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**PSYCHOPATHY: TREATMENT AND INTERVENTION MODALITIES FOR FUTURE
USE**

by

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DEDICATION

To my family. Your loving encouragement and endless support has transformed my dreams into reality.

ABSTRACT

Psychopathy exists in all cultures, socioeconomic statuses, races, genders, and ethnic groups. A psychopath, usually criminal, but not always so, forms an image of a callous, self-centered, and remorseless individual deeply lacking in empathy and the ability to form warm relationships with others (Hare, 1993). Currently, psychopathy is treated as a single construct; however, research has illuminated numerous variants within the disorder and comorbidities of other disorders that must not be overlooked (Thompson et al., 2014). In order to attain complete understanding of the disorder, all features and traits must be recognized. In addition, intervention and treatment programs for psychopathic individuals are classically not effective. Psychopathic individuals seldom seek help unless it is legally mandated. For these reasons, it is essential that more research be completed in order to determine novel treatment and intervention strategies in order to combat this issue. The present study contributes to the previous research regarding psychopathy and offers new and innovative recommendations regarding treatment plans that address each variant of the psychopathic personality. In an effort to treat each person individually, while considering their unique traits, behavioral patterns, and comorbidities, this study also considers potential biases that individuals with a diagnosis of psychopathy may be subject to. The findings expand the current knowledge of psychopathy and allow potential growth in the field of treatment.

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CHAPTER 1

INTRODUCTION

Psychopathy is ubiquitous. It exists in all cultures, socioeconomic statuses, races, genders, and ethnic groups. According to the Diagnostic and Statistical Manual of Mental Disorders (2013) (DSM), antisocial personality disorder (ASPD) is defined as, “a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood”. ASPD, also commonly related to but not synonymous with psychopathy, has become an extensive concern for Americans as virtually each individual has come into contact with a psychopath during their lives. A psychopath, usually criminal, but not always so, forms an image of a callous, self-centered, and remorseless person deeply lacking in empathy and the ability to form warm relationships with others (Hare, 1993)

The assessment of psychopathic individuals is vital in understanding the etiology of the disorder and possible intervention strategies that could be employed to combat it in the future. Research in regard to psychopathy dates back to the early 19th century (Guidotti, 2012). Although research has increased significantly in the past fifty years, it is still very limited due to the fact that concrete causes and successful rehabilitative strategies have yet to be discovered. Rather than overwhelming tangible evidence, research has only uncovered multiple theories that could potentially be the causes of this vast disorder (Vien & Beech, 2006). Although previous research executed in the realm of psychopathy has taught present researchers a great deal, it is imperative to continue exploring this subject in order to aid future researchers.

One way of helping future researchers is to have a solid grasp on the issues and gaps we have today in psychopathy research. A central reason why the research on this subject may be

limited is because psychopathic traits are typically not discovered until after an individual has committed an unlawful act. While some problem children may be diagnosed with oppositional defiance disorder or conduct disorder, which are precursors to psychopathy, they are usually never labeled as a psychopath until much later in life when intervention strategies are significantly less likely to be successful (Hare, 1993). Additionally, when a psychopathic individual is employed in a rehabilitative program, they have been notoriously resistant to treatment (Anderson & Kiehl, 2014). Psychopathic individuals will usually deviate from taking responsibility during their treatments and attempt to impose their contemptuous views on others. Psychopathic individuals simply think that there is nothing plaguing them and therefore do not benefit from previously employed treatment strategies.

Given the wealth of knowledge that previous research has provided for other major clinical disorders, in more than a century of research on the enigmatic subject of psychopathy comparatively little research has been conducted. It would be more beneficial to seek effective early intervention strategies than to wait and attempt to treat adult psychopaths after they have already committed unlawful acts. It would also be advantageous for researchers to expand on studies that have already been conducted in an effort to identify novel treatment strategies that may be more valuable for managing this disorder. Clearly, there is a gap in research that must be addressed.

Problem Statement

As the number of psychopaths in America continues to grow, more individuals are at risk for becoming victims. Although psychopathy is considerably higher in forensic settings, approximately 20%, research states that there are at least two million psychopaths in North America at the present time, with at least 100,000 living in New York City (Thompson, Ramos,

& Willett, 2014). Psychopathy affects many people as psychopaths cast a wide net, catching unknowing victims in their crosshairs. The most obvious expressions of psychopathy involve blatant criminal violation of societal rules, however, many psychopaths remain undetected and out of prison, using their influential charm on society and leaving countless lives damaged in the wake of their actions. In addition, intervention and treatment programs for psychopathic individuals is classically not effective (Anderson & Kiehl, 2014). Psychopathic individuals seldom seek help unless it is legally mandated and many do not believe that there is anything wrong with them, therefore displaying no insight into their disorder. Some even consider their amorality to allow them an advantage over the rest of society (Thompson et al., 2014). For these reasons, it is essential that more research be completed to determine novel treatment and intervention strategies in order to combat these obvious issues.

Psychopathic individuals are also problematic internationally. They are responsible for a disproportionate amount of crime, corruption in the workplace, and are a higher risk for future violence than other offenders. Presently, psychopathy is treated as a single construct; however, research has illuminated numerous variants within the disorder that must not be overlooked (Thompson et al., 2014). In order to attain complete understanding of the disorder, all features and aspects must be recognized. Again, more research must be completed on alternative intervention strategies and treatment plans that are employed on children expressing psychopathic traits so as to better understand the mystery of the psychopath and, as a result, treat and protect future generations.

Purpose of the Study

The purpose of the current study is to contribute to the already existing body of literature in regard to the etiology and traits of psychopathy, disorders that are correlative, and novel

intervention and treatment strategies that may lead to progress in confronting this disorder. Past research has connected early childhood abuse and psychopathy. Previous studies examining the backgrounds of psychopathic children indicate that those adolescents experience early emotional deprivation and parental rejection. However, it has not been established if early neglect is the primary cause (Daversa, 2010). Understanding the potential causes in their entirety is paramount to comprehending psychopathy and is vital to create original intervention strategies.

Additionally, the identification of psychopathic traits in children as early as six months of age may assist in prevention efforts, as psychopathic children are more likely to alter their progression of the disorder if treated very early in life (Hawes, Price, & Dadds, 2014). Further contribution to the existing body of research is fundamental in reference to psychopathy and possible treatment strategies.

Research Objectives

The following research objectives were explored and addressed:

RO1: Identify psychopathic traits as related to known disorders and treatment plans.

RO2: Discuss possible treatment and intervention strategies to combat this disorder in the future.

Delimitations

This research is intended to identify possible risk factors of psychopathy and conceivable intervention strategies to aid in rehabilitation. The intention is to add information to the already accumulated research in an effort to advance intervention and treatment approaches for future use.

Assumptions

Based on previous research, it can be assumed that psychopathy does not have a known, singular cause. While causes of this disorder have been theorized, one root source has not been

found. Rather, multiple events or contributors can be factors in the foundation of this disorder (Poythress, Skeem, & Lilienfeld, 2006). Individuals with this disorder are known to have prominent personality types that are similar across all cases. It is also assumed that the existing literature pertaining to this topic was collected in an ethical manner, producing legitimate and accurate information and results.

Definition of Key Terms

Antisocial Personality Disorder (ASPD): describes an individual with a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood (Glenn, Johnson, & Raine, 2013).

Psychopathy: it is used to refer to a disorder, typically of an unspecified or at least poorly understood biogenesis, with symptomatic behavior that includes dissembling, glibness, lack of empathy or concern for others, thrill-seeking, and what might generally be seen as complete self-absorption (Horley, 2014).

Callous-Unemotional traits: often lacks appropriate remorse or guilt after causing offense or harm, and shows a callous lack of empathy for the feelings of others (Rowe, 2014).

Empathy: the act of perceiving, understanding, experiencing, and responding to the emotional state and ideas of another person (Cuff, Brown, Taylor, & Howat, 2016).

Disorder: a state of disturbance in the normal functioning of the total human individual, including both the state of the organism as a biological system and of his personal and social adjustments (Horwitz, 2017).

Intervention: aims to equip patients with skills to actively participate and take responsibility in the management of their chronic condition in order to function optimally through at least knowledge acquisition and a combination of at least two of the following:

stimulation of independent sign/symptom monitoring, medication management, enhancing problem-solving and decision-making skills for medical treatment management, and changing their physical activity, dietary, and/or smoking behavior (Hare, 1993).

Amorality: neither violates one's duty or conforms to it; neither morally better nor morally worse than any other action (Dorsey, 2016).

CHAPTER 2

LITERATURE REVIEW

Introduction

According to the *Diagnostic and Statistical Manual of Mental Disorders* (DSM), antisocial personality disorder (ASPD) is, “a pervasive pattern of disregard for, and violation of, the rights of others that begins in childhood or early adolescence and continues into adulthood” (p. 659). Researchers throughout history have questioned the etiology of antisocial personality disorder, which has also been referred to as psychopathy or sociopathy; however, the distinction lies in differences in severity. Psychopaths are found in every culture, race, gender, socioeconomic background and walk of life. Notoriously, charm and allure have been key characteristics of psychopathic individuals, while underneath the surface, they lack empathy and the ability to form emotional relationships with others, while functioning without the constraints of conscience. This lack of healthy qualities makes the psychopath manipulative, impulsive, and often (but not always) criminal. Although this mental disorder is prevalent in at least two million individuals in North America, the cause is unknown (Hare, 1993). Previous attempts to identify the root of this disorder have focused on biological or genetic contributions, while the contribution of environmental factors has received less attention (Poythress et al., 2006)

While a large portion of research has focused on the disorder in adults, it is important to also view youths who have exhibited psychopathic tendencies. Those children have displayed aggressive, antisocial behavior patterns as well as showing less worry to punishments, a partiality to danger, and are less reactive to emotionally distressing or threatening stimuli (Smith & Hung, 2012). In attempting future intervention, it is important to understand how to treat youth who exhibit psychopathic symptoms. To do so, one must understand the measurement scale that

is used to assess whether or not an individual demonstrates psychopathic tendencies. In order to do this, it is necessary to recognize the history of the disorder and the previous research that has been conducted.

Previous Research and History

The idea that psychopathy could potentially be linked to abnormalities in the brain dates back to research conducted in the 19th century in the case of Phineas Gage. In 1848, Phineas Gage was working on the construction of a railroad when a mistake caused the tool he was working with to shoot through his skull. Gage, who had a lesion in the frontal region of his brain, began exhibiting aggressiveness, impulsivity, promiscuity, and impairment in decision-making, which was opposite of his normally calm and modest disposition before the accident (Santana, 2016). Gage's physician, John Martyn Harlow's research in 1868, led to a link between prefrontal damage and a deviance in social behavior. The case also led to the discovery that neurosurgery was feasible and ultimately led to psychosurgery and the abuses of frontal lobotomy a century later (Guidotti, 2012). As well as damage to the brain, there are also several examples that connect early childhood abuse and psychopathy. Early studies examining the backgrounds of psychopathic children indicate that those affected adolescents experience early emotional deprivation and parental rejection (Daversa, 2010). While research regarding psychopathy is always growing, there have been some main contributors.

