly supported the extraction of one factor. Finally, a one-factor solution was further supported by the Parallel Analysis method (Horn, 1965) and the Minimum Average Partial method (O'Connor 2000; Velicer, 1976). Given these findings, a single psychopathic trait factor was extracted. For use in the following analyses a unit-weighted composite score was calculated by calculating z-scores for each psychopathy scale and summing these z-scores.

For the current study, aggression was captured through the level of pain a participant assigned an ostensible co-participant through three stimuli (Electric Shocks, Pressure Algometer, Cold Pressor Task). Each of these stimuli was investigated individually as a measure of aggression. These measures were all scored on a scale from 1 to 10. Intercorrelations of behavioral stimuli can be found in Table 4.

Group membership (whether the co-participant was in low or high distress) was dummy coded. Participants were coded as a 0 when told that the ostensible participant had a low distress/average pain threshold and a 1 for high distress/low pain threshold. Sex was also dummy coded for the purpose of exploratory analyses such that women were coded as 0 and men were coded as 1. To measure interaction effects, product terms were created among the main effects of interest.

Table 3

*Correlations Among Psychopathic Trait Measures*** $p \leq .01$ * $p \leq .05$

		2	3	4	5	6	7
SRP-III	1. IPM	.71**	.59**	.45**	.71**	.72**	.47**
	2. CA		.55**	.41**	.62**	.69**	.36**
	3. ELS			.48**	.64**	.48**	.57**
	4. ASB				.49**	.37**	.34**
SD3 Psychopathy	5. Total					.61**	.51**
LSRP	6. Factor 1						.47**
	7. Factor 2						----

Table 4

*Correlations Among Behavioral Aggression Measures*** $p \leq .01$ * $p \leq .05$

	2	3
1. Electric Shock Level Assigned	.72**	.66**
2. Pressure Algometer Level Assigned		.67**
3. Cold Pressor Level Assigned		----

CHAPTER 5

RESULTS

Sample Characteristics

The participants included in the analyses were 194 undergraduates who received partial class credit for their participation. The sample was mostly Caucasian ($n = 148$, 76%) and female ($n = 121$, 62%). The average age was 22.12 years ($SD = 2.73$), and participants reported a mean of .86 years of college education ($SD = .09$). Ninety-one percent of participants reported an exclusively heterosexual orientation, and, on a scale from 1 (“completely heterosexual”) to 7 (“completely homosexual”), the sample mean was 1.17 ($SD = .75$). There were no differences between the two groups on demographic variables (race and gender). There were no differences between groups on the psychopathic trait scales or composite score. Further details regarding sample characteristics can be found in Table 5.

Primary Analyses

The primary hypotheses posited two main effects (i.e., one for group and one for psychopathic traits) and an interaction effect. Hierarchical linear regression analyses were used to test hypotheses. Each measure of aggression (i.e., each stimulus for which pain was assigned) was in turn investigated as a dependent variable. Simple slopes analyses (i.e., Aiken and West 1991) were completed to understand how variables of interest interacted with one another. As such, simple slopes for the association of group membership and aggression were investigated at low (-1 SD below the mean) and high (+1 SD above the mean) levels of psychopathic traits.

Electric Shock level as dependent variable. To test the hypothesized effects, group membership, the psychopathic trait composite score, and the product term were entered

simultaneously into the regression model to predict the level of electric shocks assigned. The main effect for group membership ($B = -1.06$, $SE = .20$, $p < .001$) and the interaction term ($B = .08$, $SE = .04$, $p \leq .05$) both emerged as significant; there was no main effect for psychopathic traits ($B = .04$, $SE = .03$, $p = .11$). The model accounted for 22% of the variance associated with administering Electric Shocks ($p \leq .001$).

Consistent with expectations, the effect of group on aggression measured via the assigning of Electric Shock was moderated by psychopathic trait scores such that group was significantly more strongly related to aggression for individuals low in psychopathic traits ($B = -1.49$, $SE = .29$, $p < .001$) than among those high in psychopathy ($B = -.62$, $SE = .29$, $p \leq .05$; Figure 2).

Pressure Algometer as dependent variable. For the next model, assigned level of the Pressure Algometer was entered as the dependent variable. In this model, there were main effects for both group ($B = -.81$, $SE = .22$, $p \leq .001$) and psychopathic traits ($B = .06$, $SE = .03$, $p \leq .05$). There was no interaction, however, between group and psychopathic traits ($B = -.01$, $SE = .04$, $p = .90$). The overall model accounted for 11% of the variance in the dependent variable ($p \leq .001$). As the interaction term was non-significant, no simple slope analyses were completed.

Cold Pressor level as dependent variable. Last, assigned Cold Pressor level was entered as the dependent variable. There was a significant main effect of group ($B = -.97$, $SE = .22$, $p \leq .001$) but no main effect for psychopathic traits ($B = .00$, $SE = .03$, $p = .96$). The expected interaction between group and psychopathic traits in the prediction of the dependent variable was significant using a slightly more liberal p-value ($B = .08$, $SE = .04$, $p = .06$). The overall model accounted for 13% of the variance in the dependent variable ($p \leq .001$).

Simple slope analyses revealed that group was more strongly related to aggression (assigned Cold Pressor values) for individuals low in psychopathic traits ($B = -1.37, SE = .30, p < .001$) versus those high in psychopathic traits ($B = -.57, SE = .30, p = .07$; see Figure 3).

Exploratory Analyses

Exploratory analyses were conducted using sex as an additional moderator such that three-way interaction models were tested.

