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Who Can Take the Heat? Investigating the Relationships between Psychopathy, Stress, and Behavioral Reactions to a Mock Interrogation Situation

An Honors Thesis submitted in partial fulfillment of the requirements for Honors in Psychology

By

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Under the Mentorship of Dr. Amy Hackney

ABSTRACT

The primary purpose of this experiment was to test whether individuals higher in psychopathy would experience less stress during a mock interrogation situation compared to individuals lower in psychopathy. Psycholegal experiments using a mock interrogation paradigm have focused on the situational conditions that increase the likelihood of false confessions. To our knowledge these studies have not investigated factors that predict a guilty participant's refusal to confess. We chose to investigate whether psychopathy would predict refusal to confess when guilty of a mock crime. Psychopathy is a personality disorder often characterized by callous affect, interpersonal manipulation, and impulsiveness. In addition, individuals who are higher in psychopathy may possess adaptive traits, such as stress immunity. Eleven participants were randomly assigned to either an innocent or guilty condition in a mock interrogation paradigm and assessed for psychopathy levels. It was hypothesized that individuals higher in adaptive psychopathic traits would have a lower heart rate during a stressful mock interrogation, report less anxiety, and be more likely to deny guilt than individuals lower in adaptive psychopathy. Results showed that all of the guilty participants confessed, and two-thirds of the not guilty participants confessed. As predicted, correlational analyses showed a moderate negative association between reported anxiety during the interrogation and psychopathy, but this test was underpowered and yielded a nonsignificant association. We recommend that future research develop a protocol that will lead to guilty participants refusing to confess to adequately test the relationship between psychopathy, stress immunity, and behavioral reactions to a mock interrogation.

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Who Can Take the Heat?

Investigating the Relationships Between Psychopathy, Stress, and Behavioral Reactions to a Mock Interrogation Situation

Introduction

Past research has shown that some individuals who are high in psychopathy have adaptive psychopathic traits. These individuals are resistant to psychological distress that may be inherent in interrogation situations (Lilienfeld, Smith, Berg, & Latzman, 2014). In the psycholegal literature, mock interrogation studies have demonstrated that confession rates are high for both those who are guilty and not guilty of a mock crime. However, there is evidence that a small percentage of guilty individuals refuse to confess. The purpose of the current study is to investigate the relationship between levels of psychopathy, stress, and confession rates in a mock interrogation paradigm.

Psychopathy

Psychopathy is a psychological condition that is usually characterized by heightened propensities for manipulation, low empathy, and reduced inhibitions among many other traits (Neumann & Pardini, 2014). Psychopathy is classified as a personality disorder that may take the form of very different manifestations within various individuals. Understanding the nature and components of psychopathy is crucial to understand its prevalence and behavioral outcomes.

Psychopathic Personality Disorder has been decried in popular culture and media as a disorder that instantaneously influences one to embark on a murderous rage when active but is undetectable when inactive (Smith, Lilienfeld, Coffey, & Dabbs, 2013). Although this depiction could not be further from the truth in the majority of individuals

suffering from psychopathic personality disorder, components of psychopathy such as low empathy and callousness call for careful and deliberate evaluation and treatment from the psychological community as a whole (Skeem, Poythress, Edens, Lilienfeld, & Cale, 2003). Alternatively, psychopathy has been theorized to include bravery, brilliance and heroism by some (Lilienfeld et al., 2014; Smith et al., 2013). The corporate boardroom, the international negotiating table and the world stage are just a few areas in which individuals high in psychopathy might excel beyond their peers thanks to factors of psychopathy such as stress resilience and boldness (Smith et al., 2013). The purpose of the current research is to examine the relationship between psychopathy and stress resilience within a college population in a mock interrogation setting. With greater understanding of this relationship, criminal investigators will be in a more knowledgeable position to question individuals who present elevated levels of psychopathic traits.

Measurement of Psychopathy

Individuals who are high in psychopathy vary significantly in a variety of attributes from those who society would generally deem psychologically normal (Christian & Sellbom, 2015; Lee & Salekin, 2010; Lilienfeld, Patrick, Benning, Berg, Sellbom, & Edens, 2012).

Psychologists have continually attempted to analyze, isolate and identify the exact personality traits and internal attributes that individuals high in psychopathy possess when compared to the general population (Christian & Sellbom, 2015, Lilienfeld et al., 2012). Some psychologists posit that psychopathy is best defined when using a two-factor model while many others support a three or four factor model to facilitate understanding of this disorder (Christian & Sellbom, 2015; Drislane, Patrick, & Arsal,

2014). Although the majority of these models are attempting to measure the same basic attributes, psychologists seem to vary in their determination of how the abnormal levels of each of these personality traits or factors should be categorized as well as which of these attributes should comprise the main substance of the disorder and which should be regarded as secondary or even tertiary factors.

For instance, the Hare Psychopathy Check List -Revised (PCL-R), which defines psychopathy as a two-factor disorder consisting of primary and secondary archetypes, is often considered a forerunner and mainstay when examining psychopathy (Neumann & Pardini, 2014). In contrast with the PCL-R, the Triarchic Psychopathy Measure examines three archetypes that derive from the older two factor model in order to potentially better measure the presence of psychopathy (Drislane, Patrick, & Arsal, 2014). The distinction that these variations represent is vital in determining levels of psychopathic traits in an individual (Christian & Sellbom, 2015).