Phillippe Pinel (1745-1826). Although research regarding psychopathy has mostly been limited to the 21st century, a psychiatrist by the name of Philippe Pinel addressed the topic in 1806. Pinel acted as a pioneer and was one of the first psychiatrists to evoke a more humane approach to psychiatric treatment by foregoing previously used methods such as chains and whips to control patients. Pinel used the phrase, "manie sans de'lire" (madness without delirium)

to describe the disorder over two hundred years ago (Anderson & Kiehl, 2014). He used this term to describe individuals who did not have intellectual deficits, but had deficits in behavioral traits marked by cruelty, immorality, and antisocial acts. This idea was the cornerstone of the modern view of psychopathy.

J.L.A Koch (1841-1908). Koch created the term “psychopastiche”, or psychopath, in 1888 and claimed that psychopathy arose from a defect at birth. He also believed that assessing psychopathy traits requires a “holistic appraisal of the patient’s life history” (Kiehl & Lushing, 2014). Although Koch’s psychopathy theory was mainly focused on “moral insanity”, it was still too broad, even in the 19th century, to encompass personality disorders as a whole. Koch’s definition of “psychopastiche” was also comprised of people who hurt themselves intentionally, such as those who attempted to commit suicide. Therefore, this definition lost sight of the moral deficits that are central to modern understandings of psychopathy. By the 1920’s, the word ‘psychopath’ was used to describe those who were weak-willed, depressed, excessively insecure or shy and was basically used as a placeholder for abnormal psychology in general (Kiehl & Lushing, 2014).

Sigmund Freud (1856-1939). Sigmund Freud is a prominent figure in psychology research. Although a main contributor to research regarding different aspects of psychology, his research concerning psychoanalysis and his psychoanalytic theory is most pertinent to this paper. Beginning in 1886, Freud was working under Josef Breuer and began employing hypnosis in his clinical work. He began working with a client described as Anna O. and she became the first case study in their work with psychoanalysis. Anna O. suffered from physical symptoms with no apparent cause. It was found that her symptoms were resolved through a ‘talking cure’, which consisted of Anna speaking freely about her repressed emotions. It has been reported that this

case is what generated Freud's interest about the unconscious mind and led to the development of some of his most significant ideas (Miller, 2009). Freud ultimately deserted the idea of hypnosis due to the belief that symptoms could be relieved more effectively by the patient talking freely about whatever memories or ideas came to him or her. He dubbed this as 'free association' and went further to theorize that a patient's dreams could be analyzed to reveal unconscious feelings, therefore allowing repressed emotions to come to light. By 1896, Freud began using the term 'psychoanalysis' to describe this act and it is still used in clinical settings today.

Hervey Cleckley (1903-1984). Hervey Cleckley has been deemed one of the most influential psychiatrists of the 20th century. Cleckley even stated, "the psychopath is the "forgotten man of psychiatry" (Lilienfeld, Watts, Smith, Patrick, & Hare, 2018). He considered psychopathy as "concealed psychosis" that is only exposed through strong emotion, as well as the division of the connection between words and actions, which he termed "semantic dementia" (Vien & Beech, 2006). He was the first researcher to extensively consider the personality traits of individuals with psychopathy in his book, *The Mask of Sanity*. This book provided the foundation of numerous experiments that dealt with psychopathy and many researchers used Cleckley's criteria to operationalize definitions of psychopathy. It is also believed that Cleckley's writings on psychopathy, at least implicitly, shaped the description of antisocial personality in the first two editions of the DSM. According to Cleckley, "the modal psychopath is a hybrid creature, superficially charming, socially poised, and seemingly intelligent on the outside but affectively and interpersonally impoverished to a profound degree on the inside" (Lilienfeld et al., 2018). In the first edition of *The Mask of Sanity*, which was published in 1941, Cleckley identified 21 key criteria for psychopathy. In his second edition of the book, in 1950, he

condensed the list to 16 criteria known as the “Cleckley Criteria”. These criteria include: superficial charm and ‘good intelligence’, absence of delusions and other signs of irrational thinking, absence of nervousness and psychoneurotic manifestations, unreliability, untruthfulness and insincerity, lack of remorse or shame, inadequately motivated antisocial behavior, poor judgment and failure to learn by experience, pathological egocentricity and incapacity for love, general poverty in major affective reactions, specific loss of insight, unresponsiveness in general interpersonal relations, fantastic and uninviting behavior with drink and sometimes without, suicide rarely carried out, sex life impersonal, trivial, and poorly integrated, and failure to follow any life plan (Cleckley, 1950, pp. 338–339). Many of the criteria mimic modern research and exemplify why Cleckley was a pioneer regarding psychopathy.

Robert Hare (1934-). Dr. Robert Hare is a main contributor to the study of psychopathy and is the developer of the most widely used assessment tool of psychopathy, the Psychopathy Checklist-Revised (PCL-R). Dr. Hare has devoted his professional work to inspecting the nature and assessment of psychopathy and the implications that it has for the criminal justice and mental health communities. In addition to developing the PCL-R, Dr. Hare has also authored several books and hundreds of journal articles regarding psychopathy and implications of treatment for those affected by the disorder. Hare closely followed the research of Hervey Cleckley and mirrored his efforts. Like Cleckley, Hare researched the underlying pathology of psychopathy and established a range of peculiarities in linguistic and emotional processing that psychopathic individuals exhibit. Unlike most of his colleagues, Hare believed that psychopathy was different than sociopathy and has also differed from the concept in the DSM-5 and believed that the diagnosis of ASPD is separate from his concept of psychopathy. The impact of Dr. Hare’s research and the development of the PCL-R have shaped research regarding psychopathy

for the rest of time. Now, clinicians are better able to assess risk and recidivism among psychopathic offenders and can continue to research possible treatment and intervention techniques.

Previous research on psychopathy has paved the way for more extensive research and experiments to be done presently. The scientific community has explored many research topics such as characteristics of psychopathic individuals since the early experiments and continues to learn more as time progresses. Research has progressed exponentially since the 1900's with the development of tools that operationalize the traits of psychopathy. One such tool, which has become the most widely used assessment instrument, is Hare's Psychopathy Checklist Revised.

Measurement Tools and Assessment of Psychopathy

Hare Psychopathy Checklist Revised (PCL-R). Drawing upon Cleckley's conclusions of psychopathy, Dr. Robert Hare created the Psychopathy Checklist (PCL) in 1980, which was revised in 1991 (PCL-R). Hare's PCL-R is the most widely accepted diagnostic tool that assesses psychopathy today, has been translated in sixteen different languages, and is used in forensic settings around the world to assess the disorder. The PCL-R is comprised of twenty items that are used to evaluate the presence of psychopathic traits in adults (Müller et al., 2003). There are two components that must be met in order to complete the PCL-R. First, an extensive review of the patients' education, work history, extracurricular activities, family history, and history with friends is conducted. Then a life history interview takes place with the patient; however, although the in-person interview is strongly recommended, it is not required to complete the PCL-R. An expert will then evaluate all of the information and rate the patient on the twenty items according to specific scoring standards. Scores on the PCL-R range from 0-40, with a score of 30 or higher indicating psychopathy (Kiehl & Lushing, 2014). Hare and his colleagues

also developed the screening version (PCL-SV), which is a shorter version of the PCL-R and is used to assess psychopathy in non-forensic populations.

While the PCL-R was developed with the main goal of discovering whether or not an adult is psychopathic, research has proven that it is also clinically useful for adolescents (Ridenour, Marchant, & Dean, 2001). While administering the checklist to children, scores of psychopathy are based on the responses of parents and teachers of children who have demonstrated traits that resemble adult psychopathy, such as, behavioral, emotional, or learning problems. The children tested had the greatest number of conduct problems, interactions with police, and the highest rates of antisocial personality disorder. The results of this research were consistent with its hypothesis stating that PCL-R scores correlated with lower grade point average and juvenile delinquency (Ridenour et al., 2001). However, in addition to the PCL-R, Dr. Hare and his colleagues also developed a version for youths (PCL-YV). This version of the PCL-R is a twenty-item test that is designed for the assessment of psychopathy in males and females aged 12-18. However, the diagnosis or label of psychopathy is inadvisable in minor populations. Instead, psychopathic tendencies are considered callous-unemotional (CU) traits in children (Kiehl & Lushing, 2014).

The Levenson Self-Report Psychopathy Scale. The Levenson Self-Report Psychopathy Scale (LSRP) is a measure of psychopathy that has not been submitted to a great deal of evaluation. The LSRP is a 26-item self-report questionnaire that is designed to assess psychopathy in non-institutionalized samples (Sellbom, 2011). The LSRP is considerably shorter than other measures of psychopathy and produces a total score as well as two more scores that reflect primary and secondary psychopathy. Previous research indicates the validity of the LSRP because of its moderate correlations with the PCL-R and other varying self-report measures.

Although the LSRP achieved validity, it has yet to achieve internal structural consistency across samples. Sellbom (2011) conducted a study in order to attain validity across samples. Results of this study indicated a theoretically likely pattern of convergent and discriminant validity. Additionally, LSRP total and factor scores were highly and significantly correlated with narcissism, global psychopathy, antisocial behaviors, impulsivity, substance abuse, and anger potential. Therefore, this study demonstrated assuring results regarding the LSRP as a reliable measure of psychopathy. Another self-report measure that has established validity as a measure for assessing psychopathy is the Psychopathic Personality Inventory.

The Psychopathic Personality Inventory. The Psychopathic Personality Inventory (PPI) and the revised version (PPI-R) is a “comprehensive self-report measure of psychopathic personality traits initially developed for use with noncriminal populations” (Ruchensky et al., 2018). The original PPI scales consisted of: Machiavellian Egocentricity, Impulsive Nonconformity, Blame Externalization, Carefree Nonplanfulness, Fearlessness, Stress Immunity, Social Potency, and Coldheartedness (Ruchensky et al., 2018). The two-factor structure of the PPI and PPI-R is generally constant in regard to other theoretical models that link psychopathic traits to the functioning of various neurobiological systems. Multiple researchers have attempted to replicate the structure of the PPI and PPI-R with success. They have found that research also supports the factor structure of the PPI-R in non-offender samples, typically among college students (Benning, Patrick, Salekin, & Leistico, 2005; Witt, Brent Donnellan, & Blonigen, 2009). There continues to be debate regarding how to operationalize the core features of psychopathy and the PPI/PPI-R is only one tool that assesses various personality traits of the disorder. However, the higher order dimensions that are associated with the PPI/PPI-R seem to be evident in the DSM-5. In the DSM-5, psychopathy has been added as a specifier for ASPD

and consists of traits that are very closely aligned with the Fearless Dominance dimension of the PPI. Therefore, there is likely to be more research on the factors and dimensions of the PPI/PPI-R in the future as more versions of the DSM are published.

