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The Influence of a Biological Explanation of Psychopathy in the Courtroom

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THE INFLUENCE OF A BIOLOGICAL EXPLANATION OF PSYCHOPATHY IN THE
COURTROOM

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Abstract

Psychopaths are a troubling population for the general public and criminal justice system. Psychopathic patterns of antisocial behavior appear early in life and remain present for life (Hare, 2003). Most psychopaths are not violent or in prison. However, psychopaths are responsible for over half of all serious crimes (Hare, 1993; Hare, 2012; Slater & Pozzato, 2012; Babiak et al., 2012). Another troubling issue is that there is currently no established treatment for psychopaths, which prevents rehabilitation (Skeem et al., 2011). In the current study, mock jurors read a law case that involved a convicted defendant who was a diagnosed psychopath. The researcher's purpose was to determine if a biological explanation and brain scan imagery representative of psychopathy affected sentencing. The researcher also examined how jurors' psychopathy influenced sentencing. Participants who read testimony on a biological explanation for psychopathy and viewed brain scan images of the defendant's psychopathic brain doled out the least severe sentences of any condition.

Keywords: psychopathy, psychopath, self-report psychopathy, mock jurors

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The Influence of a Biological Explanation of Psychopathy in the Courtroom

Psychopathic criminals break the law at an earlier age, engage in a larger number of crimes, behave more violently throughout a crime, and are more criminally versatile than non-psychopathic criminals (Blackburn & Coid, 1998; DeLisi, 2009; Häkkänen-Nyholm & Hare, 2009). Psychopaths comprise only 1% of the general population and 15-25% of the prison population but they offend at a disproportionate rate (Hare, 2012; Slater & Pozzato, 2012; Babiak et al., 2012). They are responsible for over half of all serious offenses (e.g., murder, rape) and violent psychopaths can engage in horrific, devastating behavior (Hare, 1993). Two demonstrative examples would be Ted Bundy, prolific serial killer, and Eric Harris, one of the Columbine High School shooters who was the impetus for the event (Fulero & Wrightsman, 2009; Rule, 2009; Cullen, 2009). However, not all psychopaths are violent (Hare, 1993).

When people hear the term “psychopath” some common things that come to mind are serial killers, mass murderers, serial rapists, and other violent criminals (Dutton, 2012). The names of notorious psychopaths like Ted Bundy, Jeffrey Dahmer, and Dennis Rader (a.k.a. BTK Killer) may surface as well (Cullen, 2009). These concepts and infamous psychopaths only represent a small portion of psychopaths in general since most psychopaths are not violent or in prison (Hare, 1993; Babiak & Hare, 2006). Psychopaths are also not insane or unable to control themselves, although poor impulse control is a common feature of psychopathy (Häkkänen-Nyholm & Hare, 2009). Their cold reasoning may be disturbing but they are not crazed individuals who have no control over their actions. The aforementioned misconceptions are understandable since there is not universal agreement on what psychopathy is. Indeed, psychopathy is associated with a variety of definitions and descriptions (Skeem, Polaschek, Patrick, & Lilienfeld, 2011).

One of the most common conceptualizations of psychopathy is that of a personality disorder (DeLisi, 2009; Babiak & O' Toole, 2012). Out of all the personality disorders, psychopathy presents the most danger to other people (Babiak et al., 2012). In the personality disorder model, psychopaths are characterized by a number of personality traits and a lifetime history of antisocial and sometimes criminal behavior (Hare, 1993).

Psychopathic traits and patterns of antisocial behavior often appear early in life and remain present throughout a psychopath's lifespan (Hare, 1991; Hare, 2003). Psychopaths are described as deceptive, manipulative, persuasive, charming, grandiose, arrogant, antisocial, selfish, glib, severely lacking in empathy, remorseless, aggressive, and sometimes violent (Hare, 1993; Hare, 2003; Babiak & Hare, 2006; Melton, Petrila, Polythress, & Slobogin, 2007; Fulero & Wrightsman, 2009; DeLisi, 2009; Skeem et al., 2011; Hare, 2012; Smith, O'Toole, & Hare, 2012). Psychopaths may lack empathy and remorse but many are able to effectively feign them when they believe that it will influence others and allow them to avoid detection and trouble (O'Toole, Logan, & Smith, 2012; Babiak & O'Toole, 2012; Woodworth et al., 2012). Although psychopathy is often referred to as a personality disorder, it is not included as a diagnosable disorder in the *Diagnostic and Statistical Manual of Mental Disorders Fifth Edition (DSM-V)*, which is a manual clinicians use to diagnose mental disorders (American Psychiatric Association, 2013). Clinicians considered adding psychopathy as an individually listed disorder in the *DSM-V* but eventually decided against it (Babiak & O'Toole, 2012).

Psychopaths are known for grandiosity, arrogance, and boasting of accomplishments and credentials that are inflated or fictitious (Babiak & Hare, 2006). They may regularly voice ambitious aspirations that will never come to fruition (Babiak & O'Toole, 2012). There are some psychopaths, however, who find success in professions where they can be rewarded for

behaving aggressive, callous, and remorseless. Psychopaths can perform well as CEOs, corporate employees, lawyers, or surgeons (Babiak & Hare, 2006; Dutton, 2012). Nevertheless, most psychopaths are not highly successful. They live as social predators and parasites, taking what they want and draining others' resources (DeLisi, 2009). Once they have what they want, or they have sucked a person dry of all resources, they quickly move on to their next target (Babiak & O'Toole, 2012).

Most psychopaths are effective at blending in and avoiding the scrutiny of authorities, family members, and coworkers. They will create what is known as the *psychopathic fiction*, which is an attractive, false-face that they wear to conceal their true nature (Hare, 1993; Babiak & Hare, 2006; Babiak & O'Toole, 2012). The mask is very convincing and persuasive, and few people will see beneath it (Hare, 1993). However, psychopaths sometimes reveal their predatory nature accidentally or purposefully when in the presence of someone they do not judge to be a valuable target for exploitation (Babiak & Hare, 2006). In other words, they do not bother to charm people who they deem worthless. Psychopaths are effective charmers because they quickly learn what people like and crave. This enables psychopaths to customize their personality and interests to match those of their targets (Babiak & O'Toole, 2012).

One may be amazed to discover how likable psychopaths are upon meeting them. An individual may find that they share most or all of the same common interests with a psychopath (Babiak & Hare, 2006). Psychopaths often make a positive first impression (Babiak et al., 2012) and can appear to be the ideal candidate during occupational interviews (Babiak & Hare, 2006; Babiak & O'Toole, 2012). All of these things make them likable and desirable which enables them to better deceive and manipulate in order to gain access to a target's possessions and resources. Eventually, their cold, aggressive, and antisocial characteristics usually come out.

Psychopaths suddenly vanish and move on to the next target and possibly an entirely new state, city, or country after a human resource dries up or their antisocial behavior is exposed (Babiak & Hare, 2006). Of course, if a psychopath feels that their true nature has been compromised and may be revealed to others, they may choose to permanently dispose of an individual (Babiak et al., 2012).

Psychopathy has a long history of being a categorical diagnosis. That is, someone would be categorized as a psychopath or not a psychopath based upon his or her score on a psychopathy assessment tool (Skeem et al., 2011). Psychopathy is still commonly referred to as a personality disorder within the literature but modern conceptualizations have largely moved away from a categorical operationalization and towards a dimensional one (Blackburn & Coid, 1998; DeLisi, 2009; Skeem et al., 2011). Modern research places psychopathy on a continuum (Babiak et al., 2012). Categorical psychopaths (i.e., persons who score a 30 or higher on the PCL-R) are quite rare (Hare, 1993; Hare, 2003). Operationalizing psychopathy as a continuously measured construct rather than a categorically measured one allows researchers to study a larger group of antisocial individuals in a variety of contexts (DeLisi, 2009; Skeem et al., 2011). The construct is no longer limited to only the most severely antisocial and violent psychopathic persons.

Researchers and clinicians still commonly refer to people as psychopaths but there is now a greater preference to refer to individuals as psychopathic. That is, someone is lowly, moderately, or highly psychopathic. Most modern researchers now typically refer to psychopathy as a clinical or personality construct and label individuals as highly psychopathic (instead of as psychopaths). This shift will likely cause confusion for a great number of people, especially those in the criminal justice system who are unlikely to be current on the psychopathy literature. For example, triers of fact (i.e., judges, jurors) may not understand that describing

someone as psychopathic is not equivalent to labeling them as a psychopath since they may present a low degree of psychopathic traits and behaviors. In fact, there is documentation of court cases where a judge mistook a forensic examiner's interpretation of a PCL-R score and usage of the word "psychopathic" to mean that an examinee was a psychopath (Melton et al., 2007).