Any literature relating to the measurement of psychopathy will most likely mention or begin with the Hare Psychopathy Checklist- Revised. Commonly abbreviated as the PCL-R, this measure involves a detailed interview and background or file review (Neumann & Pardini, 2014). Although this assessment is often seen as the high-water benchmark of assessing the presence of psychopathy, it is a lengthy and intense process for interviewers and researchers (Neumann & Pardini, 2014). This measure requires extensive training and funding as well as a background review, which is often difficult or impossible in a general-public or college population (Neumann & Pardini, 2014).

These realities have led other psychologists to develop faster and more administrable self-report measures to gauge an individual's level of psychopathy. The

drawback to these self-report measures is that there is more room for deception and misdiagnosis due to response of the subject (Neumann & Pardini, 2014).

Positive impression management, or when a subject of a psychological assessment attempts to appear lower in psychopathy than they are in reality, happens in a number of instances including: fear of ostracization or hopes of an early dismissal from a treatment plan, as well as avoidance of incarceration (Neumann & Pardini, 2014). Psychologists must responsibly balance the levels of accessibility and potential drawbacks related to diagnosticity of each self-assessment method in order to achieve the most accurate results possible and to therefore provide the best treatment for each subject.

The Psychopathy Personality Inventory is a self-report measure developed by Dr. Scott Lilienfeld and Dr. Brian Andrews to assess psychopathy using a self-report scale without the need for a records review or an interview that requires training and funding (Blagov, Patrick, Oost, Goodman, & Pugh, 2016). This central tenant is beneficial in two main ways: it makes the assessment simpler to administer, meaning that more subjects can be assessed in a given time frame, and it makes assessment of general and college populations more feasible by elimination of the need for a records review.

The PPI originally contained eight subscales in which Littlefield and Andrews attempt to define and quantify the various attributes of psychopathy; however, in 2005, a revised version of the scale (known as the Psychopathy Personality Inventory- Revised) was released which refocused on three (sometimes two depending on the specific iteration of the scale and the needs of the researcher) more overreaching areas of psychopathy: *Fearless Dominance*, *Self-Centered Impulsivity*, and *Cold-heartedness* (Cold-heartedness is sometimes excluded) (Kelsey, Rogers, & Robinson, 2014).

This three-factor approach of psychopathy has been emulated by many researchers in the modern literature but is also considered highly controversial and a significant departure from the works of Cleckly and Hare (Drislane, Patrick, & Arsal, 2014). Of specific interest in this measure is the Fearless Dominance subscale (PPI-FD) which encompasses personality traits such as stress immunity, social potency, and fearlessness. PPI-FD has recently been the subject of much debate in modern psychopathy literature, with both detractors and proponents presenting convincing arguments for their stances. Yet, despite this debate there is rigorous evidence for the construct validity of the responses to this scale as well as strong evidence that factors of the PPI-R associate strongly with corresponding factors of other scales such as the PCL-R.

In further contrast to the PCL-R, the Triarchic Psychopathy Measure (TriPM) also uses a three-factor measure where *Disinhibition, Meanness* and *Boldness* are characterized as being the defining factors of psychopathy (Blagov, Patrick, Oost, Goodman, & Pugh, 2016; Drislane, Patrick, & Arsal, 2014). In this model the *Meanness* factor corresponds to the *Callous* (or Callous Aggression) factor of the LSRP, and Factor Two of the PCL-R (Drislane, Patrick, & Arsal, 2014). Factor One of the PCL-R is split into two subsequent factors labeled *Disinhibition* (externalizing adversity, impulsivity and irresponsibility) and *Boldness* (adaptive mindset: entailing dominance emotional stability and venturesomeness) (Drislane, Patrick, & Arsal, 2014).

By using the TriPM, supporters of the measure feel that a three-factor approach that splits the PCL-R factor One into two distinct and more specific personality traits produces a more valid and wholesome result when compared to many other two or three

factor report measures of psychopathy. The TriPM also importantly retains the convenience and accessibility of any other self-report measure, prompting many psychologists to utilize the TriPM rather than another measurement (Blagov et al., 2016; Drislane, Patrick, & Arsal, 2014).

Although different measures of psychopathy define the underlying factors of the disorder in different ways, almost all of these measures have certain key qualities in common. Psychopathy tends to remain consistent in reference to a few key or core traits while others may be included or excluded depending on the study or measurement (Lee & Salekin, 2010). Some form of maladaptive or antisocial behavior measure is present in most modern measures of psychopathy (Drislane, Patrick, & Arsal, 2014; Gonsalves, Mclawsen, & Huss, 2006). In truth, not all psychopaths exhibit maladaptive or antisocial behavior, however a psychopathic assessment would be incomplete without including some measure for this personality trait or factor of psychopathy (Lee & Salekin, 2010). A criminal background, (which could be viewed as a symptom or effect of antisocial behavior) however, is often not included on self-report measures, as these assessments are generally designed for use in general or college settings rather than their forensic counterparts (Gonsalves, Mclawsen, & Huss, 2006).