Diagnostic and Statistical Manual for Mental Disorders

The Diagnostic and Statistical Manual for Mental Disorders (DSM) is the standard for defining mental illnesses in the United States. The DSM offers a template for how clinicians should classify and assess patients due to the mental illness that affects them. Given the complexities of defining mental illness, the DSM is in a constant state of evolution. While the importance of the affective traits that Cleckley established has always been recognized, some experts had doubts about the abilities of the average clinician to accurately detect and assess those traits. This conflict is the primary reason why psychopathy is not recognized by the American Psychiatric Association (APA) and in turn not listed specifically in the DSM (Kiehl & Lushing, 2014). Widespread dissatisfaction ensued over early versions of the DSM's treatment and assessment of ASPD and psychopathy. This discontent led the APA to conduct studies in an effort to improve the assessment psychopathy and to provide more concrete definitions of the disorder. The result emerged in the DSM-IV when some affective criteria were reintroduced; however, in an effort to compromise, it presented no regulation on how to integrate these symptoms into a proper treatment plan.

Substantial confusion and irritation began building within the clinical community due to the lack of clarity that is presented by the DSM concerning psychopathy. Although psychopathy is closely related to ASPD in the DSM, the conceptualization of ASPD is very expansive. "Approximately 80% of prison inmates will meet the criteria for the disorder; thus, the condition has very little predictive utility within forensic samples because it is essentially synonymous

with criminality” (Kiehl & Lushing, 2014). Therefore, the DSM’s conception of ASPD is not sufficient to assess psychopathic traits. While the importance of the conception and a proper definition of psychopathy cannot be overlooked, there are numerous theories of psychopathy that may aid in answering these questions.

Theories of Psychopathy

While a psychopathic individuals cannot be recognized in the community solely by their physical symptoms, as psychopathy does not present physically, their distinctive personality traits make psychopathy fundamentally different than other personality disorders. Therefore, there are a number of theories that provide information regarding the possible etiology of psychopathy and what factors make the psychopathic individual dissimilar from those who are diagnosed with differing personality disorders.

Arousal theory. Arousal is beneficial to all humans in regard to motivation and incentive; however, in psychopathic individuals, low levels of cortical and autonomic arousal cause concern. Low levels of arousal causes those diagnosed with psychopathy to be in a continual state of sensation seeking behavior, which causes disordered individuals to not be autonomically aroused to stimuli that excites, scares, or frightens non-psychopathic individuals (Vien & Beech, 2006). The result of this deficit causes the individual to require a larger variability and intensity of sensory contribution in order to maintain an optimal level of arousal.

The Arousal Theory maintains that sensory intake and arousal level are correlated such that an optimal level of arousal is upheld; however, when the level of arousal decreases, sensory intake and sensation-seeking behavior intensifies. Raine et al., (1990) conducted a study that exemplified this concept by assessing whether event-related potential (ERP) measures of attention recorded in adolescence are capable of predicting criminality in adulthood. Researchers

measured the arousal of 15-year-old boys by use of cardiovascular, cortical, and electrodermal responses. Then, criminality of those same boys was measured 9 years later at the age of 24. Results indicated that criminals experienced lower levels of arousal in adolescence before they engaged in criminal activity (Raine, Venables, & Williams, 1990). This study indicates that lower levels of arousal are associated with criminality. However, it is important to keep in mind that criminality alone does not equate to psychopathy.

A psychopathic individual's low level of arousal is variable. A meta-analysis conducted by Lorber (2004) examined the relations of electrodermal activity (EDA) and heart rate with psychopathy, aggression, and conduct problems. Results indicated that low resting EDA was associated with conduct problems and psychopathy. Thus, a psychopathic individual's arousal state may be due to low ETA. Low arousal levels may also be due to deficits of fear responses. Low arousal levels can indicate an abnormally high aversion threshold, which can only be attained with elevated levels of aggression and violence (Vien & Beech, 2006). Patrick (1994) examined startle potentiation in psychopathic individuals when they viewed warning cues and aversive pictures. Patrick concluded that there was an absence of normal startle potentials in psychopaths, which indicated a low capacity for defensive response mobilization, or fear responses.

Additionally, research indicates that psychopathic individuals have lower conditionability than their non-psychopathic counterparts. When analyzing deficient aversive conditioning in psychopaths, a foul odor was used as the unconditioned stimulus and neutral faces were used as the conditioned stimulus. It was hypothesized that psychopathic individuals would exhibit poor responding in skin conductance and startle potentiation, which would indicate a subcortical limbic deficiency (Flor, Birbaumer, Hermann, Ziegler, & Patrick, 2002). As hypothesized,

results suggest aversive emotional conditioning, as well as fear conditioning is compromised in psychopathic individuals. Furthermore, although psychopathic individuals are able to anticipate aversive results correctly, they are not able to preserve this appropriate assessment over time (Flor et al., 2002). It was also concluded that psychopathic individuals have association forming deficits, which could be connected to faulty interaction between the limbic system and cortical systems of the brain. This faulty interaction leads to emotional dysregulation and lower levels of arousal within the psychopathic individual. As well as issues with arousal, research has concluded that there are various other abnormalities in the brains of psychopathic individuals.

Neurobiological theory. The brains of psychopathic individuals are believed to be structurally different than the brains of non-psychopaths. Specifically, dysfunction in emotional processing appears to be produced by neural connections in the development of psychopathy (Vien & Beech, 2006). “The ventromedial prefrontal cortex, the medial temporal cortex and the amygdala appear to be part of a neuronal circuit that plays a central role in brain mechanisms involved in affective processing” (Herpertz & Sass, 2000). The powerful interconnectedness of the amygdala provides the foundation for emotional reactions that originate from associative processes. These processes include exteroceptive sensory inputs combining with interoceptive changes, which gives emotional significance to external events (Herpertz & Sass, 2000). This concept is exhibited by the previously discussed case of Phineas Gage. While some studies provide evidence of altered emotion and personality when examining lesions following damage to the orbitofrontal cortex, there is less research regarding prefrontal dysfunction in psychopathic individuals. However, in a study examining orbitofrontal and frontal ventromedial insufficiencies in psychopathy, psychopathic criminals were compared to non-psychopathic criminals with measures connected to orbitofrontal or frontal ventromedial functioning, as well as with control

measures more associated with frontodorsolateral and posterorolandic functions (Herpertz & Sass, 2000). Results indicated that while both groups functioned correspondingly on all control measures; psychopathic individuals were considerably impaired in all of the orbitofrontal-ventromedial tasks. Predictably, psychopathic individuals were also extremely impulsive in numerous analyses (Herpertz & Sass, 2000).

Neuroimaging studies indicated by positron emission tomography (PET) suggest that reduced prefrontal performance is a characteristic of antisocial and violent individuals (Raine et al., 1994). Functional neuroimaging studies have also reinforced the link between emotion processing difficulties and prefrontal dysfunction in psychopathic individuals (Herpertz & Sass, 2000). Similarly, in research using fMRI results to examine neural responses, positive and negative pictures from the International Affective Picture System analyzed the effect of emotional processing in psychopathic individuals. Results indicated that in psychopathic individuals there was greater activation of the amygdala to negative pictures, which signifies a strong association in neural activity between the amygdala and psychopathy (Müller et al., 2003).

Research also suggests that lesions in the orbitofrontal cortex (OFC) can relate to antisocial behaviors. It is known that damage to the OFC can cause individuals to display disinhibiting attitudes, socially inappropriate behaviors, impulsive behaviors, irresponsibility, indifference toward the attitudes of others, and lack of insight regarding their condition (Séguin, 2004). However, although lesions in this area of the brain may lead to antisocial behaviors, they are rarely related to physical violence. Although there is research that suggests that dysfunction in the amygdala rather than the OFC may be in part why an individual with psychopathy may display some behavioral abnormalities, there is still debate concerning whether the neurobiological foundation of psychopathy lies within the amygdala or OFC (Vien & Beech,

2006). Furthermore, the neurological dysfunction that a psychopathic individual may express is not limited to one area in the brain and it is likely that the deficits are widespread. In turn, these deficits make psychopathic individuals notably resistant to treatment, as they are functionally unable to experience emotions as a healthy individual would. It has been theorized that psychopathic individuals are unable to experience these emotions due to unhealthy attachment styles that were formed as infants.

Attachment theory. Attachment theory has yet to receive prominent attention by researchers of psychopathy. While grounded in biological theory, attachment theory draws greatly on the role of relational experiences shaping behavior (Christian, Sellbom, & Wilkinson, 2017). Attachment theory posits that infants are born with an instinctual need to maintain close proximity and bond with an attachment figure, usually the infant's parents, in order to be protected from potential threats (Bowlby, 1982). A child's early relationships with his or her primary caregivers are known to employ long-lasting effects on their future emotional well-being and social skills (Saltaris, 2002). The first few months of a child's life are imperative to future successes as mentally healthy individuals. Past clinical research has proven that the emotional disconnection displayed by psychopathic individuals is likely to form in the first few months of life (Saltaris, 2002). Therefore, when studying a psychopathic individual, it is important to distinguish what parenting styles were used in order to gain more insight into his history.

As well as the lack of emotional attachment in children with psychopathy, relational issues have also been a cause for continued research. According to the attachment theory, the relationship between children and primary caregivers is very influential because it reflects the first bonding experience for children (Bowlby, 1982). Children expect to trust caregivers and use them as a safe haven from their surrounding environment. If this reliability does not exist, they

form a sort of affectionate-less personality, which is comparable to the personality of a psychopath. According to Bowlby (1982), children who are unable to bond with adult counterparts do not see others as worthy of trust, empathy, or concern, which can lead to callous and psychopathic traits.

In addition, research indicates that patterns of insecure attachment intersect with patterns of disordered personality; however, it is important to take cultural differences, genetic temperament, and environmental conditions into account (Brennan & Shaver, 1998). Bowlby (1973) described an example modeling the effects of insecure attachment:

Each party is autonomous. Given basic trust the arrangement can work well. But any possibility of defection by the attachment figure can give rise to acute anxiety in the attached. And should he be experiencing alarm from another source at the same time, it is evident that he is likely to feel the most intense fear. (pp. 93-94)

This example demonstrates that threats from the environment should elicit withdrawal or escape behavior. In a healthy attachment between parent and child, the child would most likely escape the threatening stimuli by finding solace in the parental figure. However, when failure to find solace continually occurs, the child may develop the perception that when help is needed, it will be inconsistently available or unavailable altogether (Brennan & Shaver, 1998). In infancy and adolescence, the combination of chronic distress resulting from perceived environmental threats and lack of support from caregivers may lead to various forms of psychopathology, including psychopathy. Bartholomew (1990) asserts that secure individuals perceive little threat from the environment and trust their attachment figures and as a result are assured in the reliability of their attachment figure. Therefore, secure individuals are able defend themselves against environmental threats or stressors and process emotions in a healthy manner. These individuals

are least likely to develop a personality disorder. Although individuals may develop different styles of managing their behavior, also called their “working model”, across relationships, they typically exhibit unchanging attitudes, which replicate their general attachment style. Therefore, attachment theory suggests that the general working model of an adult is a reflection of their attachment history (Christian et al., 2017).