Electric Shock level assigned. All variables were simultaneously entered into the model. Results indicated that group membership ($B = -1.35, SE = .27, p \leq .001$) and psychopathic traits ($B = .10, SE = .04, p \leq .01$) both emerged as significant main effects. Likewise, a significant two-way interaction was found between psychopathic traits and sex of participant ($B = -.14, SE = .06, p \leq .05$). The three-way interaction term was significant when using a slightly more liberal p-value ($B = .15, SE = .08, p = .06$), and the model accounted for 25% of the variance of Electric Shocks assigned ($p \leq .001$).

To investigate the relationship between group membership and assigned Electric Shock level, simple slope analyses were performed after splitting the sample into samples of men only and women only. For women, the responsiveness to victim distress was fairly consistent across level of psychopathic traits, including low ($B = -1.29, SE = .34, p \leq .001$) and high ($B = -1.41, SE = .48, p \leq .01$) levels. For men, group membership was more highly predictive of aggression for men low on psychopathic traits ($B = -1.81, SE = .51, p \leq .001$) versus men higher on these traits ($B = -.27, SE = .32, p = .41$; Figure 4).

Pressure Algometer level assigned. The next model used assigned Pressure Algometer level as the outcome of interest. Main effects for both group membership ($B = -1.00, SE = .29, p \leq .001$) and psychopathic traits ($B = .12, SE = .04, p \leq .01$) were found. Similar to the findings

with Electric Shocks, the two-way interaction between sex and psychopathic traits was significant ($B = -.15, SE = .06, p \leq .05$). The full three-way interaction including sex was also significant ($B = .21, SE = .09, p \leq .05$). These findings accounted for 14% of the variance associated with assigning pressure ($p \leq .001$).

Simple slopes were conducted to further investigate these findings. Women demonstrated increased responsiveness to victim distress with higher ($B = -1.59, SE = .50, p \leq .01$) rather than lower ($B = -.42, SE = .36, p = .24$; Figure 5) psychopathic traits. For women, aggression assignments were overall lower in the high distress group because women assigned the same level of pain despite level of psychopathic traits, all of which were equally low. For men, group membership was more predictive of aggression when psychopathic traits were low ($B = -1.68, SE = .63, p \leq .01$) rather than high ($B = -.54, SE = .40, p = .18$; Figure 6).

Cold Pressor Level assigned. All variables were simultaneously entered into the model predicting the level of Cold Pressor assigned. Group membership again emerged as a significant predictor ($B = -1.00, SE = .28, p \leq .001$). Surprisingly, gender also emerged as a significant main effect ($B = .65, SE = .33, p \leq .05$) while psychopathic trait level did not ($B = .06, SE = .04, p = .14$). The two-way interaction between psychopathic traits and sex emerged as significant ($B = -.16, SE = .06, p \leq .01$), but the three-way interaction did not ($B = .14, SE = .09, p = .10$). The model for level of assigned Cold Pressor accounted for 18% of the variance ($p \leq .001$). Given the lack of a significant three-way interaction, no simple slope analyses were completed.

Table 5

Sample Characteristics

	<i>N</i>	%
Gender		
Female	121	62
Male	73	37
Race		
Caucasian	148	76
Asian/Indian	26	13
Black	22	11
Hispanic/Latino	9	5
Native American Indian	3	2
Pacific Islander	1	1