Another factor that is almost universally present in measures used to assess psychopathy is some assessment or quantification of interpersonal adeptness or manipulation (Lee & Salekin, 2010). Just as not all psychopaths are callous or criminal, so are all psychopaths not adept at navigating interpersonal conflict or communication. However, this ability to manipulate or simply engineer a social situation to one's own benefit is a classic trait of the primary psychopath as portrayed in popular media (Miller,

Gaughan, & Pryor). Regardless of media portrayal, most measures of psychopathy do account for this social pervasiveness when testing for psychopathy in an individual (Lee & Salekin, 2010). Within the PCL-R this aspect is classified within Factor One, and within the Triarchic model it is referred to as *Boldness*, but no matter how the factor is operationalized, the social pervasiveness aspect is almost always present within valid measurements of psychopathy (Drislane, Patrick, & Arsal, 2014).

Differences in Psychopathy Between Men and Women

Perhaps the most critical limitation of the PPI-R FD is its low propensity to predict other factors of psychopathy or psychopathy as a personality disorder as well as its inconsistency in detecting adaptive traits in females. PPI-R FD is often regarded as diagnostically inconclusive when used alone without other factors of the PPI-R, due to its concentration on the adaptive traits of psychopathy and does not account for the maladaptive traits of the disorder.

Fearless Dominance also often struggles to identify the presence of adaptive factors of psychopathy in women (Murphy, Lilienfeld, Skeem, & Edens 2016). Murphy and colleagues report that by using a multiple regression analysis PPI-R FD correlates with PCL-R Factor One traits (a commonly accepted standard in the study of psychopathy) (Murphy et al., 2016). In the same study, however, Fearless Dominance failed to present diagnostic power when examining the same traits in females (Murphy et al., 2016).

This suggests that this inability may be due to conceptual and fundamental difference in adaptive psychopathic traits in women (Murphy et al., 2016). This would not be the first reporting of such a divergence as Warren and colleagues discovered in

their 2003 study (Warren, Burnette, South, Chauhan, Bale, Friend, & Patten, 2003). Warren et al. found that women inconsistently qualified as abnormally psychopathic (as defined by a score of thirty on the PCL-R) when assessed by two and three factor measures of psychopathy, while men undergoing this same analysis showed no commensurate variation, suggesting that many self report psychopathy scales may focus on examining male participants rather than female participants (Warren et al., 2003).

This data could also support the hypothesis that men and women simply conceptualize or manifest both adaptive and maladaptive traits of psychopathy in different fashions, or it could derive from the nature of most psychopathic assessments as being created with an incarcerated population in mind (Murphy et al., 2016). Alternatively, Murphy and colleagues suggest that adaptive psychopathy may be conceptualized similarly in men and women but that the PPI-R FD may not address the way in which these individuals characterize their own traits or may simply not capture those traits in the same way that it does for men (Murphy et al., 2016). Murphy et al. also point out that due to the nature of the PPI-R and LSRP as self-report measures, they may gauge psychopathy in a conceptually distinct way as compared to the PCL-R (Murphy et al., 2016). Researchers reliant on self-report methods such as the PPI-R or LSRP would do well to monitor the results of their female participants carefully and consider employing a non-self-report measure if circumstances permit in order to further verify the findings of the self-report measure of psychopathy.

Positive Impression Management and Stress-Resilient Personality Types

Within all self-report measures of any psychological phenomena, there exists the possibility of misrepresentation of a participant within the analytic measure. Within

psychopathic related-research this concern is amplified due to the existence of a phenomenon known as Positive Impression Management. Positive Impression Management (PIM) may occur when a participant whom is high in psychopathy fears an accurate diagnosis due to the negative social stigma this diagnosis may carry (Kelsey, Rogers, & Robinson, 2014). Participants engage in PIM when they intentionally provide responses that they feel are "normal" and do not truly represent themselves (Kelsey, Rogers, & Robinson, 2014).

Kelsey, Rodgers, and Robinson, recognizing that Positive Impression Management is often a fundamental component of psychopathic personality, sought to enhance the understanding of the phenomena (Kelsey, Rogers, & Robinson, 2014). The researchers found that, in relation to the PCL-R, no self-evaluation method does a perfect job of accurately gauging the presence of psychopathy among those who seek to deceive psychologists in relation to these diagnoses (Kelsey, Rogers, & Robinson, 2014). The Levenson Self Report model of Psychopathy did manage to achieve an "adequate" level of association with Factor Two of the PCL-R (Kelsey, Rogers, & Robinson, 2014). When there is a large incentive for participants to engage in deception, the PCL-R should be used if financial realities, expertise, and time permit.

Mock-Interrogations and Measuring Stress

In order to better understand the psychological effects of interrogation procedures that are commonplace in the criminal justice system, researchers Guyll and colleagues (2013) set out to examine *Miranda* rights and the rates at which individuals, regardless of guilt, were willing to waive these rights. Guyll et al. hypothesized that higher levels of stress could lead participants to waive their rights at greater rates. As seeking to measure

stress of individuals in interrogation settings was a primary goal in this experiment, Mindware's Bio-Lab, and Vital-Signs software was used to gauge the physiological symptoms of stress in participants (Guyll, Madon, Yang, Lannin, Scherr & Greathouse, 2013).