Insecure attachment styles in adults can be characterized in two terms: attachment anxiety and attachment avoidance. Attachment anxiety is conceptualized by “a preoccupation with the availability of others, fear of abandonment, doubts over self-worth, and excessive reassurance seeking, thought to reflect a history of inconsistent responses to attachment bids” (Ainsworth, 1979). Attachment avoidance is conceptualized by “avoidance of emotions, dependency, and intimacy; defensive self-inflation, and cynicism regarding relationships and is thought to reflect a history of insensitive and nonresponsive caregiving” (Bartholomew & Horowitz, 1991). Low levels of both anxious and avoidant attachment is thought to reveal a secure attachment style; however, high levels of anxious and avoidant attachment reveal a “disorganized” attachment often characterized by inappropriate expressions of attachment behavior (Bakermans-Kranenburg & van IJzendoorn, 2009). Factors of anxious, avoidant, and insecure attachment styles are related to psychopathy. Traits such as low empathy, low commitment, and interpersonal cynicism, which is evident in avoidant attachment as well as an unwillingness to help and increased aggression, which is clear in insecure attachment, are similar to psychopathic traits. Christian et al. (2017) conducted a study that aimed to clarify the associations between individual differences in attachment styles and psychopathy. It was hypothesized that the affective/interpersonal features of psychopathy would be positively correlated with attachment avoidance. It was also hypothesized that attachment anxiety would be negatively correlated with

affective/interpersonal features of psychopathy. Results indicated that individuals with higher levels of affective psychopathy are more likely to become attachment avoidant as attachment anxiety decreases; therefore, attachment anxiety may be viewed as a protective factor in this case. Additionally, it was found that the behavioral features of psychopathy were positively correlated with attachment insecurity as they both consist of expressing emotions, especially anger, negatively (Christian et al., 2017). Given these results and the previous research regarding the attachment theory and psychopathy, differences in attachment style can be used to understand interpersonal relationships between psychopathic individuals and those they come in contact with. This information can be useful in intervention or treatment practices as clinicians may be able to predict how those with high levels of psychopathy may behave in interpersonal relationships depending on their attachment style.

While research on the relationship between the attachment theory and psychopathy has recently received slight attention in the realm of psychopathy research, there is little to no research associating specific early life events and psychopathic traits. Therefore, Christian et al. (2017) conducted a study to assess the association between psychopathic traits and major life events during the first four years of life and how the event affected the parent-child relationship. Results indicated a significant correlation between multiple PCL: YV psychopathy scores and early life events. Researchers also found an association between the total number of significant life events and higher scores on the affective facet of psychopathy (Christian et al., 2017). Although, minor, these results open the door to future research regarding life events and how those events can impact attachment styles. In turn, analyzing insecure attachment styles can provide insight to the minds of psychopathic individuals.

The lack of attachment or lack of responsiveness to the mental states of others, which is a

prominent trait of psychopathy, is also theorized to lead to greater interpersonal aggression (Taubner, White, Zimmermann, Fonagy, & Nolte, 2013). Interpersonal aggression can be described as a premeditated, cold aggression used as a means to attain one's goals at the expense of another (Blair, Mitchell, & Blair, 2005). Insecure attachment may, in turn, hinder the development of relating to the mental states of others, also called mentalization. Mentalization is important in normally and healthily functioning individuals and may act as a protective factor for antisocial behavior. Mentalizing is defined as, "the capacity to relate to others (especially attachment figures) by grasping their behaviors as the product of mental states, while bearing in mind the necessarily inferential nature of this process (Fonagy, Target, & Gergely, 2007). An early secure attachment with a caregiver allows healthy development of mentalization and aids in the ability to feel the distress of others as one's own. Research indicates that early attachment relationships typified by abuse, neglect, and violence may cause an inhibition or dysfunction in the development of mentalizing resulting in failure to resonate with the mental and emotional states of those around them (Gergely & Unoka, 2008).

Due to this lack of mentalization, it is theorized that psychopathic individuals have a lower threshold for committing violent acts against others. Taubner et al. (2013) conducted a study that consisted of 104 adolescent males and females and aimed to assess whether mentalization linked to attachment relationships can function as a moderator for the relationship between interpersonal aggression and psychopathic traits in adolescents. Results indicated that deficits in mentalization were greatly related with aggression and psychopathic traits. Conversely, those with high levels of mentalization were observed to have an inhibitory effect on the expression of psychopathic personality traits, such as aggression. While the theories of psychopathy can hypothesize the etiology and affects of the disorder, more research must be

conducted to consider them concrete facts. A model that has garnered further attention in the research community is the Triarchic Model of Psychopathy.

Triarchic Model of Psychopathy

Much of the research regarding psychopathy is considered a contentious debate. The Triarchic Model of Psychopathy posits that psychopathy incorporates three phenotypic concepts: disinhibition, which reflects a general propensity toward problems of impulse control; boldness, which is defined as the connection between social dominance, emotional resiliency, and venturesomeness; and meanness, which is defined as aggressive resource seeking without regard for others (Patrick, Fowles, & Krueger, 2009).

Disinhibition. In the Triarchic Model of Psychopathy, disinhibition is used to describe, “a general phenotypic propensity toward impulse control problems entailing a lack of planfulness and foresight, impaired regulation of affect and urges, insistence on immediate gratification, and deficient behavioral restraint” (Patrick et al., 2009). In regard to personality, disinhibition can be viewed as the connection between impulsivity and negative affectivity (Sher & Trull, 1994). Some factors of disinhibition that would be prominent behaviorally consist of: irresponsibility, impatience, impulsive action leading to negative consequences, alienation and distrust, aggressive acting out (in particular, angry–reactive aggression), untrustworthiness, proneness to drug and alcohol problems, and engagement in illicit or other norm-violating activities (Krueger, Markon, Patrick, Benning, & Kramer, 2007). As already stated, The Triarchic Model is a three-factor model; therefore, disinhibition in one’s behavior by itself would not qualify for a diagnosis. It is when these tendencies are coupled with boldness and meanness that a diagnosis of psychopathy would be considered.

Boldness. Boldness is used to describe an individual's capacity to "remain calm and focused in situations involving pressure or threat, an ability to recover quickly from stressful events, high self-assurance and social efficacy, and a tolerance for unfamiliarity and danger" Boldness could also be described as fearless dominance, audacity, daringness, and resiliency (Patrick et al., 2009). Prominent behavioral factors of boldness can include: assertiveness, persuasiveness, or extreme bravery. Although boldness might seem synonymous with the term 'fearless', fearlessness is only a feature of this trait that is explained by a decreased sensitivity in the brain to punishment or threatening stimuli (Fowles & Dindo, 2006). Cleckley's idea of psychopathy emphasized that boldness is highlighted by disinhibitory behavior and externalizing predispositions. He also posited that boldness was evident in his experimental case studies and it was accompanied by imperviousness to punishment, high social efficacy, and absence of anxiety or neurotic symptoms (Patrick et al., 2009). As well as being phenotypically related to fearlessness, boldness is also related to meanness.

Meanness. In the Triarchic Model, the term meanness describes "a constellation of phenotypic attributes including deficient empathy, disdain for and lack of close attachments with others, rebelliousness, excitement seeking, exploitativeness, and empowerment through cruelty" (Patrick et al., 2009). Some behavioral traits that exemplify this concept are: coldheartedness, antagonism, or callousness (Patrick et al., 2009). According to research, people who display this trait may do so because they pursue pleasurable and satisfying experiences with no regard for others. Meanness also necessitates active confrontation and allows for the individual to seek manipulative situations (Horney, 1945). Many items in the PCL-R include aspects of meanness in their definitions. Items 1, 2, and 5, which are glibness and superficial charm, grandiose sense of self-worth, and conning/manipulative all encompass features of meanness. Elements of

meanness are also very similar to CU traits, which are one of the main correlates of antisocial personality disorder. While sometimes these traits are exhibited without a known cause, there are some contributing factors to be aware of.

Contributing factors to disinhibition and meanness. Difficult temperament is one of the main contributing factors to behaviors of disinhibition and meanness. Difficult temperament can maintain features including: irritability, high negative affect, withdrawal from novel stimuli, poor attention, and difficulty adapting to environmental changes (Patrick et al., 2009). Research suggests that these features of difficult temperament point to complications regarding emotional regulation and the regulation of anger (Frick & Morris, 2004). Emotional control can inhibit healthy behavior in a variety of ways and the most severe difficult temperaments will combine strong automatic negative reactivity and weak effortful control of behavior. Emotional regulation deficits also increase the risk of youth developing conduct problems and conduct disorder; therefore, difficult temperaments that involve poor emotional regulation increase the risk of antisocial behavior in adulthood. The combination of conduct problems, emotional dysfunction, and poor anger regulation creates the perfect storm that is likely to develop into behavior that meets the criteria for psychopathy later in life (Patrick et al., 2009). Another factor that contributes to disinhibition and meanness is the failure to develop secure attachments in childhood.

Unsuccessful secure attachment. Secure attachment, which is assessed at the age of 1, is viewed as, “providing the infant with a secure base for exploring the environment and a major source of comfort when distressed, fearful, or ill” (Patrick et al., 2009). Similarly to the previously discussed factor of poor emotional regulation, difficult temperament can also lead to poor attachment to an infant’s caregiver. Research indicates that a difficult temperament is

problematic for a new parent and necessitates greater parenting ability than an infant with a more relaxed or pleasant temperament. The absence of greater parenting skills can produce unfavorable effects on the interaction between the parent and infant, which can lead to insecure or “anxious” attachment characterized by excessive anger, clinging, and/or avoidance behavior from the infant (Patrick et al., 2009). Circumstantial risk factors that can increase the risk of insecure attachment are low socioeconomic status and stressful life events. In addition, abusive and neglectful households can also produce adverse effects on the temperament of the infant. It can be argued that some of the traits that psychopathic individuals exhibit, such as callousness and hostility, can be reflective of a failure to develop positive attachments throughout their lives. Therefore, the inability to establish secure attachment can be a risk factor for some of the interpersonal components of psychopathy. Although by itself poor attachment is unlikely to cause psychopathy or antisocial behaviors later in life, the progression of poor attachment in infancy opens the door to future failures regarding developing positive and healthy relationships.