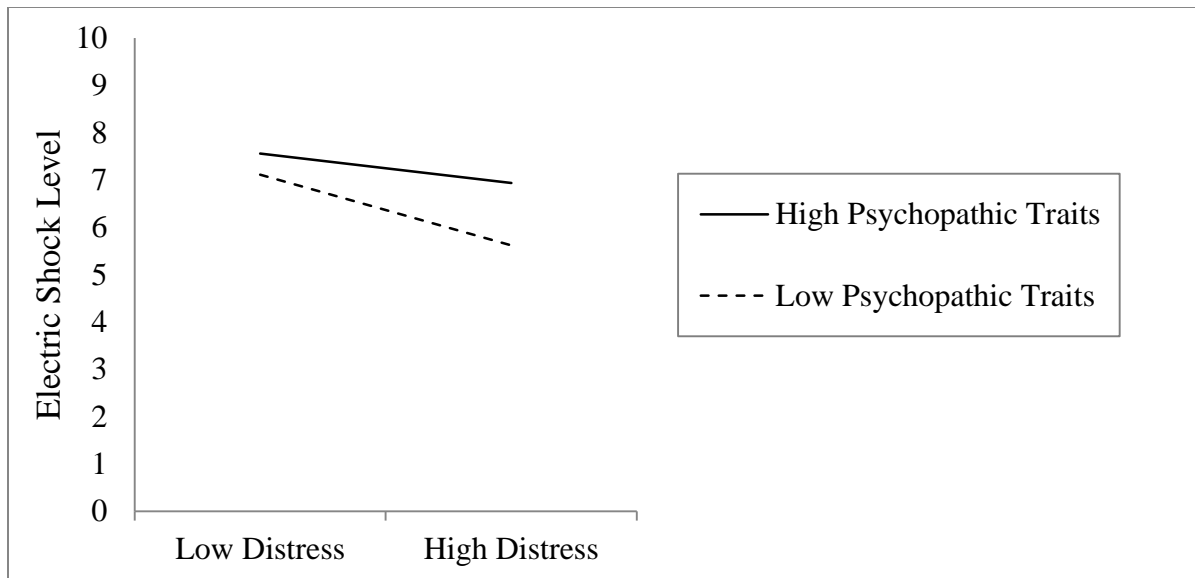


Figure 2

Simple Slopes Analyses with Assigned Electric Shock Level

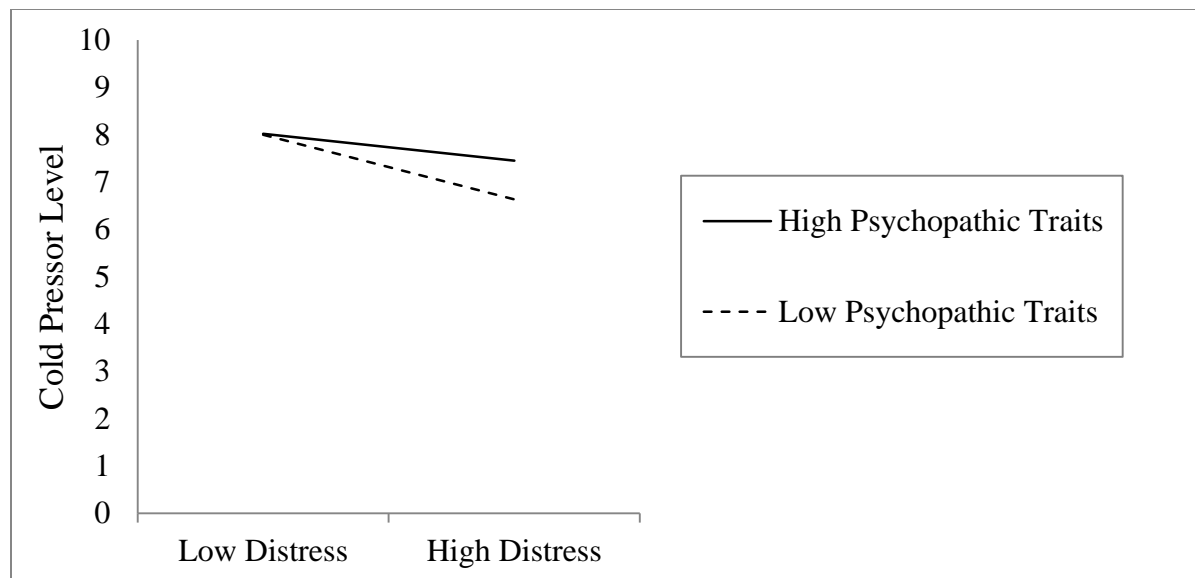


Figure 3

Simple Slopes Analyses with Assigned Cold Pressor Level

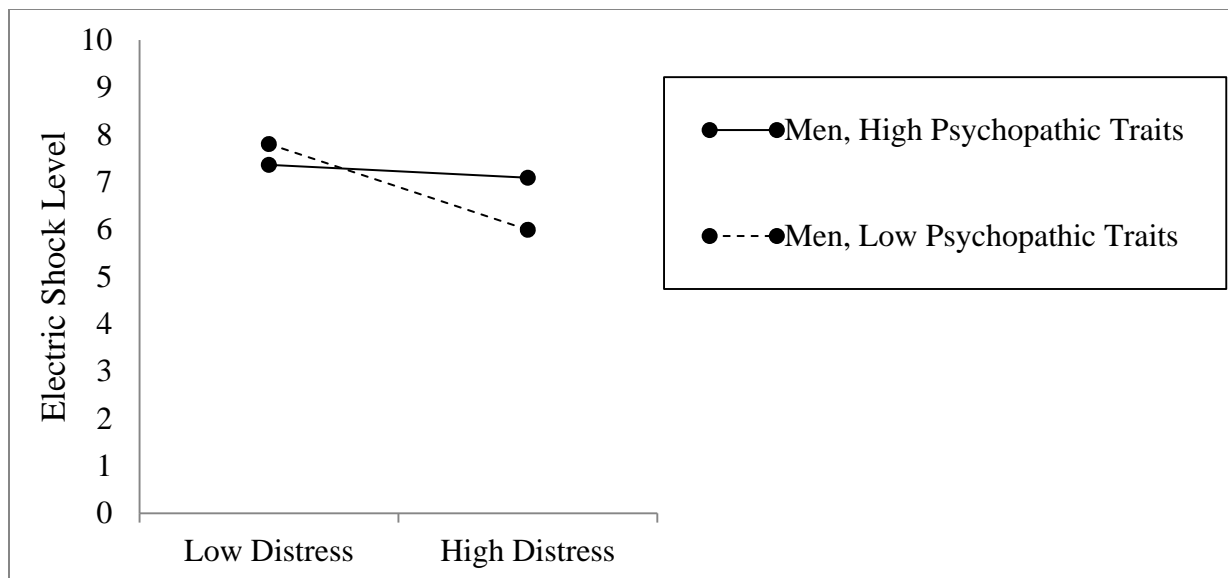


Figure 4

Three-Way Interaction Predicting Electric Shocks Assigned by Men

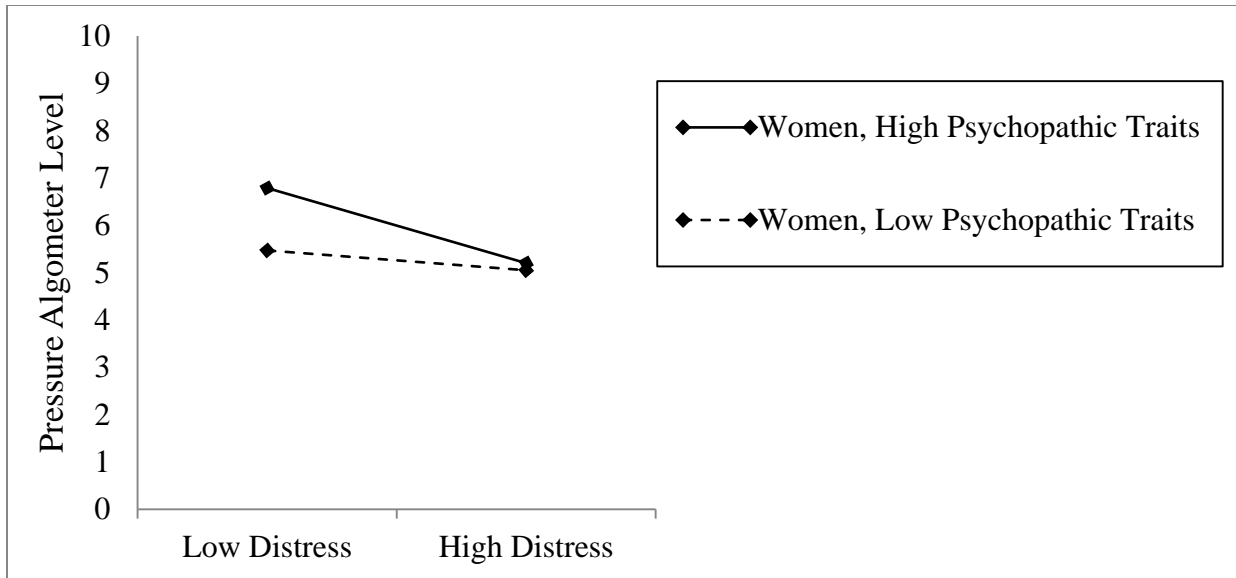


Figure 5

Three-Way Interaction Predicting Pressure Algometer Level Assigned by Women

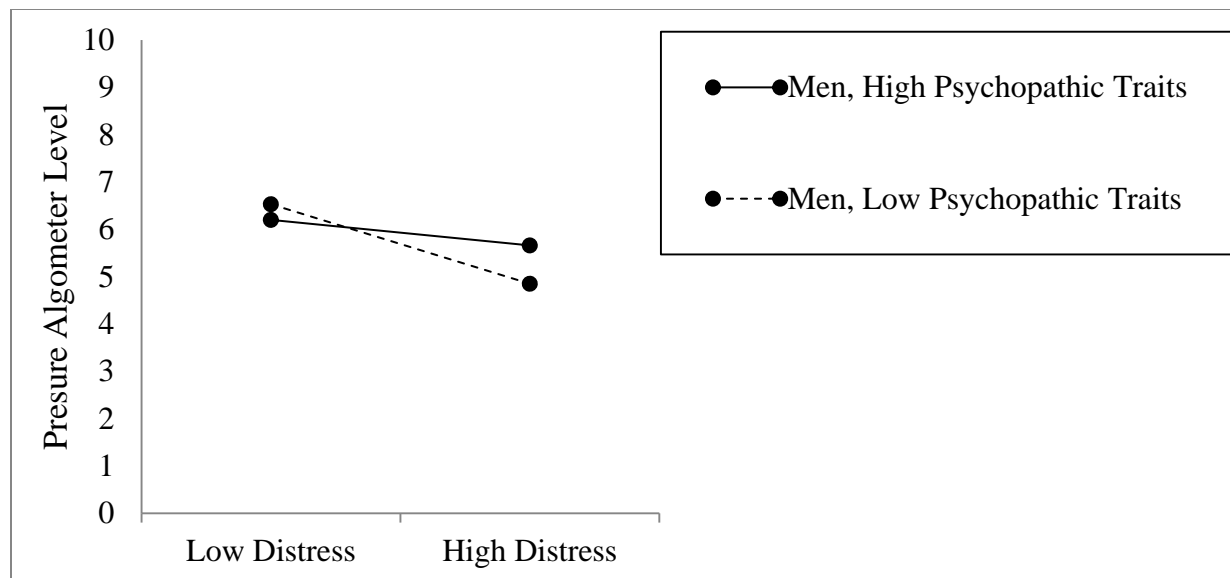


Figure 6

Three-Way Interaction Predicting Pressure Algometer Level Assigned by Men

CHAPTER 6

DISCUSSION

Summary and Interpretation of Primary Findings

The hypotheses of the current study were largely supported. The main effect for group membership was significant in the expected direction for all of the regression models (Electric Shock level, Pressure Algometer level, and Cold Pressor level). This indicates that participants recognized the distress of the ostensible co-participant in the high distress condition and were less aggressive in response to this recognition. Hypothesis 2 (the main effect for psychopathy) was only supported in the Pressure Algometer model, most likely because the Electric Shock model and Cold Pressor model both had a significant effect for interaction between psychopathic traits and group membership, which would potentially wash out the main effect for psychopathic traits. For the majority of the models, psychopathic traits predicted aggression levels in the expected direction (higher psychopathy levels resulted in higher pain assignment/aggression). Overall, the results of the current study support the presence of an interaction between psychopathic traits and group membership in the