There are several areas in the brain that have been linked with psychopathy. Psychopaths appear to have abnormal neurological structuring and functioning, such as in the amygdala (Yang, Glenn, & Raine, 2008; Raine, 2013). They may behave similarly to individuals that have brain damage but psychopaths do not typically have brain damage. However, individuals who sustain brain damage (e.g., frontal lobe damage) may begin to manifest psychopathic behaviors and traits, though they would not be considered full psychopaths (Hare, 1984). Two of the main brain areas that are associated with psychopathy are the prefrontal cortex and the amygdala (Hare, 1984; Weber, Habel, Amunts, & Schneider, 2008).

The prefrontal cortex may be related to decision-making, planning for the future, and inhibition (Weber et al., 2008). Deficits in the prefrontal cortex of psychopaths might play a role in psychopaths' impulsiveness, lack of responsibility, and shoddy decision-making (Yang, Glenn, & Raine, 2008).

The amygdala is associated with empathy, threat detection, and fear learning (Weber et al., 2008). Yang, Glenn, and Raine (2008) report deficits in psychopaths' amygdalae which possibly provides evidence for why so many psychopaths are seemingly unable to adhere to social expectations and laws, and think and behave morally.

The most widely used measure of psychopathy is the Psychopathy Checklist-Revised (PCL-R). The PCL-R provides researchers and clinicians with an objective test that quantifies

and helps describe psychopathy (Hare, 2003). Clinicians and researchers better understood what someone meant by the term *psychopath* (i.e., an individual who scored a 30 or above on the PCL-R) after the PCL-R's creation (Hare, 1985; Hare, 2003). The PCL-R Manual also provided clear evidence that psychopathy is not equivalent to antisocial personality disorder (APD) (Hare, 2003).

Psychopathy and antisocial personality disorder is not the same thing even though there is some overlap between the two constructs (Hare, 2003; Skeem et al., 2011). A diagnosis of APD is principally based on a documented history of antisocial and law-breaking behavior (American Psychiatric Association, 2013). It fails to incorporate all of the personality characteristics that are associated with psychopathy and ignores the fact that many psychopaths abstain from illegal activities, or at least avoid being caught (Hare, 1985). Valid psychopathy measures actually fail to correlate with APD to the degree that would be expected if the constructs were equal (Skeem et al., 2011). APD is also not as effective as psychopathy at predicting future violence (Melton et al., 2007).

The PCL-R has a score range of 0-40. Each item on the PCL-R is scored 0-2; depending on how present a psychopathic quality is in an examinee. Typically, an examinee is deemed a psychopath if they score a 30 or above (Hare, 2003). However, researchers and clinicians sometimes use a cutoff score of 25 (Skeem et al., 2011). Very few individuals will score a 30 or above, and it is extremely unlikely that someone will score a 40. In fact, the PCL-R Manual states that the average score for North American male prisoners is 22.1 (Hare, 2003; Skeem et al., 2011). The PCL-R was originally normed on prison populations (Hare, 1984; Hare, 1991; Hare, 2003). Most of the research on the PCL-R and the construct of psychopathy are predominantly based on research that used prison inmates as participants; however, recently,

there has been more emphasis on examining PCL-R measured psychopathy in non-incarcerated populations (Hare, 2003; Skeem et al., 2011).

The PCL-R was considered to be made up of two factors: Personality traits (factor 1) and antisocial behaviors (factor 2). The test is still commonly described as having two factors in many domains (e.g., legal) but research has demonstrated that it really consists of 4 factors: affective, interpersonal, lifestyle, and antisocial. Factor scores may be reported but clinicians and forensic examiners typically only include the total PCL-R score in their reports and testimony (DeMatteo et al., 2014). There are restrictions and guidelines for who can administer the PCL-R.

According to the PCL-R manual, the PCL-R must be conducted by a highly-trained individual who has a master's degree or higher, experience with forensic populations, and who has taken one of Robert Hare's PCL-R workshops (Hare, 2003). The assessment consists of a semi-structured interview and a review of personal history and records. It takes several hours to conduct the examination and it should be split up into several days. Spreading the testing out over multiple days allows for the examiner to observe how consistently the examinee's displayed affect, answering, and interpersonal behavior are. Psychopathic individuals are known for being pathological liars. Consequently, a highly psychopathic person's answers may frequently change (Hare, 1993; Hare, 2003). This is one reason why it is so important to have access to all of the examinee's pertinent personal records (e.g., education background, criminal history, medical history, misconduct reports). Having these records gives the examiner a means of conceptualizing how psychopathic an individual is, as well as a way to determine how consistently and honestly an examinee answers when questioned. Remarkably, psychopathic

individuals will lie and deny the veracity of information even when directly presented with hard evidence that contradicts their statements (O'Toole et al., 2012).

The PCL-R dominates the field of psychopathy and is often referred to as the “gold standard” of measuring psychopathy (Paulhus & Williams, 2002; Williams, Paulhus, & Hare, 2007; Skeem et al., 2011). Other measures of psychopathy have been developed but none have come close to the popularity, reliability, and validity of the PCL-R (Williams et al., 2007; Skeem et al., 2011). The instrument is not only popular with psychopathy researchers but has also been heavily used within the criminal justice system (Melton et al., 2007).

Psychopathy is an excellent predictor of violent and nonviolent recidivism (Hare, 1999; Melton et al., 2007; Fulero & Wrightsman, 2009; Porter, Brinke, & Wilson, 2009; Freeman & Samson, 2012). As such, the PCL-R is commonly used in legal proceedings for risk assessments (Vitacco, Neumann, & Pardini, 2014). A high score on the PCL-R, especially 30 or higher, indicates a high chance of recidivism. In a recent case law review of 348 cases from 2005-2011 that involved the PCL-R, DeMatteo et al. (2014) found that the PCL-R is so commonly used and respected within the courts that the admissibility of PCL-R findings is infrequently challenged, and that these challenges usually fail. They also discovered that there has been a drastic increase in the appearance of the PCL-R in court cases since 2005, and that this trend shows no signs of changing. A common area that this psychopathy measure is used is for parole hearings.

Parole boards hold hearings to determine if an individual should be released into society. Such hearings should not be taken lightly, particularly when it comes to persons that have long histories of violent criminal behavior, as many psychopaths do (DeLisi, 2009; Babiak et al., 2012). Not only is the PCL-R commonly used for parole hearings but also it is required for

parole hearings concerning individuals who were sentenced to life with parole in California (DeMatteo et al., 2014). It may be advisable for more states to make this a requirement.

Psychopaths are successful at getting early releases from parole boards even when they have lengthy criminal histories (Häkkinen-Nyholm & Hare, 2009). It is likely that psychopathic persons accomplish this by employing their notable manipulation, charm, and persuasion skills. Some psychopathic individuals are able to genuinely cry when they think it is appropriate, and they have been known to do this with effective results when in front of parole boards (Woodworth et al., 2012). Psychopathic offenders also receive lighter convictions (e.g., manslaughter instead of murder) and enjoy a higher rate of successful appeals to higher courts than non-psychopathic offenders (Häkkinen-Nyholm & Hare, 2009). Porter et al. (2009) reported that highly psychopathic criminals had a 2.5 times greater likelihood of securing early release than non-psychopathic criminals. Consistent with other research (Häkkinen-Nyholm & Hare, 2009), psychopathic offenders obtained earlier release than non-psychopathic offenders even though the parole boards were aware that the psychopathic offenders had longer criminal histories and a greater chance of recidivating (Häkkinen-Nyholm & Hare, 2009; Porter et al., 2009).

Currently, there is no established treatment for psychopaths (Skeem et al., 2011). There is limited research on treatment of psychopathy for a few reasons. Firstly, all attempts to treat psychopaths have failed, and this has created a stereotype that all psychopaths are untreatable. Secondly, clinicians do not want to treat psychopaths. Understandably, they would prefer to avoid working with such difficult, manipulative, unpleasant, and combative clients (Skeem et al., 2011). Thirdly, there is evidence that treating psychopaths actually makes them worse. Psychopaths who took part in a therapeutic community designed for psychopathy treatment

recidivated at a higher rate than psychopaths who did not undergo treatment (Rice, 1997).

Psychopaths who received treatment may have learned how to better fake empathy, increasing their ability to deceive and manipulate (i.e., making them more dangerous).