Validity of the Triarchic Model across cultures. The construct of psychopathy and ways to operationalize the disorder are still largely unknown in East Asian countries; however, as time progresses, more and more research is being conducted. In addition, several measures of psychopathy, such as the PCL-R, have also been translated into different languages. As research continues, it is important to measure the validity and applicability of measures that are used in the United States to see if they provide the same results across cultures; however, the evidence of validity of these measures is still questionable. Shou et al., (2017) aimed to examine the validity of the Triarchic Psychopathy Measure (TriPM) based on the Triarchic Model of Psychopathy in Chinese clinical and nonclinical samples. Researchers conducted two studies to further their investigation. Study 1 assessed the reliability and validity of the TriPM in a sample of psychiatric

patients. In addition, researchers examined the divergent and convergent validity of the TriPM by measuring its associations with another measure of psychopathy and various externalizing behaviors. Study 2 examined the construct validity of the TriPM in a sample of university students. The divergent and convergent validity of TriPM scores were then compared to measures such as: risk taking behaviors, fearlessness, and the Chinese version of the Interpersonal Reactivity Index. Additionally, the association between TriPM scales and *Renqing* were examined. *Renqing* is a culturally specific personality construct that reflects affection and attribution in relationships and is universally identified among Chinese individuals. Essentially, *Renqing* reflects the need of both parties in the relationship to exhibit sympathy and suitable emotional feelings for others as well as caring for others and treating them generously. In order to get along well with Chinese people, one must demonstrate good practice in *Renqing* (Shou, Sellbom, Xu, Chen, & Sui, 2017).

Results of Study 1 indicated that the TriPM presented favorable reliability and variability within a sample of psychiatric patients. Internal reliability measured at acceptable and statistically significant levels for each of the three scales that were examined. When scores of TriPM scales of male and female participants were compared, males scored significantly higher on disinhibition and TriPM total scores. However, there were no significant gender differences between the scores of TriPM boldness and meanness (Shou et al., 2017). Results of Study 2 indicated TriPM boldness established considerable conjunction with the measure of fearlessness. Additionally, participants that scored higher in boldness were more likely to resist distress in response to others. Boldness also did not have a significant association with antisocial or risky behaviors, which indicates that boldness represents an expression of psychopathy that differs from the low impulse control that is exhibited in disinhibition. Therefore, low sensitivity to

threats does not necessarily lead to externalizing behaviors (Shou et al., 2017). Similarly to the results of Study 1, disinhibition best foretold the externalizing behaviors measured in risky and antisocial behaviors, which is reflected by impulsiveness. Finally, there was a significant correlation between meanness and Renqing, which indicates that TriPM meanness is associated with attitudes that are irregular with the normal Chinese social structure (Shou et al., 2017). Both studies provided evidence of validity and reliability of the TriPM in China. Although research regarding psychopathy is relatively limited in Asian cultures, research that is available provides bridges that are exponentially useful for clinicians and those who are affected by psychopathy.

Similarly, the construct validity of the TriPM was measured in a Lithuanian correctional sample. Two samples of participants were used in this study. Sample 1 consisted of 99 male inmates who were offenders of a violent crime. Sample 2 consisted of 100 male inmates from a different correctional facility who also were offenders of a violent crime (Sellbom, Laurinavicius, Ustinaviciute, & Laurinaityte, 2018). After administering several measures to the offenders, results indicated that the Lithuanian TriPM exhibited a pattern of validity that was consistent with past research regarding the TriPM. Reliability was in acceptable range for Disinhibition and Meanness; however, the reliability for Boldness was considerably lower. This finding is consistent with previous research regarding the Chinese TriPM (Sellbom et al., 2018). Additional research must be conducted in order to determine if this discovery is due to cultural variance. This study has numerous implications for how the Triarchic Model relates to those in Eastern Europe, which like East Asian countries is an understudied population.

The Triarchic Model of Psychopathy postulates that psychopathy includes the three phenotypic dispositions: disinhibition, boldness, and meanness. As previously mentioned, the combination of poor secure attachment, low fear ceilings, and difficult temperament endorses a

callous attitude toward others, which is likely to support further antisocial behaviors. However, because of the variability of temperament across individuals and cultures, a broad array of phenotypic outcomes may occur. In order to provide an improved understanding of psychopathy, it is also necessary to discuss the 4 facets of psychopathy.

4 Facets of Psychopathy

Initially, Dr. Robert Hare defined a two-factor model of psychopathy. These factors included: Factor 1, which consists of affective and interpersonal traits and Factor 2, which consists of antisocial and lifestyle traits (Seara - Cardoso & Viding, 2015). Hare then divided the PCL-R into 4 subscales, which he deemed “facets”. These facets are demonstrated in terms of the two-factor dimensions of psychopathy. The four facets of psychopathy, affective, interpersonal, life-style, and antisocial, have been defined by the PCL-R following extensive research on criminal samples in numerous countries and represent separate groupings of psychopathic expression (Patrick, Fowles, & Krueger, 2009). Facets 1 and 2 represent a subgroup of Factor 1 and Facets 2 and 3 signify a subgroup of Factor 2. Facet 1, affective, includes characteristics such as lack of remorse or guilt, shallow affect, callousness, and lack of empathy. Facet 2, interpersonal, includes characteristics such as superficial charm, grandiose sense of self-worth, pathological deception, and manipulation of others. Facet 3, lifestyle, comprises features such as: need for stimulation, parasitic lifestyle, lack of realistic long-term goals, impulsivity, and irresponsibility and facet four includes poor behavioral controls, early behavior problems, juvenile delinquency, and criminal versatility. Research indicates that the four facets may be related to recurring aggressive acts and dominant brain-behavior models of psychopathy (Sreenivasan, Walker, Weinberger, Kirkish, & Garrick, 2008).

Research regarding antisocial behavior, Facet 4, indicates that it may play more of a role in violence risk assessments than the other facets. Sreenivasan et al., (2008) conducted a study in which participants were comprised of two sample groups. Sample 1 consisted of 216 male forensic patients who were all either judged incompetent to stand trial, not guilty by reason of insanity, or dangerous to self or others as part of a civil commitment proceeding. Sample 2 consisted of 230 male inmates who had been referred by the federal courts for a pretrial psychiatric evaluation. Participants in sample 1 were then scored using the PCL-R and each item was rated to form facet 1, facet 2, facet 3, and facet 4 scores. Sample 2 participants were scored using the PCL-R and then had item ratings, which formed a facet 1, facet 2, facet 3, and facet 4 score (Sreenivasan et al., 2008). Results for sample 1 indicated that facet 4 attained significance in two out of four analyses regarding violent recidivism and facets 1-3 only attained significance in one out of four analyses (Walters & Heilbrun, 2010). Although results were modest, this study supports previous research that the antisocial facet of psychopathy may be a more useful measure in violence risk assessment as well as predicting violent behavior.

A similar study was conducted and aimed to test the explicit contributions of the PCL-R facets to expressions of violence in criminal offenders. The study also examined whether the facets are related differentially to the persistence of violence (Sreenivasan et al., 2008). Participants consisted of 126 inmates who met the criteria of highly violent acts and had no history of severe psychiatric illness. Results indicated that levels of violence were significantly related to facet 2, interpersonal. Features of facet 2 such as, shallowness and a lack of remorse, may be essential in the identification of the risk for multiple violent acts against others. Additionally, features of glibness in facet 1, irresponsible lifestyle of facet 3, or the antisocial behavior of facet 4 may be indicative of criminal activity (Sreenivasan et al., 2008). It was also

found that facet 2 features, such as shallowness and a lack of remorse, might reflect emotional underarousal. As previously stated in the arousal theory, low emotional arousal has been connected to high violence and is a unique feature in criminal psychopaths. Contrastingly to research previously stated in the last study, it was shown that elevated facet 2 scores might prove beneficial to violence risk assessment. The lack of significant correlations between violence and facets 1, 3 and 4 indicate that facet 2 is a stronger correlate to recidivistic violent behavior (Sreenivasan et al., 2008). There is also research regarding the facets of psychopathy and the relationship between other mental disorders and criminal recidivism.

Wallinius et al., (2012) conducted a study that aimed to examine the relationship between the four facets of psychopathy, other mental disorders, and criminal recidivism. All participants were males who were found guilty of violent or sexual crimes. All participants had a history of various mental disorders and overlap between disorders. Results indicated that when PCL-R scores were compared between subjects, significantly higher scores for all facets of psychopathy were found in those who had a prior diagnosis of conduct disorder in childhood (Wallinius, Nilsson, Hofvander, Anckarsäter, & Stålenheim, 2012). Additionally, anxiety disorders as well as Cluster B and Cluster C personality disorders were not significantly associated with any of the facets. Furthermore, at a follow-up interview, it was discovered that 22% of participants committed at least one more violent crime and 14% committed non-violent crimes. Results revealed that the antisocial facet predicted violent recidivism more than any other facet. Results further indicated that the interpersonal facet was the most unique feature of psychopathy while the other facets were more related to substance use, lack of control, and impulsivity (Wallinius et al., 2012). This study mirrors previous research regarding the associations between mental disorders and psychopathy, where the main difference is that psychopathy is not a unitary

syndrome. As well as not being considered a unitary syndrome, there are also various traits of psychopathy that must be examined.

Traits of Psychopathy

Callous-Unemotional traits. Callous-Unemotional (CU) traits are characteristics that if found in children, are considered the defining symptoms of juvenile psychopathy, which can ultimately lead to adult psychopathy. These CU traits, such as uncaring attitudes and lack of empathy and guilt are considered to be the evidence that best distinguishes children who are likely to demonstrate aggressive conduct problems later in adolescence and into adulthood (Frick, Cornell, Barry, Bodin, & Dane, 2003). Although conduct problems and CU traits that are presented in childhood usually lead to antisocial behaviors in the future, many children who exhibit these traits do not engage in severe delinquency into adulthood. However, it is important to intervene as soon as possible in order to inhibit further behaviors from occurring. Given the potential importance of early diagnosis and the propensity of those youth who display CU traits to develop them further into adulthood, it is important to understand them as a tool for early intervention and how the instruments currently available might allow for such action.

There are many theories as to what factors exacerbate CU traits or conduct problems (CP) in adolescents. Abnormalities in reward and punishment processing are one of the main factors that have been studied in relation to the development of CP in youth who exhibit CU traits (Byrd, Hawes, Burke, Loeber, & Pardini, 2018). “Researchers have suggested that a heightened sensitivity to reward and reduced sensitivity to punishment (i.e., loss of a desired stimulus or presentation of an unpleasant stimulus) increase risk for the development and persistence of CP” (Byrd et al., 2018). Previous studies regarding behavior have found that adolescents exhibit a more intense attraction for large, immediate rewards using risk taking behaviors and struggle to

hinder a previously rewarded response while facing increasing punishment during passive avoidance and response reversal behaviors (Byrd et al., 2018). Although previous intervention techniques have focused on cognitive behavioral therapy (CBT) and parent management training (PMT), it is supported by research that these techniques are not effective at reducing CU traits for all youth. It has been suggested that children with CP that exhibit CU traits might react positively to reward-based intervention and more negatively to punishment-based strategies (Hawes et al., 2014).