Throughout numerous seventy-five minute sessions 141 participants were assessed for signs of stress in various stages of interrogation proceedings. Participants were first assigned six logic puzzles to complete, three marked for individual completion and three others to be completed in a team setting. Each participant was also assigned to one of two possible conditions: guilty or innocent, respectively, in which they would or would not be pressured by a confederate to cheat on the individual logic puzzles (Guyll, et al., 2013). Shortly after turning in the cooperative and individual logic puzzles for scoring, participants were ushered into another room and informed that their answer on one of the individual logic puzzles matched exactly the answer submitted by their partner and the participant was accused of cheating. The researcher then asked the participant to sign a statement, ostensibly for documentation purposes, that was a pre-written admission of guilt (Guyll et al., 2013).

Participants were pressured up to three times if they refused to sign initially, with the researcher making clear that it was in the participants best interest to admit to what he or she had (or had not) done (Guyll et al., 2013). Regardless of whether the participant signed or not, participants were then immediately gauged for physiological symptoms of stress using the Bio-Lab software (Guyll et al., 2013). The stress levels of innocent participants were found to be initially lower than participants who were assigned the

guilty condition, but these levels rose, on average, as the interrogation procedure continued (Guyll et al., 2013).

This observation suggests that innocent participants were initially more secure in their innocence but became more aware of the potential consequences of their actions as the interrogation progressed (Guyll, et al., 2013). The collected data also indicated differences in the initial stress levels of participants suggesting that participants who were assigned to the innocent condition felt less imperiled and were therefore unlikely to take strong precautions to defend themselves against interrogations (Guyll, et al., 2013). In gauging the stress levels of participants, Guyll et al. assert that high stress interrogation proceedings can influence individuals to act in ways that he or she would normally not and that this propensity for irregular action is positively associated with the presence of stress during the interrogation procedure.

Psychopathy has long been thought to lessen or even mute the effects of stressors within the environment of the individual possessing the disorder (Lilienfeld et al., 2014; Patrick, 1994). Persons high in PCL-R F1, TriPM Boldness, and PPI-R FD have been shown to possess resilience to clinical stressors and unpleasant stimuli such as startle assessments (Lilienfeld et al., 2012; Patrick, 1994). It can therefore logically be extrapolated that individuals high in these traits and resistant to clinical simulations of stressful stimuli may show higher-than-normative resilience to stress in non-clinical settings. Such resilience might act as a veritable boon to those that work and live in high stress environments or may be virtually unknown and untapped until a stressful situation arises (Smith et al., 2013).

Stress Immunity

An interesting aspect of the factor or archetype of interpersonal adeptness is the presence of Stress Resilience. Although it is often also referred to by many different labels (Emotional Stability, Stress Immunity, etc.) Stress Resilience is a trait that psychopaths are "very sharply characterized by" when they test strongly for Factor One of the PCL-R (Sandvik, et al., 2015). To understand how anxiety and psychopathy intersect, the specificities of each factor of psychology (according to Hare's PCL-R) must be examined.

Individuals high in Factor One psychopathy or, as they are sometimes known, primary psychopaths, have consistently been shown to display lower levels of anxiety compared to those who score higher in secondary psychopathy, which is positively associated with higher-than-normal levels of anxiety (Lilienfeld et al., 2012; Sandvik, et al., 2015). The presence of high levels of stress resiliency within an individual may act as a critical component of that individual's success as he or she may be capable of withstanding greater environmental stress stimuli that are present in everyday life (Smith et al., 2013). Alternatively, individuals with extremely high levels of stress resiliency may find many of the positive consequences of stress absent within their experiences and this deviance may in turn lead to antisocial behavior (Smith et al., 2013).

Psychological resiliency is another way that psychologists and behavioral scientists measure the manner in which an individual who is high in psychopathy might process and adapt to stressful situations (Derefinko, 2014; Sandvik, et al., 2015). Resiliency stated concisely is the ability of an individual to maintain his or her composure during hardship (Sandvik, et al., 2015).

When psychologists evaluate individuals for hardiness they may use a three-dimensional method that evaluates an individual's *commitment, control,* and *challenge* scores. In the commitment evaluation, psychologists focus on an individual's sense of purpose and engagement (Sandvik, et al., 2015). To evaluate control, researchers assess an individual's locus of control in order to determine whether it is largely internal or external (Sandvik, et al., 2015). The third criteria that psychologists test for is a sense of challenge, or the ability of the subject to grow in the face of adversity (Sandvik, et al., 2015).

In order to test the presence of a stress immunity or stress resistance factor within psychopathy a research group collaborating from universities in Norway and the United States devised an experiment involving convicted persons within the Norwegian prison system. Researchers first administered the PCL-R to gauge the psychopathic levels of each individual and then administered tests to measure both anxiety and psychological hardiness of each individual using the Hospital Anxiety and Depression Scale and Dispositional Resilience Scale, respectively (Sandvik, et al., 2015).