expected direction. That is, individuals with higher levels of psychopathic traits were less influenced by group assignment; individuals higher on psychopathic traits assigned co-participants similar amounts of pain even if the co-participant was in distress. This interaction translates to these participants being less responsive to victim distress (as indicated by aggressivity towards the ostensible co-participant) than their lower psychopathic trait counterparts. Specifically, the interaction term posited in Hypothesis 3

emerged as significant in two models when using a more liberal p-value (models using Electric Shock and Cold Pressor levels as the outcome).

Why would effects for the Pressure Algometer model be different? While the broad findings from the study support expectations in the hypotheses, the results when focusing on assigned Pressure Algometer level were divergent from those of Electric Shock level and Cold Pressor level. This means that the interaction between psychopathic traits and group membership was partially dependent on what type of pain the participants were assigning. That is, individuals high in psychopathic traits were more responsive to the ostensible co-participant when assigning Pressure Algometer level (i.e., no difference between high and low psychopathic traits) than when assigning Electric Shocks or Cold Pressor level. As was explored in later analyses, the three-way interaction between sex, psychopathic traits, and group membership was significant in the Pressure Algometer model, indicating that sex differences may be complicating the findings associated with assignment of this stimulus. Pressure Algometer-related sex interactions are discussed with the other exploratory analyses below.