In order to address gaps in the literature, functional magnetic resonance imaging (fMRI) was used to analyze neural response to rewards and punishments among pre-adolescent boys with CP and varying levels of CU traits, and healthy controls (Byrd et al., 2018). Byrd et al., (2018) hypothesized, “CP would be associated with reduced sensitivity to punishment and greater sensitivity to reward as evidenced by decreased amygdala activation to punishment, increased striatal activation to reward and reduced activation to both reward and punishment” Additionally, it was hypothesized, “neural abnormalities would be most pronounced in those boys with CP and high CU traits”. The sample consisted of 64 boys; ages 8-11, 37 of which exhibited CP and 27 boys matched healthy controls. CP youth were deemed eligible by the study if they presented with clinically significant behavior problems such as: rule breaking, conduct problems, aggressive behavior, and T-scores >70 according to the Child Behavior Checklist (CBC-L) (Achenbach, 1992). Healthy controls were enlisted from local pediatricians’ offices in the community and matched CP children in regards to race and age.

After completing a baseline assessment, which measured CU traits, CP, and covariates, an fMRI scan was completed. CP children were then randomly assigned to one of two possible treatment groups: 1) a multimodal CBT/PMT intervention (i.e., SNAP; n = 21) or 2) standard

services (SS; n = 16) in the community as a part of the larger treatment study. CP children were then assessed three months later after treatment was completed. Children in the SNAP program were exposed to a multimodal approach based on two components: 1) child CBT groups emphasizing self-control skills and problem-solving techniques; and 2) parent PMT groups focused on behavioral strategies for consistent reward and punishment implementation (Byrd et al., 2018). Children in the SS treatment group were exposed to “assistance from project staff in their efforts to engage in treatment services, with a focus on securing evaluations to determine eligibility for wraparound services available in the local community (i.e., ~10 service hours per week)” (Byrd et al., 2018).

Results were consistent with the hypothesis and indicated reduced amygdala activation to punishment among boys who exhibited CU traits and CP based on results of the fMRI scans. Contrastingly, the study failed to support the hypothesis that neither punishment nor reward sensitivity is exclusively distinguishing among CP youth with high CU traits. There was also no link between neural response to punishment or reward and treatment outcome. However, children assigned to the SNAP treatment program did exhibit greater reductions in CP. The current study as well as previous research suggests amygdala dysfunction is a likely contributor to a number of behavioral deficits that may trigger the expansion of CP and CU traits. Additionally, research suggests that these abnormalities are present in children as young as 3 years old and aid in foreseeing criminality and antisocial behaviors in adulthood. (Gao, Raine, Venables, Dawson, & Mednick, 2010). There are also a number of other factors that research suggests can relate to the development in CU traits in children.

According to the *Journal of Youth and Adolescence*, when examining whether maternal care relates to CU total scores among child offenders, boys who reported that their mothers were

“less warm, affectionate, and involved in their lives” tended to score higher on CU traits (Kimonis, Cross, Howard, & Donoghue, 2013). Emotional neglect was most strongly correlated with the presence of CU traits in male youths (Kimonis et al., 2013). Callous-Unemotional traits could also be linked to heritability. While genetic influences do play a part in the heritability of CU traits, environmental influences play a role as well. High consistency of CU traits appears to be related to significant genetic influences, while environmental influences seems to be related to antisocial behavior (Herpers, Rommelse, Bons, Buitelaar, & Scheepers, 2012). In addition to antisocial behaviors, CU traits are also related to a lack of empathy.

Lack of empathy. Empathy, which is described as the ability to understand and share in another’s emotional state, is one major attribute that is lacking in the psyche of a psychopath. While a healthy individual responds to sadness and fear in others and avoids partaking in behaviors that enflame these emotions, the social callousness of psychopathic individuals may thwart them from empathizing with others (Roney, Falkenbach, & Aveson, 2018). Research proves that children should start to exhibit empathetic traits as early as two days of age. As further development occurs, infants have been proven to display genuine worry over the discomfort of others. By two years old, children attempt to comfort others who show signs of distress (Eisenberg & Mussen, 1989).

Since individuals have differing levels of empathy, it is important to measure the scale in which it is experienced within psychopathic individuals. In a study conducted by Knight (2014), researchers used an fMRI machine to scan the brains of 121 inmates while they looked at photos that showed a painful moment such as jamming one’s finger in a drawer or stepping on a nail. The inmates were then instructed to imagine that the scenario in the picture was happening to them and then to imagine that the scenario was happening to another person. In non-

psychopathic individuals, the act of thinking of these painful situations would elicit empathy. In the inmates who scored the highest on a standard test for psychopathy, they measured showing a normal response in pain perception when imagining the pain happening to them. However, when imagining it happening to another person, the connections in their brains between the amygdala and prefrontal cortex were not shown to illicit a bond. Since the amygdala is responsible for interpreting fear and emotional processing and the prefrontal cortex is responsible for emotional regulation, morality, and empathy, this proves that there is a gap in these regions for psychopaths. The study even concluded that some results showed the pleasure centers of the brains of psychopathic individuals being activated when the participants were shown the painful events happening to others.

Some theories suggest that emotional and empathic deficits develop because of an inability to process the distress of another person. In addition, a lack of arousal to the distress of others could also be a reason for a lack of empathy (Dawel, Wright, Dumbleton, & McKone, 2018). In the Theory of Affective Features of Psychopathy, it is proposed that similarly to the affective features that are prominent in psychopathy, impairments in processing other individual's distress cues, such as fearful and sad expressions, is also a main feature. Non-psychopathic individuals typically experience negative arousal to the distress of others. This aversive arousal acts as a punisher to stop the antisocial behaviors that is causing the distress from happening, which encourages the person exhibiting the antisocial behaviors to stop (Blair et al., 1995).

Although psychopathic individuals have deficits eliciting affective empathy, which is the ability to feel and care about how others feel, research has suggested that they are well adept in displaying cognitive empathic skills. Cognitive empathy is defined as, "the ability to describe

what and why other people feel, even if one does not share or care about those feelings” (Dadds et al., 2009). In order to display cognitive empathy, one has to understand the mental state of another. Research indicates that there are two forms of cognitive empathy. The first includes conclusions drawn from another’s emotional state and the second includes conclusions drawn from the complex intentions and beliefs of others (Brook & Kosson, 2013). While attempts at quantifying cognitive empathy have depended on self-reporting measures, there is controversy regarding an individual’s ability to understand and report on such cognitive processes. To date, the most validated measure of cognitive empathy is the empathic accuracy paradigm, which measures the ability to accurately infer emotional states from videotaped recordings of unknowing participants (Brook & Kosson, 2013). In a study of 103 incarcerated male offenders aiming to verify impaired cognitive empathy in psychopathy, results indicated that psychopathy was related to approving fewer emotions in response to the emotional demonstrations of others. This signifies that as well as judging the emotions of others less accurately, psychopathic individuals also have difficulty understanding the full spectrum of emotions as a whole (Brook & Kosson, 2013). The ability to demonstrate cognitive empathy can have an extreme effect when psychopathic individuals select their victims.

In regard to victimization, research indicates that psychopaths are selective when choosing which person to victimize. Victim selections of psychopathic criminals contrasts with victim selection of non-psychopathic criminals in the regard that psychopathic criminals tend to victimize strangers and are infrequently driven by emotion (Williamson, Hare, & Wong, 1987). This suggests that psychopathic criminals may specifically choose victims who they perceive to be vulnerable targets. Researchers have theorized that this selection may be the result of the lack

of empathy felt by psychopaths, which causes them to gain possible satisfaction in the suffering of others (Williamson et al., 1987).

Although empathy begins early in life, there is still a scale as to how much an individual possesses the ability to show concern and share another's emotional state. Therefore, the strong occurrence of lack of empathy either acts as a strong protective or risk factor for antisocial behavior patterns later in life (Saltaris, 2002). In past research, empathy has been linked to aggressive behavior with results showing that those with empathetic deficits tend to be more callous and have more violent tendencies (Widiger & Lynam, 1998). Empathetic deficits, although on a continuum, are typically related to children with other conduct issues. In order for intervention to successfully occur, infants showing signs of an empathic deficit should begin behavioral therapy as soon as possible to change the trajectory of their path.

In children, lack of empathy is visible in disruptive behavior disorders such as conduct disorder, and one of the features of CU traits. Therefore, the ability to treat this feature may be derived from treatment methods for conduct problems. However, to date, no psychological or definitive treatment has been proven for children exhibiting CU traits, which exemplifies another gap in research. Although treatment plans are limited, research has indicated that children and adolescents with raised levels of CU traits are not untreatable. When rigorous, unique treatment plans are tailored to each child's motivational, cognitive, and emotional styles, treatment will be the most successful (Pisano et al., 2017). One example of a treatment plan that has had some recent success is the Coaching and Rewarding Emotional Skills (CARES) Module.

The CARES Module is a training program, which assists empathy and emotional development in young children with CP and CU traits. The key treatment aims of the CARES Module are as follows: (a) to enhance attention to critical facial cues signaling distress in child,

parents and others, to improve emotion recognition and labeling; (b) improve emotional understanding by linking emotion to context, and by identifying contexts and situations that elicit child anger and frustration; (c) teach prosocial and empathic behavior through social stories, parent modeling, and role play; (d) increase emotional labeling and prosocial behavior through positive reinforcement; (e) and increase child's frustration tolerance through modeling, role-playing, and reinforcing child's use of learned cognitive-behavioral strategies to decrease the incidence of aggressive behaviors (Pisano et al., 2017). When employed in children from 3.5 to 8 years of age with abnormal levels of CU traits, such as lack of empathy, conduct problems, as a whole have been reduced.

In addition to the CARES Module, the Mental Models intervention program was tested and aimed to improve conduct problems and CU traits in youth. 12 sessions that included cognitive behavioral training, motivational techniques, and instruction on positive emotion were employed on groups consisting of 6 children. In the motivational component of the session, youth were simply motivated to participate in their treatment plans. The motivation techniques included discussions regarding brain development, and new neural connections that could present through the process of active learning. Weekly exercises were also geared toward positive emotions and interaction styles, which included communication activities, writing assignments, problem solving activities, and identification of emotions. Children were also asked to create their own goals and make plans for the future in order to accomplish those goals (Salekin, Tippey, & Allen, 2012). Positive outcomes for this treatment strategy included reduced interpersonal CU traits and an improved willingness for treatment. Although these programs are not treatment for lack of empathy in and of itself, they aim to treat conduct issues where lack of

empathy is present. A lack of empathy can also lead to moral reasoning deficits in psychopathic individuals because of their inability to process emotions accurately.