The researchers found a slight negative association within experienced stress and Factor One psychopathy, measured using the PCL-R (Sandvik, et al., 2015). There was also an overall significant negative correlation between anxiety and psychological hardiness (Sandvik et al., 2015). No significant direct relationship was found between PCL-R Factor One or Two and anxiety (Sandvik et al., 2015). The researchers stated that while there was no significance found in a two-tailed test, a one tailed test yielded a significant negative correlation with PCL-R Factor One and overall anxiety (Sandvik et al., 2015).

Although it is difficult to conclusively state that there is any significant relationship between Factor One of the PCL-R and Stress Immunity using this data alone, the results recorded in this study suggest that anxiety is experienced differently and possibly less poignantly by individuals higher in Factor One of the PCL-R. This study is rather unique as the condition of psychological hardiness serves as a mediator between the factors of Stress Immunity or Resistance and Factor One, which may serve as the missing link between these two factors. Within this study alone, it seems that some preponderance of association between these two factors exists and further study is needed to illuminate the relationship, if any, between the two.

Individuals who present high levels of psychopathic traits have been characterized as appearing incapable of both anxiety and remorse (Derefinko, 2014). However, modern literature on the nature of psychopathy and its association with stress might be currently characterized as a highly divisive debate (Derefinko, 2014,). In order to test for the presence of stress resilience, researchers may introduce the presence of startle stimuli. Often taking the form of actions or pictures introduced to the participant in order to evoke some physical reaction, participants reacting to startle stimuli usually a blink or flinch away from the origin of the stimulus (Patrick, 1994). These stimuli are selected to cause the participant to produce an unfavorable reaction in response to the image usually by utilizing images of brutality or violence (Patrick, 1994). Participants in the general population, on average, responded to the negative stimuli by flinching away, fighting uncomfortably or otherwise reacting in an uncomfortable manner, while participants who scored high in psychopathy (assessed using the PPI-R) were less likely to react (Patrick, 1994).

Evidence was found that individuals high in psychopathy did show statistically significant variance in their reaction to the startle stimuli when compared to the general population (Patrick, 1994). Importantly, however, this variance was only present in relation to the negative stimulus. Individuals high in psychopathy expressed normative responses to the positive and neutral stimuli but were much less reactive when it came to the negative stimulus (Patrick, 1994).

Derefinko (2014) suggests that dividing the more common and overarching idea of anxiety down into the three facets of anxiety, fear, and constraint, might illustrate a clearer picture of psychopathic personality disorder. In her analysis, Derefinko characterizes anxiety as the purely psychological mindset and symptoms of anticipating a stressful situation and also suggests that fear and anxiety are distinct conditions that arise from the same stimuli; fear is the unconditioned response to the negative stimulus while anxiety is a conditioned response (Derefinko, 2014).

Constraint represents a physiological reaction to stress which can take the form of a flinch when danger is perceived, a startled gasp or step backwards or an orientation in the direction of the perceived negative external factor (Derefinko, 2014). Although these factors are indeed closely related their minute differences may be the key to the reconciliation of much psychological literature regarding the association of psychopathy and stress immunity (Derefinko, 2014).

Derefinko suggests that psychopaths are not merely stress immune in the sense that they do not recognize cues for anxiety, fear, and inhibition, but that psychopaths often respond to these cues in novel ways, a hypothesis supported in many ways by the work of Cleckly and Lykken (Derefinko, 2014). Derefinko found small negative

correlations between all three of her factors of stress (Fear, Anxiety, and Inhibition) and psychopathy Factor One as defined by the PCL-R (Derefinko, 2014). These correlations suggest that stress resistance may be a firm component of the construction of psychopathy but that some measure of stress resistance is present within most individuals who are high in PCL-R Factor One of psychopathy (Derefinko, 2014).

The association between a factor or factors of psychopathy and stress resilience may become clearer when alternative classifications of these factors are utilized. The Fearless Dominance component of the Psychopathy Personality Disorder- Revised (abbreviated PPI-FD) shows a strong relation to various conceptualizations of stress resilience (Lilienfeld et al., 2012).

The PPI-FD presents strong correlations with the TriPM Boldness factor and is positively correlated with many other traditionally-related psychopathic personality traits such as functional impulsivity or the tendency to "seize the moment", further enhancing its validity as an accurate depiction of psychopathy-related personality traits (Lilienfeld et al., 2012). Using PPI-FD to depict psychopathic personality traits greatly enhances the association between psychopathy and stress resistance. High levels of PPI-FD (among several other alternative conceptions of PCL-R Factor One) have consistently been shown to be negatively associated with startle stimuli that elicit physical responses in the general population (Lilienfeld et al., 2012; Patrick, 1994). PPI-FD also presents negative associations with aversive picture stimuli, skin conductance, and uncontrollable aversive noise stimuli (Lilienfeld et al., 2012).

Lilienfeld et al. (2012) characterizes those who score highly in PPI-FD as Emotionally Stable psychopaths who present low anxiety reactions to stressful stimuli.

Individuals high in PPI-FD are also noted as having statistically significant lower levels of anxiety, guilt, and empathy on average (Lilienfeld et al., 2012). Lilienfeld and colleagues propose that when examining traits that would traditionally comprise PCL-R Factor One, alternative operationalizations (such as the PPI-FD or TriPM Boldness) should be considered (Lilienfeld et al., 2014).