Summary and Interpretation of Exploratory Findings

The exploratory analyses investigating sex indicated that participant sex had a consistently meaningful influence in the prediction of aggression. The three-way interaction term between sex, psychopathic traits, and group membership was significant for Electric Shocks level assignment and Pressure Algometer level assignment when using a more liberal p-value. Although the patterns between women and men differed from one another across the three stimuli, the within-sex direction of findings was consistent across stimuli.

For women, psychopathic traits appeared to be consistently related to higher pain assignment regardless of group membership (i.e., victim distress appeared to remain relevant when

psychopathic traits were high and low) with the exception of Pressure Algometer assignment. The results based on Pressure Algometer assigned level indicated that group membership was not significantly influential for low psychopathic traits. However, this was because, for women, Pressure Algometer assignment was consistently low in the high distress group. Over all three models, women seemed to respond consistently to group membership (i.e., the distress of the victim), resulting in less aggression toward the distressed co-participant.

Men, however, demonstrated a pattern of findings more consistent with the proposed hypotheses. For men, increased psychopathic trait level was associated with decreased reactivity to group membership (i.e., to the distressed victim); men high on psychopathic traits were more consistent in the level of pain assigned regardless of victim distress. While the discrepancy of these findings based on sex was not hypothesized *a priori*, this emergent effect both is interesting and requires further contextualization.

Psychopathy in women. A topic of increasing interest in recent literature is the nature of psychopathy in women. Is it possible that interactions with sex are related to differences in how psychopathy manifests based on sex? Miller, Watts, and Jones (2011) found that, while mean levels of self-reported psychopathic traits differed between men and women (with women scoring higher), the relationships between psychopathy and relevant variables were similar between men and women, indicating that sex did not moderate these effects. In terms of the IES model, no work thus far has suggested that women high in psychopathic traits would appear different than their male counterparts. Previous work by Verona, Bresin, and Patrick (2013) found that female inmates higher on psychopathic traits demonstrated similar diminished reactivity to unpleasant pictures as previous work with men has illustrated. Additionally, such emotional deficits appear to mediate the relationship between psychopathic traits and aggression

in women (Reidy, Zeichner, & Foster, 2009) which is congruent with the larger IES model. Last, psychopathy in women relates to elevated risk to perpetrate aggression (Nicholls, Ogloff, Brink, & Spidel, 2005). As such, previous work would suggest that psychopathy does not manifest differently in men and women (and that such differences were not the mechanism behind findings in the current study).

Distress of the co-participant. It is possible that the differential effects based on sex were due to differences in the experimental apparatuses used. In order to achieve sex matching between the participant and the co-participant (and thereby eliminate the confound of aggressing against the opposite gender), two sets of audio clips were created (i.e., one using a male confederate and one using a female confederate). It is possible that the tone of the female clips portrayed greater distress (or was perceived as such due to effects of socialization) than the male clips, leading to stronger effects for the women participants than for the men.

Women and social desirability. Past research has found that women report socially desirable traits at higher rates than men (Bernardi, 2006; Bernardi & Guptill, 2008; Chung & Monroe, 2003; Dalton & Ortegren, 2011; Schoderbek & Deshpande, 1996). Perhaps women experienced higher motivation to appear socially desirable to the experimenter, resulting in less aggressive behavior towards this co-participant. This may have, in turn, resulted in women higher on psychopathic traits reducing pain assignments to the high distress ostensible co-participant (i.e., in an attempt to appeal to the experimenter).

Contextualizing the Findings as Instrumental Aggression

It should be noted that all aggressive behavior in the current study was in the context of winning status via assigning more pain than an ostensible co-participant can endure. Therefore, any increase in pain assigned was in the context of obtaining a goal and not in response to

provocation from others. The underwhelming nature of this victory (i.e., lack of material prize, winning status against a stranger in a time-limited interaction), and that participants responded to such a prompt, indicates both that social status and instrumental aggression are meaningful constructs related to psychopathic traits.

Methodological Limitations of Study

It is important to explore methodological practices that may have influenced the current findings. Although the current findings were largely consistent with expected results, the behavioral nature of this experiment introduced risk for error and confounding variables. Additionally, it is important to contextualize the experiment in relationship to theory and participant behavior in order to understand broader implications for findings.

Cross-sectional data. The first methodological limitation of this study was its cross-sectional nature. The IES model has an inherent longitudinal component; a lack of distress early in life (caused by deficient emotional empathy) results in reduced moral learning and increased antisocial behavior later in life. Although some of these variables of interest were included in the current study, the study itself did not include a longitudinal measure of these variables. Relationships amongst variables did not, therefore, convey causal information (as is posited in the IES). Additionally, the relationships investigated in the current study may have been attenuated by the cross-sectional nature of the study.

Competition. Participants were instructed that they may “win” the social interaction task by assigning levels of pain that were higher than the ostensible co-participant could endure. This methodology provides a measure of aggression (i.e., assigning pain) that is instrumental (i.e., to win). However, this methodological set-up introduces a confound: competition. The competitive nature of the task may have distracted participants from the tasks’ inevitable

outcome (i.e., that they were assigning pain to another person). While it is arguably problematic for participants to assign high levels of pain merely to win a task, this phenomenon does not necessarily indicate that participants would be aggressive outside the context of competition. Likewise, competition may not be related to all the same nomological variables as instrumental aggression, introducing error into the task. Competitiveness has been linked to aggression in previous work, which may be linked to a third variable of dominance (e.g., Archer & Webb, 2006). As such, introduction of this third variable further complicates the conceptualization of how and why participants aggressed in the current study.

Prosocial pain assignment. Participants were instructed that their “role” in the experiment was to assign the other participant a level of pain. As such, some participants may have assigned pain levels to meet demand characteristics of the study (i.e., to act in a way they believed the experimenter wanted them to act; see Ritter & Eslea, 2005). That is, participants may have been aggressing or not aggressing to aid the experimenter rather than to inflict pain on the ostensible co-participant. This possibility may have artificially inflated or deflated the aggression scores of some participants.