Moral reasoning deficits. Poor moral reasoning has been considered one of the main traits of psychopathy since the term “moral insanity” was coined in 1835. Research now suggests that alternatively to being amoral, disordered individuals lack a violence inhibition device, which causes them to consider all transgressions as moral. This amorality leads to the psychopathic individual being capable of anything, as he is not restrained by the moral compass in which healthy individuals generally lead their lives. To examine this, psychopathic participants and non-psychopathic controls were evaluated in a prison setting on their ability to attribute emotions to others (Blair et al., 1995). In this study, 25 psychopathic criminals and 25 incarcerated controls were shown vignettes of happiness, sadness, embarrassment, and guilt provoking circumstances. They were then asked to qualify the protagonist with an emotion. Results signified that psychopathic individuals and controls did not vary in their responses when qualifying the protagonist with emotions of happiness or sadness. However, they did vary in regard to emotions of embarrassment and guilt. The controls attributed the protagonist as guilty and the psychopathic criminals attributed the protagonist as happy or indifferent (Blair et al., 1995). The present study proposes that psychopathic individuals are not wholly void of experiencing emotion; however, it is debatable whether experience can be assessed through the capability to attribute emotion to others. Rather, their moral reasoning and their ability to qualify emotions might be deficient. Comparatively, research indicates that the cause of a psychopathic individuals moral deficiency is an emotional impairment that inhibits their capacity for planning and decision-making (Glannon, 1997). As the brain is interconnected, the ability to understand and process emotion, reason, and decision-making is also interrelated.

Lack of remorse or guilt. Emotional deficits such as shallowness or lack of remorse or guilt are primary characteristics of the personality of a psychopathic individual. It is theorized that this may be due to an inability to associate links between external stimuli and internal reactions (Patrick, 1994). Researchers have sought to understand why psychopathic individuals have emotional deficits and what causes them. Habel et al., (2002) aimed to examine emotional processing in psychopathic individuals. It was hypothesized that psychopathic individuals would exhibit compromised emotion discrimination and reduced emotional reactivity to positive or negative mood stimulation when compared to healthy controls. Results of this study indicated that those with psychopathic personalities displayed impaired emotion-discrimination performance on the mood-induction inquiries. Emotional-discrimination responses also increased when an individual had greater emotional detachment(Habel, Kühn, Salloum, Devos, & Schneider, 2002). The results showed strong support of emotional-processing deficits that affect psychopathic individuals. In addition to traits of psychopathy that researchers and the public must be aware of, it is of equal importance to consider any comorbid symptoms or diagnoses that are evident in these individuals.

Comorbidity

Within the penal and mental healthcare systems, mentally disordered offenders constitute a group that present with different mental disorders, substance abuse problems, psychosocial problems, and antisocial patters of behavior. Psychopathy and the convergence with other mental disorders lead to more severe violence and antisocial behavior patterns. While a person with the diagnosis of psychopathy may sometimes only be observed as a psychopath, in many circumstances there are also comorbid diagnoses that the individual suffers from. Comorbidity can be explained by Borsboom and Cramer's networks perspective, which proposes that the

symptoms and traits of disorders can represent a multifaceted network of interrelated feelings, thoughts, and behaviors that are linked not only with each other, but also with symptoms and traits of other disorders. For example, according to the network perspective, traits and symptoms that are shared by both antisocial personality disorder and borderline personality disorder, such as impulsivity and hostility, act as ‘bridge symptoms’ that connect the two disorders (Borsboom & Cramer, 2013).

In many forensic samples, individuals diagnosed with psychopathy suffer from other disorders such as antisocial personality disorder, borderline personality disorder, histrionic personality disorder, as well as other mood, anxiety, and thought disorders. The co-occurrence of these disorders can reflect higher risk factors than if only psychopathy affected the individual. For example, antisocial/borderline comorbidity has been found to be related to severe violence as well as drug and alcohol dependence, particularly severe childhood conduct disorder, and cognitive disturbances (Freestone, Howard, Coid, & Ullrich, 2013). A study conducted by Howard et al., (2014) aimed to identify patterns of personality disorder comorbidity associated with severe violence, defined by severity and age of onset. Results of their study suggested that the antisocial deviance factor of PCL-R psychopathy and the comorbidity of antisocial personality disorder and borderline personality disorder are independently associated with early onset and severe violence in forensic psychiatric patients. Additionally, those patients who exhibited disinhibited deviance from a young age, indicated by severe conduct disorder in childhood, together with antisocial/borderline comorbidity in adulthood, suffer from a severe form of secondary psychopathy. These results confirm past findings from Baskin-Sommers et al. (2013) signifying an importance of personality disorder comorbidity in violence severity among offenders. Results further indicate that antisocial/borderline personality disorders comorbid with

psychopathy is associated with greater overall personality disorder severity, more severe childhood conduct disorder, and higher levels of impulsiveness and past violence (Howard, Khalifa, & Duggan, 2014).

There is often a gender bias that is illuminated within psychopathy, as it is generally associated with males; however, the performance and structure of psychopathy in women is also an area of study. In a study conducted by Warren et al., (2003), researchers aimed to determine similarities and differences in the construct of psychopathy in how it applies to men and women in relation to the comorbidity of psychopathy and other personality disorders. The findings of this study suggested a strong degree of similarity of the prevalence of psychopathy among incarcerated women when compared to men. Additionally, it was found that promiscuity, engaging in several marital relationships, and criminal versatility were indicators of psychopathy in women. In regard to comorbidity, results indicated that in women, the construct of psychopathy is a combination of diagnostic criteria related to antisocial, narcissistic, histrionic, paranoid, borderline, and schizotypal personality disorders. These results illustrate a high correlation, at least in women, between psychopathy acting on a continuum beginning with general antisocial personality patterns that is made more malignant when combined with the lack of concern for others and grandiosity that is inherent in narcissism (Warren et al., 2003). Again, these results support the idea that psychopathy is a collection of malignant personality traits rather than a distinct, single construct.

There are also gender differences in how individuals demonstrate sexual behaviors. In regard to sexual behavior, psychopathy is generally associated with sexual aggression, sexual harassment, sexual coercion, and positive attitudes toward predatory sexual behavior (O'Connell & Marcus, 2016). While much of the research regarding sexual manipulation has focused on

attacks against women, women are equally capable of committing these acts. In fact, abnormal sexual behaviors have been associated with disorders that are diagnosed more frequently in women than in men, such as borderline personality disorder (BPD) (Lieb, Zanarini, Schmahl, Linehan, & Bohus, 2004). BPD has been connected with sexual esteem, sexual preoccupation, and higher levels of sexual assertiveness. Individuals with borderline personality disorder generally alternate between extremes of idealization and vilification of their partners; therefore, intimacy for an individual with BPD can be motivated by a need to achieve emotional security and/or sexual impulses (Agrawal, Gunderson, Holmes, & Lyons-Ruth, 2004). When an individual has a comorbidity of psychopathy and BPD, they may have a compulsory need for intimacy that rises from the desire to dominate their partner (Miller et al., 2010). BPD has also been more positively correlated with primary psychopathy rather than secondary psychopathy, however this generally varies by sex. For example, men with BPD are more likely to have psychopathy and narcissism comorbidities, while women display traits such as impulsivity and emotional dysregulation (Silberschmidt, Lee, Zanarini, & Schulz, 2015). Khan et al., (2017) found that a comorbidity of BPD and primary psychopathy traits were differentiated by sex. They discovered that only women reported to attempt to gain sex when obstructed, only men reported being open to infidelity, and both sexes reported the end of a relationship due to their partners being 'seduced away' (Khan, Brewer, Kim, & Centifanti, 2017).

While psychopathy is often experienced in comorbidity with other personality disorders, there is less research pertaining to its comorbidity with mood disorders. Although mood disorders are among the most common disorders of the general population, it has been proclaimed that psychopathic individuals are devoid of depressive symptoms thereby making psychopathy and depression dissimilar and separate constructs (Butler et al., 2006). Even

Cleckley in *The Mask of Sanity* described psychopathic individuals as beings incapable of experiencing depressive symptoms. He states:

Even in situations of squalor and misery into which he repeatedly works himself when confined in jails, he does not show anything that could be called woe or despair or serious sorrow. He becomes vexed and rebellious and frets in lively and constant impatience when confined, but he does not grieve as others grieve (Cleckley, 1950).

In an aim to understand how a psychopathic individual experiences depressive symptoms, Willemsen et al., (2011) conducted a study in which they hypothesized that depressive symptoms were qualified differently in a psychopathic individual than they would be in a non-psychopathic person. Results indicated that total PCL-R scores were associated with ‘specific depression’; meaning lower PCL-R scores were related to more severe depression. Psychopathic individuals also experience depressive symptoms differently than the average person. A psychopathic individual may answer affirmatively when filling out a depression questionnaire, when he was actually experiencing irritation rather than depression. For example, in the previous study a participant answered that he felt down or depressed in the previous months and qualified this experience by stating, “in short moments, but that was due to noise nuisance”. Researchers also found effects of psychopathic traits on emotion word usage. For instance, men with higher scores in the affective and lifestyle facets of psychopathy used fewer sadness words. While results indicated a negative association between psychopathy and depression, this does not mean that the disorders are mutually exclusive, rather there are differences in the experience of a depressive episode for a psychopathic individual (Willemsen, Vanheule, & Verhaeghe, 2011).

As well as depression, there are mixed opinions regarding psychopathy and anxiety. In *The Mask of Sanity*, Cleckley wrote, “those called psychopaths are very sharply characterized by

the lack of anxiety (remorse, uneasy anticipation, apprehensive scrupulousness, the sense of being under stress or strain)” (Cleckley, 1950). While research has found that the callous interpersonal and emotional detachment that is common in psychopathy is associated with low anxiety levels, the impulsive and antisocial traits are more positively associated with anxiety (Sandvik, Hansen, Hystad, Johnsen, & Bartone, 2015). In a study conducted by Sandvik et al., (2015), researchers aimed to examine the relationship between psychopathy, psychological hardiness, and anxiety. In addition, imprisonment is generally perceived as unpleasant and has been linked to major stress. Since both psychopathy and psychological hardiness have been associated with the capability to remain unaffected in stressful situations, the study investigated how the characteristics of psychological hardiness were linked to the relationship between psychopathy and anxiety. As hypothesized, results indicated a negative relationship between interpersonal and emotional traits and anxiety, while a positive correlation was found between antisocial lifestyle and anxiety. This means that an unstable and antisocial lifestyle are seen as a risk factor for experiencing anxiety while interpersonal and emotional detachment may be a protective factor against anxiety. In addition, psychological hardiness and psychopathy were found to act as resiliency factors in relation to anxiety and undesirable health outcomes that are related to stress (Sandvik et al., 2015). Antisocial behavior was also found to be positively associated with anxiety and a strong comorbidity between antisocial personality disorder and anxiety disorders was found (Goodwin & Hamilton, 2003).