Current Study

Much of the current literature on psychopathy focuses on maladaptive traits and on psychopaths who have committed criminal offenses or who are likely to do so. Likewise, much of the current literature on mock interrogation procedures was conducted to illustrate how easily it is to manipulate an innocent suspect into confessing to a crime that they did not commit. The information that much of this literature presents is very compelling, but the missing pieces and gaps in the literature can be equally or even more so. While understanding the mindset and psychological schema of violence that an individual high in psychopathy might possess in a forensic setting is interesting and worthwhile, the presence of individuals in the same study who are also high in psychopathy but who do not present these same traits raises many new questions. This phenomenon persists in the mock interrogation literature where a researcher might find and report that a high percentage of participants falsely confessed under stressful situations, but individuals who were assigned the guilty condition withstood a commensurate amount of stress. The current study seeks to draw an association between individuals who are high in adaptive facets of psychopathy, specifically PPI-R Fearless Dominance, and individuals who can withstand high levels of stress in a mock interrogation setting. This association would demonstrate a rarely examined relationship

between adaptive conceptualizations of psychopathy and their real-world utilization in a forensic setting.

Method

Participants

Participants from a moderately sized Southeastern university participated in the study to satisfy course requirements. The final sample consisted of eleven participants with eight women and three men. Five participants identified as African American and six participants identified as White. The average age of the participants was 19.36 (*SD* = .67).

Design

Participants taking part in this study were randomly assigned to one of two experimental conditions. Participants were assigned to an innocent or guilty condition which dictated whether or not a confederate attempted to solicit the participant for assistance on a logic puzzle marked for individual use. Participants also completed three measures of psychopathy. Participants were further evaluated for physiological signs of stress during the interrogation phase using NeuLog monitoring software. Finally, participants were also evaluated by allowing them to report their own level of stress at the conclusion of the interrogation phase. This data, along with a participant's level of psychopathy was used to demonstrate a relationship between level of psychopathy and stress felt by the participant.

Measures

In order to measure the levels of psychopathy in each participant, three psychopathy self-report measures were used. The Triarchic Psychopathy Measure (Tri-PM), the Psychopathic Personality Inventory- Revised (PPI-R), and the Hare Self Report Measure (SRP). In order to gauge levels of stress throughout the experiment, NeuLog physiological software and monitoring equipment was employed to gather participant's heartrates at predetermined instances to create uniform measurement throughout all participants.

Hare Self-Report Measure (SRP). The Hare Self-Report Measure is the more accessible successor to the Psychopathy CheckList Revised (PCL-R). Often considered both the preeminent measurement of psychopathy as well as an industry standard in measuring the disorder (Neumann & Pardini, 2014). One major disadvantage of this measurement however, is that the PCL-R requires both a highly-trained interviewer as well as a criminal background check which is not well suited to gauging levels of psychopathy in a non-forensic population. Thus, the Hare Self-Report Measure was innovated to adapt the principles of the PCL-R into a self-report format that can easily be administered to participants that may not have past contact with the authorities (Neumann & Pardini, 2014). The Hare SRP employs a five-point Likert-type scale with a response of one signifying: "disagree strongly" and a response of five indicating: "agree strongly". While the Hare SRP follows the same two factor conceptualization of psychopathy as the PCL-R, the SRP contains four disparate categories that questions may address. Questions such as: "I'm a rebellious person" are used to measure the requisite lifestyle of the individual. Participants are asked to respond to statements such as "I have never been involved in delinquent gang activity" in order to measure antisocial tendencies within the

subject. Similarly, the method in which participants respond to statements such as "Most people are wimps" allows researchers to measure the adaptive tendencies (or lack thereof) in a participant, and finally, participant's responses to statements like "I have to pretend to be someone else in order to get my way" give researchers an insight to the interpersonal relations of the subject. Hare's PCL-R has both been shown to display "excellent construct validity" as well as elevated levels of internal and external validity as well as consistent reliability (Kelsey, Rogers, & Robinson, 2014). The Self-Report Measure is follows in this trend by featuring "acceptable to strong" internal validity and moderate to high correlation with other self-report measures such as the Levenson Self Report Model and the Psychopathic Personality Inventory- Revised (Kelsey, Rogers, & Robinson, 2014). The Cronbach's alpha for this sample was .72, indicating acceptable internal consistency.

Triarchic Psychopathy Measure. The Triarchic Psychopathy Measure (Tri-PM) offers an alternative conceptualization regarding psychopathy when compared to the PCL-R and SRP. The Tri-PM is a three-factor scale that stipulates psychopathy as a combination of Meanness, Disinhibition (Maladaptive and Antisocial traits, PCL-R Factor Two contemporaries) and Boldness (Adaptive Traits, PCL-R Factor One contemporary). Participants respond to statements using a Likert-type scale of four potential answers. The Tri-PM uses three categories of questions or statements in which a participant can indicate responses ranging from "True, Somewhat True, Somewhat False, and False". Statements such as "I am well equipped to deal with stress" were features in the Boldness category which was shown (especially in its shorter form) to correlate strongly with PCL-R factor one and PPI-R Fearless Dominance. The Disinhibition and

Meanness categories were characterized by statements such as: “I often act on immediate needs” and “I’ve injured people to see them in pain” respectively. These categories also evidence high structural validity and consistency with PCL-R factor two. The Cronbach’s alpha for this sample was .88, indicating good internal consistency.