Protection of ostensible co-participant. As part of informed consent, participants were informed that they could discontinue any task that would cause them discomfort. Many participants asked specifically if the ostensible co-participant had the same right. This may have resulted in participants assigning high amounts of pain with the hope that the other co-participant would spare his/herself of discomfort. As such, while the measure of pain assigned is still a metric of aggression, scores may have been inflated through participants’ belief that the co-participant was never in any discomfort and responsible for his/her own participation.

Saliency of manipulation. In vein with the previous limitation, it is possible that the ostensible co-participant's level of distress was not overly concerning to participants. Distress levels are a continuous variable, and it is possible that the level described by the ostensible co-participant was not considered high or alarming by actual participants. Likewise, as previously discussed, the levels of distress between the male and female audio clips may have appeared different even though identical scripts were used.

Ecological validity of task. This task was conducted within the limitations of a laboratory. The laboratory setting allows for high internal validity (i.e., consistency among subjects) but may have limitations with external and ecological validity. This effect may relate, in part, to the limitations listed above. There was a large distance (spatial, temporal, and cognitive) between the actual participant and the ostensible co-participant receiving the aggression, which is dissimilar to most forms of physical aggression in real world settings. This sort of distance may unintentionally inflate aggression scores in laboratory paradigms (see Ritter & Eslea, 2005). Additionally, the ecological validity of that task may have influenced the differential effects between the assigned pain stimuli. It could be that the painful experience of feeling some stimuli (i.e., Pressure Algometer pain) may feel more "real" or relevant than the other stimuli (i.e., Cold Pressor task, Electric Shocks).

Limited motivations to aggress. The current study included one motivation to aggress (i.e., to win social status). However, full implications based on instrumental aggression were limited as there was no control for motivation (i.e., aggressing without a reason) and no additional motivation provided (e.g., aggressing following a provocation). As such, the current study was unable to disentangle effects related to instrumental aggression and effects related to general aggressivity.

Sample limitations. Aside from the methodological limitations listed above, the study was limited by the sample collected. The sample was collected purely from an undergraduate research participant pool. As such, participants were non-diverse in terms of age and educational background. Additionally, the sample was primarily Caucasian and lacked racial diversity. Because the experiment required participants who were eligible for deception and enduring pain stimuli, many participants were dropped from analyses. This resulted not only in a reduced sample size but also in a skewed sample; participants who were dropped were more likely to score high on psychopathic traits than participants used in the analyses. This unfortunate limitation means that the current findings are applicable only to individuals high on psychopathic traits who meet other criteria (e.g., pain threshold within certain limits, willingness to participate). Additionally, the usable sample was slightly below the expected sample size to successfully identify medium effect sizes in two-way interactions ($N = 194$ of a desired 210; Faul, Erdfelder, Buchner, & Lang, 2009). This may have prevented rejecting the null hypothesis when medium or small effects were present. Additionally, this may have been a limiting factor when exploring three-way interactions. For instance, some of the interactions (two- and three-way) were only significant when using a more liberal p-value. It is possible that these variables would have met pre-determined levels of significance if additional participants were collected.

Implications for Blair's Model

The primary purpose of this study was to further investigate the utility of Blair's IES model in a behavioral sample. Overall, findings for the current study are congruent with the expected results based on the IES model. Participants did successfully respond to the distress level of an ostensible co-participant, which Blair posits for healthy samples. Additionally, psychopathic traits were generally associated with higher levels of aggression, especially in the control (low

distress) condition. Likewise, findings from the current study suggested that psychopathic traits were associated with less responsiveness to victims in distress (through assigning equal or higher amounts of pain to distressed victims). However, previous work with the IES has not indicated that this model would be moderated by sex. Therefore, while the model was supported in a behavioral sample, these findings also indicate that future work is required to better understand the intricacies of the model, particularly between men and women.

Implications for Future Research

At the time of the current study, only two known behavioral investigations of Blair's IES model exist (including this study). Given that the IES model deals with behavioral outcomes (i.e., antisocial behavior), behavioral paradigms are important to fully understand the model. The current study provided promise for the IES working in a cross-sectional behavioral sample. However, the complexity of the current findings would encourage more in-depth explorations of behavioral paradigms investigating the IES. The current study serves as a foundation on which future studies can improve. Specifically, additional research would benefit from minimizing the competitive nature of the task, measuring competitiveness as a covariate and controlling for its effects, increasing the distress of the ostensible co-participant, and increasing the perception that actual participants are applying aggression directly to a co-participant.

Conclusion

Overall, findings consistently suggested that participants respond to cues of victim distress in that they will assign significantly less pain to a co-participant if they believe that the co-participant would be distressed by receiving even low amounts of pain. Additionally, high psychopathic traits are generally associated with assigning higher pain to an opponent. Individuals low on psychopathic traits are more responsive to information about victim distress

than individuals higher on these traits, though this effect appears to be moderated by sex. Taking all findings together, the IES model appears to be a viable model but in need of further examination, particularly through the lens of a behavioral perspective.

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APPENDIX

Demographics Questionnaire

DIRECTIONS: Please choose the best response for each question.