Recently, there has been a shift in the field towards measuring psychopathy in the general population rather than prison and forensic populations (Williams et al., 2007; Skeem et al., 2011; Freeman & Samson, 2012; Vitacco et al., 2014). A large reason for this has been the development of reliable and valid self-report psychopathy scales. The PCL-R is costly, takes several hours to administer, requires an extensive review of an individual's life history, and it can only be dispensed by a highly trained individual. Additionally, it is difficult to obtain all the necessary records outside of a prison or forensic hospital. Self-report psychopathy measures are more cost and time efficient, and they can be completed online (Williams et al., 2007). The Self-Report Psychopathy scale (SRP-III) is one such measure that has proven to be reliable, valid, and similar to the PCL-R (Paulhus, Hemphill, & Hare, in press).

In criminal, college student, and community populations, the SRP-III has been shown to be a valid measure of PCL-R-measured psychopathy (Paulhus & Williams, 2002; Williams, Nathanson, & Paulhus, 2003; Williams et al., 2007; Mahmut & Menictas, 2011). Vitacco et al. (2014) were the first to discover that the SRP-III is an effective predictor of violent (e.g., murder, robbery, assault) and nonviolent, serious offenses (kidnapping, burglary) in a community sample of males. Additionally, the SRP-III sufficiently corresponds with the four-factor structure of the PCL-R (Williams et al., 2007; Paulhus et al., in press).

The SRP-III is composed of 64 questions. Participants answer each question by using a 5-point Likert scale (1 = Disagree Strongly, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Agree Strongly) to indicate how much each statement applies to them. The questions can be grouped

into four separate factors that relate to psychopathy: Interpersonal Manipulation (IPM), Callous Affect (CA), Erratic Life Style (ELS), and Anti-Social Behavior (ASB). Scores may be reported as total scores or as factor scores. The SRP-III measures psychopathy dimensionally rather than categorically (Freeman & Samson, 2012; Paulhus et al., in press). Therefore, it does not categorize individuals as a psychopath or non-psychopath. Instead, it describes individuals as having a high or low amount of psychopathic characteristics. Similar to the PCL-R, males tend to score higher than females on the SRP-III (Hare, 2003; Freeman & Samson, 2012; Paulhus et al., in press). The SRP-III has also revealed that psychopathic individuals make up approximately 1% of the population within a community (Freeman & Samson, 2012). This coincides with other evidence that psychopaths are estimated to account for 1% of the general population (Hare, 1993; Babiak & Hare, 2006).

In summary, the SRP-III is a reliable and valid measure of psychopathy in college student populations. Psychopathic individuals appear to answer accurately on the measure since participating in an experiment does not present any risk of criminal punishment (Freeman & Samson, 2012; Vitacco et al., 2014). Although it is a relatively new psychopathy measure, it shows great promise. Using the SRP-III in college student and other non-criminal populations will allow for advancement and clarification on what is and is not part of the psychopathy construct outside of criminality.

The current study is a replication and extension of a study carried out by Aspinwall, Brown, and Tabery (2012). Participants in the Aspinwall et al. (2012) study were 181 U.S. state trial court judges. The judges read a hypothetical law case and anonymously answered survey questions online. The case involved a defendant that was diagnosed as a psychopath. The defendant broke into a Burger King to steal money from the cash register. He then repeatedly hit

the Burger King manager in the head with a gun. The manager sustained permanent brain damage from the attack. The defendant admitted to these actions and showed no remorse for them. In fact, the defendant bragged about what he did to the manager. The judges were informed that the defendant was convicted for aggravated assault and battery during the guilt phase of the trial. The judges were asked to determine appropriate sentencing for the defendant (Aspinwall et al., 2012).

Random assignment placed judges in either the *prosecution condition* or *defense condition* and *biological explanation present condition* or *biological explanation absent condition* (Aspinwall et al., 2012). In the *prosecution condition*, the prosecution presented all the information about the defendant's psychopathy. The prosecution contended that the evidence regarding the defendant's psychopathy should be considered as aggravating, because the defendant was unrepentant and likely to recidivate since he was a psychopath. In the *defense condition*, the defense was the one who provided all the information pertaining to the defendant's psychopathy. The defense contended that the evidence regarding the defendant's psychopathy should be considered as mitigating since the defendant's psychopathic brain prevented him from being in full control of his actions and caused his abnormal thinking (Aspinwall et al., 2012).

All the judges read testimony from a psychiatrist that explained what psychopathy is and stated that the defendant was a diagnosed psychopath. Only the judges in the *biological explanation condition* read additional testimony from a neurobiologist that provided a biological explanation for how psychopathy develops and leads to psychopaths not being able to comprehend right from wrong as normal people do. This explanation centered on how low MAOA activity and abnormal amygdala functionality result in psychopaths' antisocial thinking and behavior (Aspinwall et al., 2012).

Aspinwall et al. (2012) found that judges were influenced by the biological explanation of psychopathy. Presenting party (prosecution or defense) did not significantly affect the length of the sentences given by the judges. Overall, judges in the *biological explanation condition* provided shorter sentences for the defendant. Judges in all conditions provided sentences to the defendant that surpassed their personally reported average sentence given for aggravated assault and battery in real life. This suggests that judges, on average, consider psychopaths to be more deserving of longer sentences than non-psychopaths that commit the same crime.

Aspinwall et al. (2012) examined the judges' verbal reasoning for their provided sentences. The examination revealed that the judges generally considered the biological underpinnings of psychopathy to make the defendant less guilty since he lacked impulse control.

Aspinwall et al. (2012) listed the following quote as an example of one judge's reasoning behind his consideration of the defendant as being less culpable due to psychopathy:

The evidence that psychopaths do not have the necessary neural connections to feel empathy is significant. It makes possible an argument that psychopaths are, in a sense, morally 'disabled' just as other people are physically disabled. I have received and considered such evidence in past trials (p. 847).

In the current study, mock jurors served in place of judges. The hypothetical law case remained the same but there were three main changes to the testimony that participants received. Firstly, the *DSM-V* was listed in the psychiatrist's testimony, rather than the *DSM-IV-TR*, which was listed in the original experiment's testimony. Secondly, the neurobiologist's testimony was extended for participants that were in the *biological explanation plus brain scan imagery condition*. The extended testimony incorporated a brain scan image that presented a side-by-side comparison of the defendant's psychopathic brain and a normal (non-psychopathic) brain. The

psychopathic brain image depicted reduced activity in the prefrontal cortex and was compared to a picture that displayed a normal-functioning prefrontal cortex. The neurobiologist succinctly explained which cognitive functions the prefrontal cortex was involved with, and how these functions were impaired in psychopaths as a result of them having dysfunctional prefrontal cortices. Thirdly, participants answered different questionnaires than those used in the original study and also filled out self-report psychopathy scales, which the judges did not do.

This study involved measuring psychopathy in mock jurors. The psychopathy literature lacked any studies that directly measured psychopathy in jurors, via self-report or clinical assessment (i.e., PCL-R). Prior to this study, it was unknown how psychopathy affected the decision-making of a juror. The participant pool (i.e., general psychology students) for the current study was appropriate since all the participants were eligible to serve as jurors for a real law case. The current study corrected the psychopathy literature's lack of assessment of psychopathy in jurors and expanded upon the literature that focused on measuring psychopathy outside of prison populations. Additionally, this study demonstrated how a biological explanation of psychopathy and brain scan imagery representative of psychopathy affected jurors' verdicts.

It was predicted that participants who scored high on the SRP-III would, on average, give less severe sentences to the defendant. Psychopaths frequently blame their victims for what happens to them and have no concern for any harm that the victim undergoes (Fulero & Wrightsman, 2009; O'Toole et al., 2012; Babiak et al., 2012). It was predicted that high SRP-III scorers would be likely to blame the injured victim in the case. Perhaps such scorers would not answer in this manner since psychopaths tend to be self-centered and show no loyalty in situations where it will not in some way benefit them.

It was predicted that participants who read testimony that covered a biological explanation for psychopathy would, on average, give less severe sentences to the defendant. It was also predicted that participants who read testimony on a biological explanation for psychopathy and viewed brain scan imagery of the defendant's psychopathic brain in comparison to a non-psychopathic brain would, on average, dole out the least severe sentences to the defendant.

Method

Participants

One hundred and thirty-eight undergraduate students from the University of Central Oklahoma partook in this study. Participants received partial credit for a general psychology class requirement after participating in this study. Participants' mean age was 19.68 years. The ethnicity of the sample was 69.8% White, 12.2% Black, 6.5% Other, 5.8% Asian, and 5.8% Native American.