Psychopathic Personality Checklist- Revised. The Psychopathic Personality Checklist- Revised (PPI-R) is a two (sometimes three) factor conceptualization of psychopathy that is presented in a self-report format to promote minimal strain on both the participant and researcher when gathering data. The PPI-R was conceived in order to be a more comprehensive psychopathy scale to measure both adaptive and antisocial factors of the disorder. The Psychopathy Personality Checklist- Revised Fearless Dominance (PPI-FD) factor is perhaps one of the most controversial and groundbreaking factors that attempts to define what has been established as a very controversial and nebulous disorder in its own right. The PPI-R is comprised of eight subscales: Machiavellian Egocentricity, Social Influence, Fearlessness, Cold-heartedness, Rebellious Nonconformity, Blame Externalization, Carefree Nonplanfulness, and Stress Immunity. Each of these subscales is associated with one of the PPI-R’s three primary factors: Fearless Dominance, Self-Centered Impulsivity, and Cold-heartedness (Cold-Heartedness is sometimes excluded depending on the target sample). Fearless Dominance, characterized by the stress immunity, social potency, and fearlessness traits, is represented by questions such as “I am easily flustered in high-pressure situations” wherein a high answer would negatively correlate with the strength of PPI-FD in an individual. Self-Centered Impulsivity is represented within the scale with questions such as: “I have always seen myself as something of a rebel”, and Cold-Heartedness is

represented with questions such as: “The injustices of the world anger me” (all Cold-Heartedness related questions are reverse scored in order to obtain a more accurate and reflective image of the test taker). Lilienfeld demonstrates a high level of construct validity as well as high levels of diagnosticity of the measure when compared to other measures of psychopathy including both the PCL-R, SRP, and Tri-PM (Lilienfeld et al., 2012) The Cronbach’s alpha for this sample was .86, indicating good internal consistency.

Measuring Stress. Stress is a physiological phenomenon that can manifest in physical symptoms, psychological symptoms or various combinations of the two (Derefinko, 2014). One of the common symptoms of psychological stress is reduced cognition, particularly in situations that would normally evoke heightened levels of anxiety within a subject (Derefinko, 2014; Kozena, Frantik, & Horvath, 1998). Chief among such situations are interrogations, where suspects may fear for their livelihood, future, or in extreme conditions even their lives (Scherr & Franks, 2015). As has been shown in numerous studies, mock-interrogations mirror their real-world counterparts closely and can evoke these same feelings of distress within participants (Scherr & Franks, 2015). In order to measure stress in this study, NeuLog physiological software was used to measure and observe changes in participant’s heart rate within various phases of the study. Heart rate has been shown to be an accurate indicator of stress within individuals in a number of real-world situations and clinical settings (Bourne & Rita, 2003; Kozena, Frantik, & Horvath, 1998). Therefore, statistically significant increases in heart rate can be assumed to indicate a similarly significant increase in participant stress. Participant’s stress was also measured using a self-report survey directly after the

interrogation phase and just before participants were debriefed. Participants rated their level of stress using a ten point Likert-type scale and had the opportunity to discuss their score with the researcher.

Procedure

Participants were directed into a room in which they completed three measures of psychopathy. Participants then received a baseline stress assessment using NeuLog physiological software over a two-minute period. Participants were then randomly assigned to one of two possible conditions: guilty or innocent. Participants solved a series of four logic puzzles to solve alongside a student confederate who, in the guilty condition, elicited aid from the participant despite written instructions to the contrary. Participants in the innocent condition were not requested for aid (Guyll et al., 2013). A researcher then collected the responses, in order to ostensibly check them for accuracy. The researcher then separated participants and confederates into separate examination rooms and accused the participant of breaking the rules. Participants were then interrogated with rising levels of urgency in order to elicit the initialing of a confession to breaking the rules. Participants were offered three chances to confess and after each chance, the potential consequences of the accusation were made to seem more serious. After the third chance to confess, participants were asked to complete another self report assessment of stress and were also asked how realistic they found the study. Participants then underwent a debriefing process in order to mitigate any unforeseen consequences or residual stress. The debriefing consisted of a series of questions and statements designed to reassure participants that there would be no lasting ramifications from their actions within the study as well as assess their levels of stress after all manipulation has ended.

This primarily consisted of an opportunity for students to express any thoughts or feelings they experienced during the study as well as a guided mindfulness exercise designed to return participants to a baseline emotional state by recounting their experiences during the day.

Results

Preliminary Analysis & Descriptive Statistics

Eleven participants were examined for a relationship regarding level of psychopathy and stress resilience; all analyses were performed using IBM's Statistical Package for the Social Sciences.

Participants underwent an experimental protocol designed to evoke psychological distress as a result of being accused of violating the rules on a logic problem. All participants were observed to express increased heart rate as a result of this protocol (M = 11.46; SD= 11.02). Participants were likely to confess, with 100% of participants randomly assigned to the guilty condition agreeing to initial the paper indicating that they broke the rules, and 66.6% of participants randomly assigned to the innocent condition choosing to confess.