1. What is your gender?

- A. Male
- B. Female
- C. Other: _____

2. What is your age?

- A. 18
- B. 19
- C. 20
- D. 21
- E. 22
- F. 23
- G. 24
- H. 25
- I. Other: _____

3. What is your current year in college?

- A. First
- B. Second
- C. Third
- D. Fourth
- E. Fifth or above
- F. Graduate student
- G. Other: _____

4. Where do you currently live?
- A. College dormitory or residence hall
 - B. Fraternity house
 - C. Other University/college housing
 - D. Off-campus house or apartment
 - E. Parent/Guardian's home
 - F. Other: _____
5. What is your marital status?
- A. Never married
 - B. Married
 - C. Cohabiting
 - D. Divorced or Separated
 - E. Widowed
6. What is your race/ethnicity (to indicate mixed heritage choose more than one option)?
- A. Asian
 - B. Black or African American
 - C. Hispanic or Latino
 - D. Native Hawaiian or Other Pacific Islander
 - E. White
 - F. American Indian or Alaska Native
 - H. Other: _____
7. What is your religion?
- A. Catholic (Christian)
 - B. Protestant (Christian)
 - C. Jewish
 - D. Muslim
 - E. Buddhist
 - F. Nondenominational
 - G. Other: _____
 - H. None
8. Are you a member of a fraternity or sorority?
- A. Yes
 - B. No

9. Which one best describes your relationships/sexual orientation?

- A. Exclusively heterosexual experiences
- B. Mostly heterosexual experiences
- C. More heterosexual than homosexual experiences
- D. Equal heterosexual and homosexual experiences
- E. More homosexual than heterosexual experiences
- F. Mostly homosexual experiences
- G. Exclusively homosexual experiences
- H. Other: _____

10. Are you a member of any sports teams?

- A. No
- B. Yes- Intramural Level
- C. Yes- College Level
- D. Other: _____

SRP-III

Please rate the degree to which you agree with the following statements about you.

- | 1 | 2 | 3 | 4 | 5 |
|----------------------|----------|---------|-------|-------------------|
| Disagree
Strongly | Disagree | Neutral | Agree | Agree
Strongly |
1. I'm a rebellious person.
 2. I'm more tough-minded than other people.
 3. I think I could "beat" a lie detector.
 4. I have taken illegal drugs (e.g., marijuana, ecstasy).
 5. I have never been involved in delinquent gang activity.
 6. I have never stolen a truck, car or motorcycle.
 7. Most people are wimps.
 8. I purposely flatter people to get them on my side.
 9. I've often done something dangerous just for the thrill of it.
 10. I have tricked someone into giving me money.
 11. It tortures me to see an injured animal.
 12. I have assaulted a law enforcement official or social worker.
 13. I have pretended to be someone else in order to get something.
 14. I always plan out my weekly activities.
 15. I like to see fist-fights.
 16. I'm not tricky or sly.
 17. I'd be good at a dangerous job because I make fast decisions.
 18. I have never tried to force someone to have sex.
 19. My friends would say that I am a warm person.
 20. I would get a kick out of 'scamming' someone.
 21. I have never attacked someone with the idea of injuring them.
 22. I never miss appointments.
 23. I avoid horror movies.
 24. I trust other people to be honest.

25. I hate high speed driving.
26. I feel so sorry when I see a homeless person.
27. It's fun to see how far you can push people before they get upset.
28. I enjoy doing wild things.
29. I have broken into a building or vehicle in order to steal something or vandalize.
30. I don't bother to keep in touch with my family any more.
31. I find it difficult to manipulate people.
32. I rarely follow the rules.
33. I never cry at movies.
34. I have never been arrested.
35. You should take advantage of other people before they do it to you.
36. I don't enjoy gambling for real money.
37. People sometimes say that I'm cold-hearted.
38. People can usually tell if I am lying.
39. I like to have sex with people I barely know.
40. I love violent sports and movies.
41. Sometimes you have to pretend you like people to get something out of them.
42. I am an impulsive person.
43. I have taken hard drugs (e.g., heroin, cocaine).
44. I'm a soft-hearted person.
45. I can talk people into anything.
46. I never shoplifted from a store.
47. I don't enjoy taking risks.
48. People are too sensitive when I tell them the truth about themselves.
49. I was convicted of a serious crime.
50. Most people tell lies everyday.
51. I keep getting in trouble for the same things over and over.
52. Every now and then I carry a weapon (knife or gun) for protection.
53. People cry way too much at funerals.
54. You can get what you want by telling people what they want to hear.
55. I easily get bored.

56. I never feel guilty over hurting others.
57. I have threatened people into giving me money, clothes, or makeup.
58. A lot of people are “suckers” and can easily be fooled.
59. I admit that I often “mouth off” without thinking.
60. I sometimes dump friends that I don’t need any more.
61. I would never step on others to get what I want.
62. I have close friends who served time in prison.
63. I purposely tried to hit someone with the vehicle I was driving.
64. I have violated my probation from prison.

The Short Dark Triad (SD3)

Instructions: *Please indicate how much you agree with each of the following statements*

Disagree strongly	Disagree	Neither agree nor disagree	Agree	Agree strongly
1	2	3	4	5

Section 1

1. It's not wise to tell your secrets.
2. Generally speaking, people won't work hard unless they have to.
3. Whatever it takes, you must get the important people on your side.
4. Avoid direct conflict with others because they may be useful in the future.
5. It's wise to keep track of information that you can use against people later.
6. You should wait for the right time to get back at people.
7. There are things you should hide from other people because they don't need to know.
8. Make sure your plans benefit yourself, not others.
9. Most people can be manipulated.

Section 2

1. People see me as a natural leader.
2. I hate being the center of attention. (R)
3. Many group activities tend to be dull without me.
4. I know that I am special because everyone keeps telling me so.
5. I like to get acquainted with important people.
6. I feel embarrassed if someone compliments me. (R)
7. I have been compared to famous people.
8. I am an average person. (R)
9. I insist on getting the respect I deserve.

Section 3

1. I like to get revenge on authorities.
2. I avoid dangerous situations. (R)

3. Payback needs to be quick and nasty.
4. People often say I'm out of control.
5. It's true that I can be mean to others.
6. People who mess with me always regret it.
7. I have never gotten into trouble with the law. (R)
8. I like to pick on losers.
9. I'll say anything to get what I want.