Materials

Participants read court testimony and case facts and then completed the following online surveys: Mock Juror Questionnaire, Self-Report Psychopathy scale (SRP-III) (Paulhus et al., in press), Short Dark Triad (SD3) (Paulhus & Jones, 2011; Jones & Paulhus, in press), Need for Cognition (Cacioppo, Petty, Kao, & Rodriguez, 1986), and Need for Closure (Kruglanski, Atash, De Grada, Mannetti, & Pierro, 1986). All testimony and case facts came from the study done by Aspinwall et al. (2012). The brain scan images came from *The Anatomy of Violence: The Biological Roots of Crime* (Raine, 2013).

Procedure

Participation took place entirely online through Qualtrics Survey Software, which is

accessible at Qualtrics.com. Consenting participants were instructed to act as if they were a juror for a real trial during the sentencing phase. Participants read the hypothetical case used by Aspinwall et al. (2012). All participants read the case facts, information about the guilt phase of the trial that already took place, and testimony on the defendant's psychopathy diagnosis. Participants in the *biological explanation condition* read additional testimony that provided a biological explanation of psychopathy. Participants in the *biological explanation plus brain scan imagery condition* read additional testimony that provided a biological explanation of psychopathy and then viewed brain scan imagery that compared the defendant's psychopathic brain to a normal (non-psychopathic) brain. These participants also read an explanation of the brain scan. Briefly, the explanation concerned which cognitive functions the prefrontal cortex was associated with, research demonstrating that psychopaths have reduced activity in the prefrontal cortex, and the behavioral implications of having reduced activity in the prefrontal cortex.

Participants were randomly assigned to the *prosecution condition* or *defense condition*, which determined if the prosecution or defense was the one presenting the case information. The prosecution contended that the evidence regarding the defendant's psychopathy should be considered as aggravating, and the defense contended that the evidence regarding the defendant's psychopathy should be considered as mitigating. After reading all the case information, participants answered questionnaires. A description of the questionnaires follows. The Self-Report Psychopathy Scale (SRP-III) (see: Appendix B) is a scale that measures psychopathy in college student populations (Paulhus et al., in press). The Short Dark Triad (SD3) (see: Appendix N) is a self-report scale that measures Machiavellianism, narcissism, and psychopathy in college student populations. The psychopathy portion of the SD3 was the only part used for

this study. The Mock Juror Questionnaire first asks participants to provide what they consider to be an appropriate sentence for the defendant (see: Appendix A). It then asks participants questions relating to the reasoning behind the provided sentence, attitude certainty, demographics, personal history, and how the participant perceived the defendant based upon the information they read (see: Appendix A). The Need for Cognition (NFC) (see: Appendix K) is a scale that measures how much someone likes to think. The Need for Closure (NFC) (see: Appendix L) is a scale that measures how much someone needs closure (i.e., how much they need an answer for everything at all times).

Participants read expert testimony from a psychiatrist who said that the defendant had been diagnosed as a psychopath. The first independent variable was presenting party condition (*prosecution, defense*). Some participants read a case script that had the prosecution arguing that the defendant's psychopathy was an aggravating factor, and should be factored into the verdict. The prosecution argued that being a psychopath made the defendant likely to reoffend. Some participants read a case script that had the defense arguing that the defendant's psychopathy was a mitigating factor. That is, due to the defendant's abnormal brain, he could not help having a lack of impulse control and empathy for others. The second independent variable was experimental condition (*control, biological explanation, biological explanation plus brain scan imagery*). Participants in the *biological explanation condition* and *biological explanation plus brain scan imagery condition* read testimony from a neurobiologist that discussed the biological basis for psychopathy, the development of psychopathy, how psychopaths have abnormal amygdalae, and the implications of psychopaths' brain abnormalities. Participants in the *control condition* only read testimony regarding the defendant's psychopathy diagnosis.

All participants were told what an average sentence for assault and battery in the state of

Oklahoma was since that is what the defendant was convicted for. Participants had to decide what they believed was an appropriate sentence for the defendant. A text box was provided for the participant to describe why they chose the sentence that they did, and list what factored into their judgment. Following the study's completion, participants were thanked for their participation and debriefed.

Results

A 2 X 3 ANOVA analyzed the effects of presenting party condition (*prosecution, defense*) and experimental condition (*control, biological explanation, biological explanation plus brain scan imagery condition*) on juror sentencing. There was no main effect of presenting party, $F(1, 132) = .023, p = .880, \text{partial } \eta^2 = .000$. There was a main effect of experimental condition, $F(2, 132) = 3.703, p = .027, \text{partial } \eta^2 = .053$. There was no significant interaction between experimental condition and presenting party, $F(2, 132) = .435, p = .648, \text{partial } \eta^2 = .007$.

Results for the three experimental conditions were further examined via pairwise comparisons. Pairwise comparisons demonstrated that the main effect of experimental condition indicated that participants in the *biological explanation plus brain scan imagery condition*, as compared to participants in the *control condition* and *biological explanation condition*, tended to give the least severe sentence to the defendant ($M = 4.69, SD = 1.68$). There was not a significant difference between the *biological explanation plus brain scan imagery condition* and *control condition*, and there was not a significant difference between the *control condition* and *biological explanation condition*. However, participants in the *control condition*, on average, gave the second least severe sentence to the defendant ($M = 5.20, SD = 1.96$). Participants in the *biological explanation condition*, on average, gave the most severe sentence to the defendant (M

= 5.84, $SD = 2.18$). There was no main effect of presenting party; however, means for the *prosecution condition* and *defense condition* within each experimental condition can be seen below in *Figure 2*. The means for sentence given in the *prosecution condition* and *defense condition* within each experimental condition varied minimally.

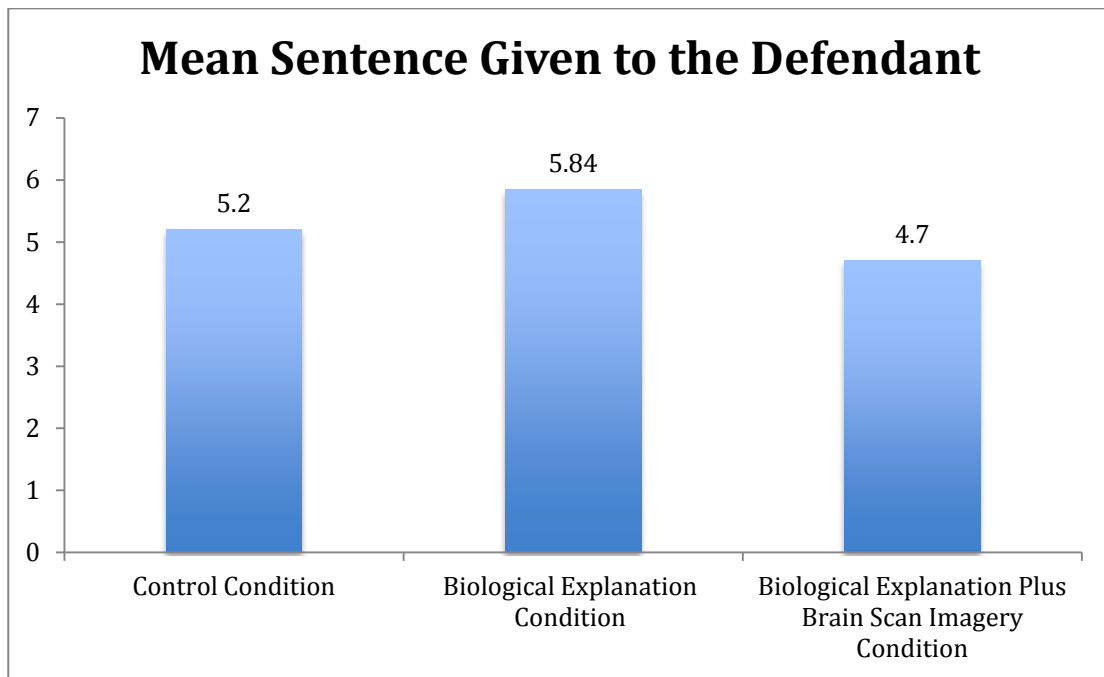


Figure 1. Mean Sentence Given to the Defendant Within Each Experimental Condition