Further analyzing participant emotional status during the study, participants reported a mean anxiety level of three out of five possible points, suggesting a moderate level of anxiety experienced (M = 3.00; SD = 1.27). This analysis was consistent with participants reporting moderate levels of distress when physically asked to initial a statement suggesting that they had violated the rules (M = 5.00; SD = 2.28). Most participants reported that they viewed the study with high levels of believability and

seriousness with 9.10 % of participants reporting that they "totally believed everything the researcher said," 18.20 % of participants reporting that they either thought that "The whole situation seemed very believable," that they "Thought this might be serious," or that they thought that "They might be in trouble here." Another 9.10% of participants reported that they "Didn't know what to think," while an additional 9.10% suggested that they "weren't sure what was going on." The final 18.20% stated that "I didn't really think, I just acted."

After the debriefing phase of the experiment, participants reported that they felt moderately to very relieved on average (M = 3.55; SD =1.21). Additionally, all participants reported some level of worry or anger regarding the experimental procedures, with 9.10 % reporting that they were "very worried," 27.30 % stating that they were worried but "figured that everything would work out in the end." An additional 27.30 % of participants stated that they "felt worried but tried not to show it" and 9.1% of participants suggested that they felt only a "little worried." In terms of anger, 9.10 % of participants reported that they either felt "a little angry," "felt angry, but tried not to show it," or felt "both worried and angry" respectively.

Hypothesis Testing

Psychopathy was not found to be significantly correlated with participant's heart rate change during the interrogation phase of the study. Controlling for baseline heart rate, we conducted a Pearson's Partial Correlational analysis and found a small nonsignificant relationship between a participant's level of psychopathy as measured by the Psychopathic Personality Inventory- Revised and heart rate increase in BPM, $r(10) = .14$, $p = .71$. An additional analysis was also performed using a Pearson's Correlational

analysis to determine the relationship between participants' levels of psychopathy and self-reported level of stress when asked to initial a confession $r(10)= -.46$, $p = .15$. This analysis revealed a nonsignificant negative moderate relationship between self-report psychological distress and participant's self-reported psychopathy level.

Discussion

Hypothesis & Implications

The current study attempted to examine relationships between levels of psychopathy and various conceptualizations of stress, both physiological and self-report in nature. Interestingly, though stress resilience, resistance or immunity is a common factor in various conceptualizations of psychopathic personality disorder, the present study found no strong relationship between physiological measures of stress (heart rate) and level of psychopathic personality and found only a nonsignificant moderate negative relationship between self-reported distress and levels of psychopathy. Various limitations of the current study may have accounted for such a lack of apparent relationship.

The results of the current study, while inconclusive, may replicate past literature in suggesting a relationship between Lilienfeld's PPI- Fearless Dominance and psychological distress. While no significant relationship between heart rate and psychopathy was found, participants did report less anxiety experienced during the duration of the study as their level of psychopathy increased. The moderately negative relationship observed in the current study seems to therefore follow the assertions of previous literature, in that individuals with psychopathic personalities are stress resilient by nature (Derefinko, 2014; Lilienfeld et al., 2014).

Limitations & Future Research

Though the current study is statistically inconclusive due to a lack of power, the relationship between higher levels of psychopathic personalities and stress resilience observed leads to interesting extrapolations. Individuals who possess these personality traits may be considered "socially potent" in that they can maneuver within social situations that might distress individuals lacking adaptive psychopathic traits (Lilienfeld et al., 2014). Such social potency might be fortuitous in a number of daily circumstances or vocations; from heart surgery to military applications, any situation where experiencing distress would be best avoided might set individuals with psychopathic personalities apart (Lilienfeld et al., 2014). However, to make these assertions, future research, absent the limitations of the current study, must be conducted and reviewed.

One circumstance which limited the power of the current study is the gendered nature of psychopathic personality disorder. Psychopathic traits are often found predominantly in male offenders or patients; women are not likely to be diagnosed with psychopathic personality disorder and there is even discussion that many psychopathic measures are less able to detect the presence of female psychopathic personalities when compared to their male counterparts (Murphy et al., 2016). As the current study had a predominantly female sample (72.25%) this may have inherently inhibited the validity of the measures used. The small sample size of the study also contributed to the unreliability of conclusions drawn from this data as correlational analyses tend to stabilize around 250 participants and our study had less than five percent of that figure (Schönbrodt & Perugini, 2013).

Other structural factors may have also contributed to the relative powerlessness of the current study. Aside from sample size concerns, due to IRB restrictions and concerns, our initial protocol was restricted in order to be less concerning to participants. Where the original protocol called for the researcher to accuse participants of cheating, our protocol was altered to suggest that participants had merely violated the rules of the logic problems, causing a "problem" with the study. This protocol may not have been dire enough to evoke the physiological reaction of interest needed to observe a relationship between psychopathic personality and physiological stress.

Individuals who possess psychopathic traits may possess higher levels of stress resilience than their non-psychopathic counterparts. These traits could potentially represent an inherent social advantage throughout the lifespan of an individual; psychoforensic situations are only one of many circumstances in which individuals who possess psychopathic traits might "out perform" their peers. More research is clearly needed in order to more fully understand this personality type and the advantages and disadvantages, as well as applications, that it represents.

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