LSRP

Below are a number of statements that describe people's likes and attitudes. For each statement, please indicate how much you agree or disagree with the statement. If you **Agree Strongly** circle **1**, if you **Agree Somewhat** circle **2**, if you **Disagree somewhat** circle **3**, and if you **Disagree Strongly** circle **4**.

		Agree Strongly	Agree Somewhat	Disagree Somewhat	Disagree Strongly
1	Success is based on survival of the fittest; I am not concerned about the losers.	1	2	3	4
2	I quickly lose interest in tasks I start.	1	2	3	4
3	When I get frustrated, I often "let off steam" by blowing my top.	1	2	3	4
4	My main purpose in life is getting as many goodies as I can.	1	2	3	4
5	Before I do anything, I carefully consider the possible consequences.	1	2	3	4
6	Making a lot of money is my most important goal.	1	2	3	4
7	For me, what's right is whatever I can get away with.	1	2	3	4
8	I am often bored.	1	2	3	4
9	I enjoy manipulating other people's feelings.	1	2	3	4
10	I often admire a really clever scam.	1	2	3	4
11	I would be upset if my success came at someone else's expense.	1	2	3	4
12	People who are stupid enough to get ripped off usually deserve it.	1	2	3	4
13	I tell other people what they want to hear so that they will do what I want them to do.	1	2	3	4
14	I feel bad if my words or actions cause someone else to feel emotional pain.	1	2	3	4
15	Looking out for myself is my top priority.	1	2	3	4
16	Most of my problems are due to the fact that other people don't understand me.	1	2	3	4
17	Cheating is not justified because it is unfair to others.	1	2	3	4
18	I find myself in the same kinds of trouble, time after time.	1	2	3	4

19	Even if I were trying to sell something, I wouldn't lie about it.	1	2	3	4
20	In today's world, I feel justified in doing anything I can get away with to succeed.	1	2	3	4
21	I don't plan anything very far in advance.	1	2	3	4
22	I let others worry about higher values; my main concern is with the bottom line.	1	2	3	4
23	I find that I am able to pursue one goal for a long time.	1	2	3	4
24	I make a point of trying not to hurt others in pursuit of my goals.	1	2	3	4
25	I have been in a lot of shouting matches with other people.	1	2	3	4
26	Love is overrated.	1	2	3	4

PSQ

This questionnaire contains a series of questions in which you should imagine yourself in certain situations. You should then decide if these situations would be painful for you and if yes, how painful they would be. **Let 0 stand for no pain; 1 is an only just noticeable pain and 10 the most severe pain that you can imagine or consider possible.** Please mark the scale with a cross on the number that is most true for you. Keep in mind that there are no “right” or “wrong” answers; only your personal assessment of the situation counts.

Please try as much as possible not to allow your fear or aversion of the imagined situations affect your assessment of painfulness.

1. Imagine you bump your shin badly on a hard edge, for example, on the edge of a glass coffee table.

How painful would that be for you?

0 = no pain at all

10 = most severe pain imaginable

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

2. Imagine you burn your tongue on a very hot drink.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

3. Imagine your muscles are slightly sore as the result of physical activity.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

4. Imagine you trap your finger in a drawer.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

5. Imagine you take a shower with lukewarm water.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

6. Imagine you have mild sunburn on your shoulders.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

7. Imagine you grazed your knee falling off your bicycle.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

8. Imagine you accidentally bite your tongue or cheek badly while eating.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

9. Imagine walking across a cool tiled floor with bare feet.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

10. Imagine you have a minor cut on your finger and inadvertently get lemon juice in the wound.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

11. Imagine you prick your fingertip on the thorn of a rose.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

12. Imagine you stick your bare hands in the snow for a couple of minutes or bring your hands in contact with snow for some time, for example, while making snowballs.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

13. Imagine you shake hands with someone who has a normal grip.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

14. Imagine you shake hands with someone who has a very strong grip.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

15. Imagine you pick up a hot pot by inadvertently grabbing its equally hot handles.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

16. Imagine you are wearing sandals and someone with heavy boots steps on your foot.

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

17. Imagine you bump your elbow on the edge of a table (“funny bone”).

How painful would that be for you?

0 ----- 1 ----- 2 ----- 3 ----- 4 ----- 5 ----- 6 ----- 7 ----- 8 ----- 9 ----- 10

MCF

What is the participant's pain tolerance (circle one)?

LOW

AVERAGE

HIGH

Please indicate the following:

What was the sex of the participant? _____

How well do you like the participant (circle one)?

1 (very much) ... 2 (a lot) ... 3 (neutral) ... 4 (dislike) ... 5 (strongly dislike)

What else do you know about the participant?

Do you have any questions or concerns about the participant?

Please indicate your understanding of the purpose of this experiment:

Experiment Assigner Form

Electric Shock:

_____ / 10 YOUR highest level of shock endured for 0.5 seconds (_____ range).

Please indicate below the duration, level, and intensity of the **electric shocks** assigned to the Experiment Receiver.

_____/10

_____ seconds

Pressure Algometer Task:

Average _____ pounds per square inch YOU endured (_____ / 10, in the _____ range).

Please indicate below the duration, level, and intensity of the **pressure** assigned to the Experiment Receiver.

_____ pounds per square inch

_____/10

Cold Pressor Task:

_____ seconds of YOUR endurance (_____ / 10, in the _____ range).

Please indicate below the duration, level, and intensity of the **cold water** assigned to the Experiment Receiver.

_____ seconds

_____/10



LOW

AVERAGE

HIGH

1.....2.....3.....	4.....5.....6.....78.....9.....10
--------------------	---------------------	---------------------