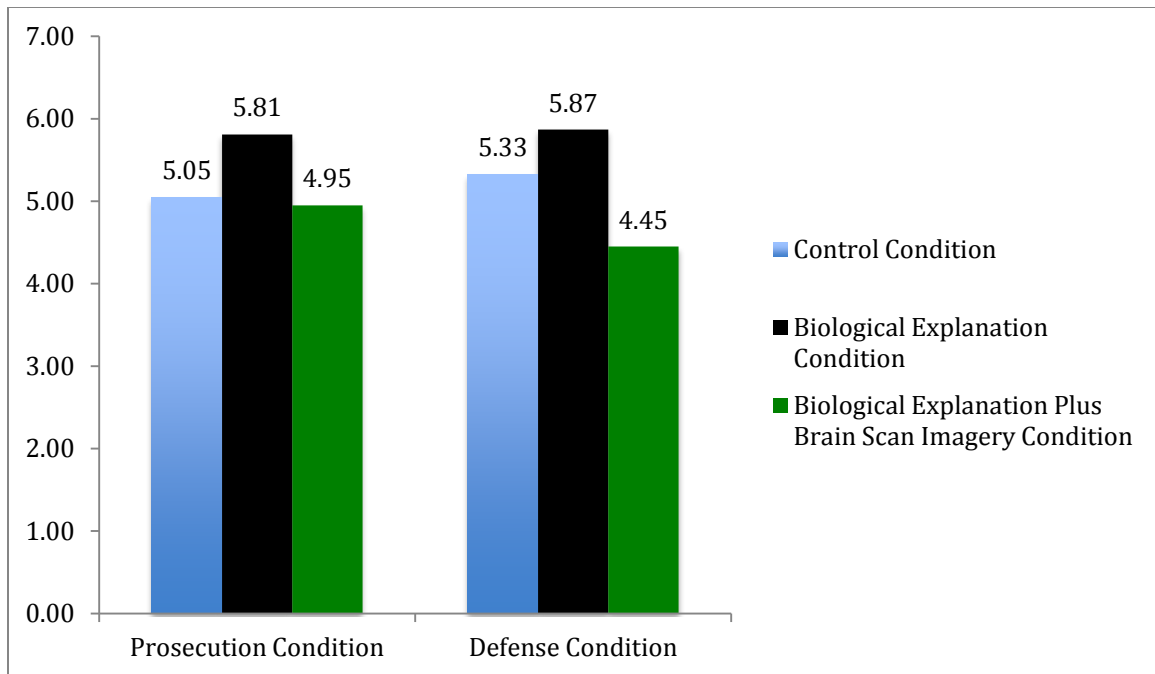


Figure 2. Mean Sentence Given to the Defendant Within Each Experimental Condition and Within Each Presenting Party Condition

Pearson's r correlation coefficients were calculated. Correlations were considered significant with a p value of .05 or less. The data analysis revealed a variety of significant correlations. Disconfirming what was predicted, there was not a significant relationship between SRP-III total score and sentence given, $r = .12$, $p = .174$. There was a significant relationship between SRP-III total score and how much participants believed that the victim in the case deserved the brain injury, $r = .24$, $p = .004$. There was a significant relationship between SRP-III total score and how guilty participants reported the defendant was, $r = -.23$, $p = .007$. There was a significant relationship between SRP-III total score and how innocent participants reported the defendant was, $r = .29$, $p = .001$. There was a significant relationship between SRP-III total score and how likable participants reported the defendant was, $r = .21$, $p = .015$. There was a significant relationship between SRP-III total score and SD3 total score, $r = .80$, $p = .000$. There was not a significant relationship between SRP-III total score and Need for Closure total score, r

= -.05, $p = .53$. There was not a significant relationship between SRP-III total score and Need for Cognition total score, $r = .04$, $p = .67$. There was a significant relationship between Need for Closure total score and Need for Cognition total score, $r = .41$, $p = .000$.

Discussion

The significant relationship between SRP-III total score and SD3 total score is reasonable since both are self-report measures of psychopathy. There was no significant relationship between SRP-III total score and Need for Closure total score or SRP-III total score and Need for Cognition total score. This study was the first to compare these scales with the SRP-III. The significant relationship between Need for Cognition total score and Need for Closure total score may indicate that the more people feel the need to think, the more they feel the need for closure.

It was predicted that participants who scored higher on the SRP-III would give less severe sentences to the defendant. The reasoning for this prediction was that high scorers on the SRP-III would blame the injured victim in the case since psychopaths often blame their victims (Fulero & Wrightsman, 2009; O'Toole et al., 2012; Babiak et al., 2012). This prediction was not supported since there was no significant relationship between SRP-III total score and sentence given. It may be the case that the more psychopathic participants saw no personal benefit to siding with the defendant and attributing the blame to the victim. Perhaps they chose the socially acceptable response and blamed the defendant. It is also possible that more psychopathic participants thought that the defendant did not deserve a lesser sentence because he was careless enough to get caught.

The relationship between SRP-III total score and how much participants believed that the victim in the case deserved the brain injury indicated that as psychopathy increased so did the tendency to blame the victim. The relationship between SRP-III total score and how guilty

participants reported the defendant was suggested that as psychopathy increased, the participant's tendency to find the defendant guilty decreased. Likewise, the relationship between SRP-III total score and how innocent participants reported the defendant to be implied that as psychopathy went up so did a participant's tendency to find the defendant innocent. The relationship between SRP-III total score and how likable participants reported the defendant was indicated that as psychopathy increased so did the tendency for a participant to find the defendant likable. The researcher took these findings to imply that it is possible that the more psychopathic a participant was the more likely they were to find the convicted psychopathic defendant likable and less guilty, and to blame the victim for the injury that they received.

It was also predicted that participants who read testimony that covered a biological explanation for psychopathy would give less severe sentences to the defendant. This prediction was not supported. Participants in the *control condition* gave less severe sentences than the participants in the *biological explanation condition*. It is possible that the *biological explanation condition* participants gave more severe sentences since they thought that the permanent biological nature of psychopathy made the defendant more likely to reoffend. However, this seems unlikely since the biological explanation was included alongside the brain scans in the *biological explanation plus brain scan imagery condition*. Although, juries have been known to be more lenient in sentencing in cases that were otherwise open-and-shut until brain scan imagery and related testimony concerning an allegedly violent defendant's brain was provided during trial (Raine, 2013). However, it is unknown if and how the brain scan imagery and related testimony influenced the jurors' verdict. In fact, prior to the current study, there was no empirical evidence that demonstrated that brain scan imagery of a psychopathic defendant's brain could influence jurors' decision-making.

The final prediction was that participants who read testimony on a biological explanation for psychopathy in addition to viewing brain scan imagery of the defendant's psychopathic brain in comparison to a non-psychopathic brain would dole out the least severe sentences of any condition. This prediction was supported. This finding can provide something new to the psychopathy literature since such a result has not been found before. It is an exciting but troubling finding. The psychopathy literature has had a huge increase in the number of studies relating neuroscience and psychopathy in the past decade. At this time, there are only correlational links between various brain structures and functions and psychopathy. Until there is a cause and effect relationship established, it may be unethical and dangerous to present psychopathy-related neuroscience in court. It is possible that most jurors will not have the scientific background to understand the difference between correlation and causation. Additionally, if a judge, opposing expert witness, trial consultant, or attorney lacks understanding of the psychopathy literature and the difference between correlation and causation, an expert witness may make unfounded and unethical claims concerning what brain scan imagery reveals about a psychopathic defendant's brain. Such claims could easily influence jurors and judges.

Future researchers should attempt to replicate the results of the current study. There should also be a determination of how manipulating crime type affects jurors' sentencing. It is possible that changing the committed crime from assault and battery to murder, for example, could alter sentencing. Future researchers could also manipulate the brain scan images and determine how emphasizing other brain regions affects mock jurors' sentencing.

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Appendix A

Mock Juror Questionnaire

1. In the state of Oklahoma, the average sentence given for assault and battery is 3.5 years.

The defendant in this case, Donahue, was found guilty of assault and battery.

Which of the following do you think is the most appropriate sentencing for the defendant in this case?

- a. 1 year
 - b. 2 years
 - c. 3 years
 - d. 4 years
 - e. 5 years
 - f. 6 years
 - g. 10 years
 - h. More than 10 years
 - i. Life in prison with parole
 - j. Life in prison without parole
 - k. Death penalty
2. I am very certain of my answer to the previous question.
- Strongly Disagree- 1 2 3 4 5 -Strongly Agree
3. In your own words, could you please explain in the space provided what factors influenced your judgment?

4. The victim in the case, Porter (the Burger King manager), deserved the injury he received.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

5. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

6. The defendant is guilty.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

7. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

8. The defendant is innocent.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

9. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

10. If all the other case information remained the same but the defendant expressed remorse for hurting the victim in this case, I would have given him a less severe sentence.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

11. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

12. The defendant is likable.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

13. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

14. The defendant is actually sorry for what he did but is too embarrassed to admit it.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

15. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

16. If released back into society, the defendant is likely to commit the exact same crime again.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

17. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

18. If released back into society, the defendant is likely to commit one or more other crimes, excluding the one committed in this case.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

19. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

20. All psychopaths are violent.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

21. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

22. What is your academic major?

- a. Biology
- b. Psychology
- c. Forensic Science
- d. Sociology
- e. Criminal Justice

- f. Philosophy
 - g. Some other type of science other than the ones previously mentioned
 - h. Other
23. How many times have you served as a juror in a real court case?
- a. Once
 - b. Twice
 - c. Three times
 - d. More than three times
 - e. Zero (0) times
24. Have you ever been diagnosed as having antisocial personality disorder (APD) or psychopathy?
- a. Yes, antisocial personality disorder (APD)
 - b. b. Yes, Psychopathy
 - c. Yes, both
 - d. I have not received a diagnosis of either APD or psychopathy.
25. Have you ever been diagnosed as having an anxiety disorder, such as generalized anxiety disorder (GAD)?
- a. Yes
 - b. No
26. Do you take daily medication for anxiety?
- a. Yes
 - b. No
27. Have you ever been convicted of a violent criminal offense, such as assault?
- a. Yes
 - b. No
28. Have you ever been convicted of a nonviolent criminal offense, such as DUI?

- a. Yes b. No
29. To what extent do you like or dislike science?
- Dislike Very Much- 1 2 3 4 5 6 7-Like Very Much
30. How certain are you of your opinion toward science?
- Not at all Certain- 1 2 3 4 5 6 7-Extremely Certain
31. What is your current age in years?_____
32. What is your biological sex?
- a. Male
- b. Female
33. Is English your primary language?
- a. Yes
- b. No
34. What do you consider your race to be?
- a. Native American
- b. Asian
- c. Black
- d. White
- e. Other
35. Do you have normal or corrected vision (glasses/contacts)?
- a. Yes b. No
36. If the defendant were not a psychopath, I would have given him a less severe sentence.
- Strongly Disagree- 1 2 3 4 5 -Strongly Agree

37. I am very certain of my answer to the previous question.

Strongly Disagree- 1 2 3 4 5 -Strongly Agree

Questions 29 and 30 were obtained from the following source:

Mather, R. D., & Mather, C. M. (2009). Testing the persuasiveness of the Oklahoma Academy of Science statement on science, religion, and teaching evolution. *Proceedings of the Oklahoma Academy of Science*, 89, 1-9.

Appendix B

SRP-III

Directions: Please rate the degree to which you agree with the following statements about you using the scale below. You can be honest because your name will not be associated with your answers.

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.

1
Disagree
Strongly

2
Disagree

3
Neutral

4
Agree

5
Agree
Strongly

- _____ 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 have 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.

1
Disagree
Strongly

2
Disagree

3
Neutral

4
Agree

5
Agree
Strongly

- _____ 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.

Paulhus, D. L., Hemphill, J. F., & Hare, R. D. (in press). *Manual for the Self-report Psychopathy Scale*. Toronto, Ontario, Canada: Multi-health Systems.

Appendix C

Facts of the Case

Jonathan Donahue (age 24 at the time) entered a Burger King restaurant at midnight on February 17, 2008, brandishing a loaded, semi-automatic pistol. He demanded money from the store manager, William Porter, who was standing behind the cash register. Porter was 25 years old at the time and had no previous relation to Donahue. When Porter did not initially respond to the demand for money, Donahue forced him to his knees and then struck him forcefully and repeatedly in the back of the head with the pistol. Donahue later said he struck Porter because "that fat son-of-a bitch wouldn't stop crying." Donahue ran off without taking any money.

Donahue was eventually arrested and confessed to battering Porter at the Burger King. Porter's blood was also found on the pistol that was obtained from Donahue's car. Porter sustained moderate, permanent brain damage from the forceful blows to his head. He was in the hospital, in a coma for 20 days, but has since come out of the coma and returned to his home. However, Porter continues to have difficulty remembering many words and controlling his fine motor movement (such as holding pencils or typing). Donahue bragged about his actions at Burger King to fellow pre-trial detainees, and he boasted about his assault on Porter to jail staff. He also had a king's crown tattooed on his back.

Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, 337, 846-849.

Appendix D

The Trial

Donahue was charged with assault and battery (an unlawful touching of the person of another with a deadly weapon) and armed robbery (illegal taking of property in the presence of a person by violence or intimidation). In February 2010, a jury found Donahue guilty beyond a reasonable doubt of assault and battery but he was acquitted of armed robbery as the evidence pointed to his not leaving the Burger King with any money.

Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, *337*, 846-849.

Appendix E

Sentencing

(Participants in all conditions received these instructions).

Now we would like you to assume the role of a juror given the responsibility of giving the defendant an appropriate sentencing. Assume that all testimony and related facts presented next were briefed and proved beyond a reasonable doubt at the guilt phase of the trial.

Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, *337*, 846-849.

Appendix F

Diagnosis of Psychopathy Testimony

(All participants in the *prosecution condition* read this section).

During his sentencing hearing, the prosecution introduced aggravating evidence that Donahue is a diagnosed psychopath, suggesting that he is at risk of recidivism and poses a risk of "future danger" to society. Psychopathy itself is not currently included in the *Diagnostic and Statistical Manual Fifth Edition* (DSM-V), a tool for making psychiatric diagnoses. However, it may be included in the next version of the DSM since psychopathy is recognized as different in a variety of ways from antisocial personality disorder, a disorder that is in the DSM-V. Dr. Jeremiah Bloor, a psychiatrist and renowned expert at diagnosing psychopathy, testified that psychopathy is a clinical diagnosis defined by impulsivity; irresponsibility; shallow emotions; lack of empathy, guilt, or remorse; pathological lying; manipulation; superficial charm; and the persistent violation of social norms and expectations.

To clarify the disorder, Dr. Bloor cited several peer-reviewed publications that distinguish psychopathy from other concepts. First, psychopathy is different from psychopathology. Psychopathology simply refers to any pathological problem with the mind/brain, while psychopathy is a very specific clinical diagnosis. Second, psychopathy is different from sociopathy. Sociopathy can refer to any general pattern of antisocial behavior, while psychopathy is believed to arise specifically from an impaired emotional-processing system.

Dr. Bloor continued, while all criminals exhibit antisocial traits to some degree, psychopaths are unique. Psychopaths' antisocial behavior follows from a broken emotional system: Psychopaths are without conscience; they have no empathy toward other people. The

standard diagnostic tool is the Psychopathy Checklist-Revised (or the PCL-R). Dr. Bloor pointed to dozens of peer-reviewed publications, which confirm that the PCL-R has been tested and validated as a diagnostic tool for psychopathy. A trained clinician uses the PCL-R to score subjects (0, 1, or 2) on 20 behavioral items (such as lack of empathy, grandiose sense of self-worth, sexual promiscuity, and impulsivity). The final score is therefore between 0 and 40. Adults scoring 30 or above on the PCL-R are diagnosed as psychopaths. Dr. Bloor administered the PCL-R to Donahue and scored Donahue a 34 (psychopathic).

Dr. Bloor concluded by pointing out that psychopathy has no known, effective treatment. Dr. Bloor noted that psychopathy results from dysfunctional moral socialization. Moral socialization is the process whereby humans (from childhood, through adolescence, and into adulthood) learn what is right and wrong. Normal children, when they inflict harm on someone else, will recognize the distress that they've caused someone else and so they can be taught that such behavior is inappropriate. But psychopaths are resistant to moral socialization because of their disorder. They do not understand what is right and wrong as the rest of us do. This may be why they are so resistant to treatment.

Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, 337, 846-849.

Appendix G

Diagnosis of Psychopathy Testimony

(All participants in the *defense condition* read this section).

During his sentencing hearing, the defense introduced mitigating evidence that Donahue is a diagnosed psychopath, suggesting that he is therefore less responsible for his behavior because he has a harder time controlling his impulses and appreciating the wrongfulness of his actions. Psychopathy itself is not currently included in the *Diagnostic and Statistical Manual Fifth Edition* (DSM-V), a tool for making psychiatric diagnoses. However, there is talk of it being in the next version of the DSM since psychopathy is recognized as different in a variety of ways from antisocial personality disorder, a disorder that is in the DSM-V. Dr. Jeremiah Bloor, a psychiatrist and renowned expert at diagnosing psychopathy, testified that psychopathy is a clinical diagnosis defined by impulsivity; irresponsibility; shallow emotions; lack of empathy, guilt, or remorse; pathological lying; manipulation; superficial charm; and the persistent violation of social norms and expectations.

To clarify the disorder, Dr. Bloor cited several peer-reviewed publications that distinguish psychopathy from other concepts. First, psychopathy is different from psychopathology. Psychopathology simply refers to any pathological problem with the mind/brain, while psychopathy is a very specific clinical diagnosis. Second, psychopathy is different from sociopathy. Sociopathy can refer to any general pattern of antisocial behavior, while psychopathy is believed to arise specifically from an impaired emotional-processing system.

Dr. Bloor continued, while all criminals exhibit antisocial traits to some degree, psychopaths are unique. Psychopaths' antisocial behavior follows from a broken emotional

system: Psychopaths are without conscience; they have no empathy toward other people. The standard diagnostic tool is the Psychopathy Checklist-Revised (or the PCL-R). Dr. Bloor pointed to dozens of peer-reviewed publications, which confirm that the PCL-R has been tested and validated as a diagnostic tool for psychopathy. A trained clinician uses the PCL-R to score subjects (0, 1, or 2) on 20 behavioral items (such as lack of empathy, grandiose sense of self-worth, sexual promiscuity, and impulsivity). The final score is therefore between 0 and 40. Adults scoring 30 or above on the PCL-R are diagnosed as psychopaths. Dr. Bloor administered the PCL-R to Donahue and scored Donahue a 34 (psychopathic).

Dr. Bloor concluded by pointing out that psychopathy has no known, effective treatment. Dr. Bloor noted that psychopathy results from dysfunctional moral socialization. Moral socialization is the process whereby humans (from childhood, through adolescence, and into adulthood) learn what is right and wrong. Normal children, when they inflict harm on someone else, will recognize the distress that they've caused someone else and so they can be taught that such behavior is inappropriate. But psychopaths are resistant to moral socialization because of their disorder. They do not understand what is right and wrong as the rest of us do. This may be why they are so resistant to treatment.

Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, 337, 846-849.

Appendix H

Biological Explanation of Psychopathy Testimony

(Participants in the *biological explanation condition*, *biological explanation plus brain scan imagery condition*, *prosecution condition* and *defense condition* read this testimony).

The prosecution then called Dr. Roger Heer to testify to psychopathy's known causes. Dr. Heer, a neurobiologist and renowned expert on the causes of psychopathy, testified that the disorder results from impaired emotional learning as a child. The learning deficits are caused in part by genetic factors that contribute to improper brain development and, ultimately, faulty moral and social development. At the genetic level, Dr. Heer testified that recent peer-reviewed publications reported that a gene had been found that codes for an enzyme (MAOA), which is involved in breaking down neurotransmitters. In another study, Dr. Heer explained, it was reported that some humans have the gene for high MAOA activity while others have the gene for low MAOA activity, and individuals with low MAOA activity were more likely to engage in antisocial behavior.

Dr. Heer continued by noting that he was requested by the court to genetically test Donahue for Donahue's MAOA status. Dr. Heer testified that he did genetically test Donahue and reported that Donahue's genes confer low MAOA activity. Low MAOA activity, Dr. Heer continued, has a detrimental effect on normal brain development. Dr. Heer pointed to the connection between MAOA and the amygdala. The amygdala is a structure in the brain involved in emotional processing and learning. Psychopaths recruit less oxygen to the amygdala during tasks that involve emotional learning, relative to healthy controls. Extensive research has shown that normal humans as well as most mammals have something called a violence-inhibition mechanism. This violence-inhibition mechanism, controlled largely by the amygdala,

automatically creates anxiety in normal humans when they recognize that other humans are in pain or distress. Psychopaths, Dr. Heer explained, lack a normal violence-inhibition mechanism because of their dysfunctional brain. So psychopaths simply do not have the biological resources to experience anxiety in the face of others' suffering.

Dr. Heer concluded, the combination of genetic and neurobiological factors ultimately interact in psychopaths to lead to dysfunctional moral socialization. Moral socialization is the process whereby humans (from childhood, through adolescence, and into adulthood) learn what is right and wrong. Normal children, when they inflict harm on someone else, will recognize the distress that they've caused someone because of their functional violence inhibition mechanism, and so they can be taught that such behavior is inappropriate. But psychopaths, because of their genetically-induced dysfunctional violence-inhibition mechanism, do not learn to associate distress in others with anxiety in themselves and are thus resistant to moral socialization. They do not understand what is right and wrong as the rest of us do. This may be why they are so resistant to treatment.

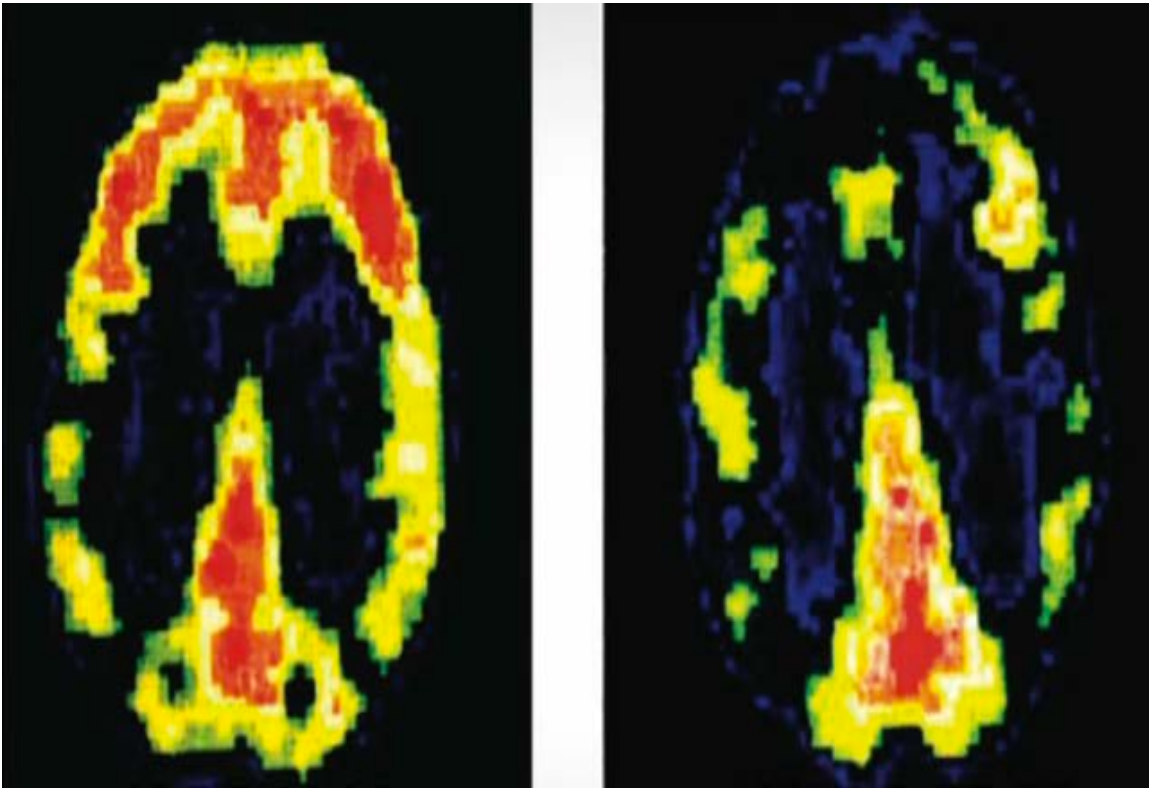
Aspinwall, L. G., Brown, T. R., & Tabery, J. (2012). The double-edged sword: Does biomechanism increase or decrease judges' sentencing of psychopaths? *Science*, 337, 846-849.

Appendix J

Brain Scan Image and Explanation

(Only the participants in the *biological explanation plus brain scan imagery condition* saw this.

It was treated as a continuation of Dr. Heer's testimony on a biological explanation of psychopathy).



Normal, non-psychopathic Brain

Donahue's Brain

Dr. Heer then presented imagery of two brain scans that he performed. The imagery compared a normal brain to Donahue's brain. The normal brain belonged to a subject that was not a psychopath. Dr. Heer noted that red and yellow colors on the scans indicate the presence of activity in a region of the brain. He then pointed out that Donahue's brain, compared to the normal brain, showed a significant lack of activity in the front of the brain

(located at the top of the scans and indicated by the arrows). Dr. Heer labeled this area of the brain as the prefrontal cortex.

According to Dr. Heer, extensive research has shown that psychopaths display reduced activity in the prefrontal cortex, which is an area of the brain that is involved in decision-making and impulse control. An underactive prefrontal cortex may predispose someone to act aggressively and impulsively, especially if they feel insulted or threatened.

Raine, A. (2013). *The anatomy of violence: The biological roots of crime*. New York: Pantheon Books.

Appendix K

Need for Cognition

Instructions: We are interested in how the next set of statements describes you. Please rate how characteristic each statement is of you by entering the number from the corresponding scale that best represents your answer.

1	2	3	4	5
Extremely Uncharacteristic	Somewhat Uncharacteristic	Uncertain	Somewhat Characteristic	Extremely Characteristic

- _____ 1. I prefer complex to simple problems.
- _____ 2. I like to have the responsibility of handling a situation that requires a lot of thinking.
- _____ 3. Thinking is not my idea of fun.
- _____ 4. I would rather do something that requires little thought than something that is sure to challenge my abilities.
- _____ 5. I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.
- _____ 6. I find satisfaction in deliberating hard for long hours.
- _____ 7. I only think as hard as I have to.
- _____ 8. I prefer to think about small daily projects rather than long-term ones.
- _____ 9. I like tasks that require little thought once I've learned them.
- _____ 10. The idea of relying on thought to make my way to the top appeals to me.
- _____ 11. I really enjoy a task that involves coming up with new solutions to problems.
- _____ 12. Learning new ways to think doesn't excite me much.
- _____ 13. I prefer my life to be filled with problems that I must solve.
- _____ 14. The notion of thinking abstractly is appealing to me.

1	2	3	4	5
Extremely Uncharacteristic	Somewhat Uncharacteristic	Uncertain	Somewhat Characteristic	Extremely Characteristic

- _____ 15. I would prefer a task that is intellectual, difficult, and important to one that is somewhat important but does not require much thought.
- _____ 16. I feel relief rather than satisfaction after completing a task that requires a lot of mental effort.
- _____ 17. It's enough for me that something gets the job done; I don't care how or why it works.
- _____ 18. I usually end up deliberating about issues even when they do not affect me personally.

Cacioppo, J. T., Petty, R. E., Kao, C. F., & Rodriguez, R. (1986). Central and peripheral routes to persuasion: An individual difference perspective. *Journal of Personality and Social Psychology*, 51(5), 1032-1043.

Appendix L

Need for Closure Scale (NFC)

Attitude, Belief and Experience Survey

INSTRUCTIONS: Read each of the following statements and decide how much you agree with each according to your beliefs and experiences. Please respond according to the following scale.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

- _____ 1. I think that having clear rules and order at work is essential for success.
- _____ 2. Even after I've made up my mind about something, I am always eager to consider a different opinion.
- _____ 3. I don't like situations that are uncertain.
- _____ 4. I dislike questions which could be answered in many different ways.
- _____ 5. I like to have friends who are unpredictable.
- _____ 6. I find that a well ordered life with regular hours suits my temperament.
- _____ 7. I enjoy the uncertainty of going into a new situation without knowing what might happen.
- _____ 8. When dining out, I like to go to places where I have been before so that I know what to expect.
- _____ 9. I feel uncomfortable when I don't understand the reason why an event occurred in my life.
- _____ 10. I feel irritated when one person disagrees with what everyone else in a group believes.
- _____ 11. I hate to change my plans at the last minute.
- _____ 12. I would describe myself as indecisive.
- _____ 13. When I go shopping, I have difficulty deciding exactly what it is I want.
- _____ 14. When faced with a problem I usually see the one best solution very quickly.
- _____ 15. When I am confused about an important issue, I feel very upset.
- _____ 16. I tend to put off making important decisions until the last possible moment.
- _____ 17. I usually make important decisions quickly and confidently.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

- ____ 18. I have never been late for an appointment or work.
- ____ 19. I think it is fun to change my plans at the last moment.
- ____ 20. My personal space is usually messy and disorganized.
- ____ 21. In most social conflicts, I can easily see which side is right and which is wrong.
- ____ 22. I have never known someone I did not like.
- ____ 23. I tend to struggle with most decisions.
- ____ 24. I believe orderliness and organization are among the most important characteristics of a good student.
- ____ 25. When considering most conflict situations, I can usually see how both sides could be right.
- ____ 26. I don't like to be with people who are capable of unexpected actions.
- ____ 27. I prefer to socialize with familiar friends because I know what to expect from them.
- ____ 28. I think that I would learn best in a class that lacks clearly stated objectives and requirements.
- ____ 29. When thinking about a problem, I consider as many different opinions on the issue as possible.
- ____ 30. I don't like to go into a situation without knowing what I can expect from it.
- ____ 31. I like to know what people are thinking all the time.
- ____ 32. I dislike it when a person's statement could mean many different things.
- ____ 33. It's annoying to listen to someone who cannot seem to make up his or her mind.
- ____ 34. I find that establishing a consistent routine enables me to enjoy life more.
- ____ 35. I enjoy having a clear and structured mode of life.
- ____ 36. I prefer interacting with people whose opinions are very different from my own.
- ____ 37. I like to have a plan for everything and a place for everything.
- ____ 38. I feel uncomfortable when someone's meaning or intention is unclear to me.
- ____ 39. I believe that one should never engage in leisure activities.
- ____ 40. When trying to solve a problem I often see so many possible options that it's confusing.

1	2	3	4	5	6
Strongly Disagree	Moderately Disagree	Slightly Disagree	Slightly Agree	Moderately Agree	Strongly Agree

- ____ 41. I always see many possible solutions to problems I face.
- ____ 42. I'd rather know bad news than stay in a state of uncertainty.
- ____ 43. I feel that there is no such thing as an honest mistake.
- ____ 44. I do not usually consult many different options before forming my own view.
- ____ 45. I dislike unpredictable situations.
- ____ 46. I have never hurt another person's feelings.
- ____ 47. I dislike the routine aspects of my work (studies).

Kruglanski, A. W., Atash M. N., De Grada, E., Mannetti, L., & Pierro, A. (1986). Need for Closure Scale. *Measurement Instrument Database for the Social Sciences*. Retrieved from www.midss.ie.

Appendix M

Approval for Usage of the SRP-III, Given by Dr. Delroy Paulhus

From: del paulhus <delp1@mail.ubc.ca>
Subject: Re: SRP-III
Date: March 25, 2014 6:15:47 PM CDT
To: Sean McMillan <mcclane68@gmail.com>
Reply-To: <dpaulhus@psych.ubc.ca>

Okay, here it is. You have my permission to use it in your research.

dp

On 3/25/2014 3:59 PM, Sean McMillan wrote:

Dear Dr. Paulhus,

My name is Sean McMillan, and I am a forensic psychology graduate student at the University of Central Oklahoma. My master's thesis focuses on psychopathy. I will be using college students as participants, and I wanted to ask you if I could have your permission to use the SRP-III for my study. I am measuring psychopathy but not Machiavellianism and Narcissism. My thesis includes a discussion of the development of the PCL-R and how the SRP-III has been demonstrated to contain the same four factors as the PCL-R as well as other exciting findings. It is a fantastic scale, and I have really enjoyed reading the findings that you and other researchers have found by using it. Our lab has had success using the SD3, but for this project we're interested in using the SRP-III in addition to the SD3. I am using it to assess levels of psychopathy in mock jurors, in order to determine if it makes them more sympathetic towards a defendant that is a diagnosed psychopath and expresses no remorse for a violent crime. I think it would be of great benefit to my study, and I would be deeply appreciative if you would allow me to use it.

Thank you for your time,

Sean McMillan

Appendix N

The Short Dark Triad (SD3)

SD3

Please rate your agreement or disagreement with each item using the following guidelines.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

- _____ 1. It's not wise to tell your secrets.
- _____ 2. I like to use clever manipulation to get my way.
- _____ 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 you, not others.
- _____ 9. Most people can be manipulated.
- _____ 10. People see me as a natural leader.
- _____ 11. I hate being the center of attention.
- _____ 12. Many group activities tend to be dull without me.
- _____ 13. I know that I am special because everyone keeps telling me so.
- _____ 14. I like to get acquainted with important people.
- _____ 15. I feel embarrassed if someone compliments me.
- _____ 16. I have been compared to famous people.
- _____ 17. I am an average person.
- _____ 18. I insist on getting the respect I deserve.
- _____ 19. I like to get revenge on authorities.
- _____ 20. I avoid dangerous situations.

1	2	3	4	5
Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree

- _____ 21. Payback needs to be quick and nasty.
- _____ 22. People often say I'm out of control.
- _____ 23. It's true that I can be mean to others.
- _____ 24. People who mess with me always regret it.
- _____ 25. I have never gotten into trouble with the law.
- _____ 26. I enjoy having sex with people I hardly know.
- _____ 27. I'll say anything to get what I want.

Paulhus, D. L., & Jones, D. N. (2011, January). *Introducing a short measure of the Dark Triad*.

Poster presented at the meeting of the Society for Personality and Social Psychology, San Antonio.

Jones, D. N., & Paulhus, D. L. (in press). Introducing the Short Dark Triad (SD3): A brief measure of dark personality traits. *Assessment*.