The literature has recognized that child psychopathy appears to have a similar set of personality traits and models as adult psychopathy and is also associated with similar statistics of past and future offending (Lynam & Gudonis, 2005). Although researchers have distinguished similarities between child and adult psychopathy, there are also important differences in regard

to how children/adolescents and adult psychopaths manage comorbid disorders such as internalizing disorders (Kosson, Cyterski, Neumann, Steuerwald, & Walker-Matthews, 2002). There appears to be high comorbidity in child psychopathy in regard to disruptive behavior disorders such as conduct disorder, oppositional defiance disorder, and attention deficit/hyperactivity disorder occurring with depression and anxiety (Washburn et al., 2007). It is interesting to note that research has found anxiety to be positively associated with child/adolescent psychopathy, while unassociated or negatively associated with adult psychopathy.

There have been some theories related to psychopathy and anxiety. Lykken (1957) theorized that psychopathic individuals experience similar levels of anxiety as non-psychopathic persons; however, their level of fear is lower than that of a healthy individual. Additionally researchers have theorized that the anxiety experienced by psychopathic individuals is context specific. This means that due to the number of stressful events that a psychopathic individual may experience due to their antisocial lifestyle, such as incarceration or familial dissonance, this causes high levels of negative affect. Therefore, individuals who score high on psychopathy measures may also score high on measures of trait anxiety (Lilienfeld, 1994). Consistent with this theory, any anxiety reported by the individual is caused by reflection of the outcomes of their antisocial lifestyle rather than personality or temperament. Kubak and Salekin, (2009) conducted a study, which assessed the relationship between anxiety and child/adolescent psychopathy. Results indicated that psychopathy arbitrates the relationship between anxiety and offending. In addition, surprisingly, higher levels of psychopathy were linked to higher levels of anxiety and higher levels of offending. This suggests that antisocial personalities and anxiety, in combination, signify common risk factors for future offending. However, to reiterate, this

anxiety may not be due to temperament, rather it is a reaction caused by the possible consequences of the individual's lifestyle. Further analyses revealed that when examining age, anxiety appeared to be less comorbid with those who were in late adolescence rather than those in their younger years (Kubak & Salekin, 2009). This may suggest that as an adolescent has more contact with the law, their anxiety levels lessen over time. This coincides with the adult literature, which shows a negative relationship between psychopathy and anxiety.

Previous research has shown psychopathy to be strongly associated with mental disorders such as Cluster B personality disorders (antisocial personality disorder, borderline personality disorder, histrionic personality disorder, narcissistic personality disorder), especially antisocial personality disorder, and substance abuse disorders (Wallinius et al., 2012). Since psychopathy is very conceptually similar to antisocial personality disorder, as defined in the DSM V, researchers have argued that they are not completely separate entities, rather they are conditions on a continuum (Coid & Ullrich, 2010). Wallinius et al., (2012) set out to identify the convergence between the four facets of psychopathy and other mental disorders. Results indicated that the Interpersonal facet, which consists of arrogant and deceitful interpersonal patterns, was the most unique feature of psychopathy, while the Affective, Lifestyle, and Antisocial facets were more associated with mental disorders related to impulsivity, substance abuse, and lack of control. The Antisocial facet was most closely associated with mental disorders marked only by impulsive behavior. These results along with results from past research reinforces the idea that psychopathy is not a unitary syndrome. Therefore, in a clinical setting, instead of deciding if patients are "psychopaths" or not, it would be more beneficial to determine what susceptibility factors for violent or aggressive behavior they exhibit as this affects the needs and risks of the individual patient.

Narcissism in Relation to Psychopathy

Clearly the currently accepted parameters of psychopathy have diverse understandings, and the means of measurement are both helpful and flawed. It is also clear that there is a need for a greater understanding of psychopathy between children who begin to display the tendencies more clearly defined and those who are both adults and often incarcerated. It is helpful, though, to also situate our understanding of psychopathy into other disorders that might “mask” or correlate with it. Narcissism is often associated with psychopathy and many researchers have asserted that the indicators for both disorders greatly overlap. Aggression, lack of empathy, interpersonal dominance, and the exploitation of others are all features that are common of both narcissism and psychopathic disorders. Individuals diagnosed with narcissistic personality disorder (NPD) are characterized by a high sense of self-esteem, an abnormal sense of superiority, dominance, grandiose sense of self worth, and a sense of entitlement (Carraro et al., 2018). There are numerous studies that link narcissism with aggression and some researchers have even deemed psychopathy as, the most severe form of ‘pathological narcissism’, a type of narcissism specifically related to aggression and retaliation (Kernberg, 1975). Similarly to psychopathy, the construct of narcissism is not operationally well defined. Some researchers posit that there are two distinct facets of narcissism: vulnerable and grandiose. Vulnerable narcissism describes an individual who is emotionally fragile, has low self-esteem and also has internalizing pathologies, while grandiose narcissism describes an individual with a reduced sensitivity to stress, high self-esteem, exploitativeness, and an arrogant personality (Pincus & Lukowitsky, 2010). The differences between grandiose and vulnerable narcissism mimics research regarding primary and secondary variants of psychopathy. While primary psychopathy is theorized as a deficit in empathy and manipulative interpersonal traits, secondary psychopathy

develops from an impulsive and aggressive lifestyle and has deficits in emotional regulation (Hare, 1991). Provided the parallels between psychopathy variants and narcissism dimensions, applying an established framework in the study of narcissism may prove helpful in understanding psychopathy and developing more beneficial treatment methods.

Research has illuminated that in forensic samples, narcissism and psychopathy demonstrate a great deal of overlap, which suggests that these disorders share susceptibilities for personality pathology. However, research on the link between narcissism and psychopathy has produced some varied results. For instance, while a number of studies have associated narcissism with primary psychopathy, the association between narcissism and secondary psychopathy is less reliable (Rutherford, 1997). Research has also focused on parallels between grandiose narcissism and psychopathy rather than vulnerable narcissism. Schoenleber et al., (2011) conducted a study aiming to further explain the relationship between grandiose and vulnerable narcissism and the facets of psychopathy. Researchers hypothesized that the two dimensions of narcissism would be differentially related with the facets of psychopathy, with grandiose narcissism displaying associations with the interpersonal and affective facets of primary psychopathy and vulnerable narcissism displaying associations with the lifestyle and antisocial facets of secondary psychopathy. Results supported the hypotheses and established an association between grandiose narcissism and primary psychopathy and an association between vulnerable narcissism and secondary psychopathy. More specifically, results suggested that grandiose narcissism and primary psychopathy are both characterized by superficial charm, interpersonal deceit, and arrogance, while vulnerable narcissism and secondary psychopathy share traits such as impulsivity and irresponsibility. Results also suggest that the shared vulnerabilities between narcissism and psychopathy can be conceptualized in terms of broader theoretical constructs,

such as the Triarchic Model of Psychopathy. In this regard, grandiose narcissism relates to the construct of boldness since grandiose narcissism is associated with social dominance and fewer problems in psychological functioning when compared with vulnerable narcissism. In addition, both dimensions of narcissism are marked with characteristics of meanness (Schoenleber, Sadeh, & Verona, 2011). Given these results and the shared vulnerabilities of the disorders, further research centered on the similarities between psychopathy and narcissism would be beneficial regarding future treatment of the disorders.

Also similarly to psychopathy, narcissism manifests differently between genders. While a male diagnosed with psychopathy might present as impulsive, aggressive, and violent, a psychopathic female may exhibit self-harm behaviors (Forouzan & Cooke, 2005). In regard to NPD, the disorder presents as physical aggression, a need for power, and a domineering personality in males and as a sense of entitlement and coercive manipulation in women (Ryan, Weikel, & Sprechini, 2008). There is also a significant relationship between narcissism and self-esteem. The literature defines self-esteem as, “a global affective self-evaluation that can range from very negative to very positive” (Rosenberg, 1965). One might assume that there is a positive relationship between self-esteem and narcissism as a narcissistic individual presents as entitled, arrogant, and self-promotional; however, research suggests the opposite (Hyatt et al., 2018). In fact, the hallmark characteristics of narcissism include hypersensitivity to criticism, fear of rejection, and a fragile self-esteem (Akhtar & Thomson, 1982). In order for narcissistic individuals to sustain a grandiose sense of self, they often self enhance in order to maintain, protect, or increase their self-esteem (Sleep, Sellbom, Campbell, & Miller, 2017). Psychopathic individuals also exhibit the same self-enhancement behaviors.

Low self-esteem has also been associated with aggression. Research has found that when an individual relies solely on external evaluations and has chronic instability or variation in their self-view, they usually display aggressive behavior as a way to lessen the hurtful impact of these events on their self-esteem (Kernis, Grannemann, & Barclay, 1989). The compulsive and pathological features of narcissism and psychopathy have been linked to self-esteem instability, which implies that individuals with these behaviors may not take a realistic view of themselves or their capabilities. This leads to a hypersensitivity to criticism, a distorted and unsound perception of their self-worth, and an inclination toward aggressive behaviors (Cale & Lilienfeld, 2006). The pathological egocentricity criteria of psychopathy and the grandiose sense of self-worth criteria of narcissism make self-esteem an essential component of these concepts.

A higher level of self-esteem is a significant characteristic in Factor 1 psychopathy and some forms of grandiose narcissism and lower levels of self-esteem is more characteristic of Factor 2 psychopathy and vulnerable narcissism (Cale & Lilienfeld, 2006). Falkenbach et al. (2013) conducted a study in order to determine the association between self-esteem level and stability in the relationship between Factors 1 and 2 of psychopathy and the dimensions of narcissism with aggression. Results indicated that self-esteem partly facilitated the relationship between Factor 2 psychopathy and aggression, which signifies that low self-esteem contributes to aggressive behaviors that are associated with individuals who score high on Factor 2 of psychopathy. Additionally, self-esteem instability was also associated with aggression, indicating the continued need for research in regard to low self-esteem stability in risk assessments (Falkenbach et al., 2013).

In addition to low self-esteem, grandiosity is another trait that psychopathy and narcissism have in common. The literature defines grandiosity as, “exhibiting an inflated sense

of abilities, accomplishments, and importance relative to those of others” (Kliffel & Kosson, 2018). In addition, the DSM V defines grandiosity as, “believing one is superior to others and deserves special treatment; self-centeredness, feelings of entitlement, and condescension toward others” (*DSM-5*; APA, 2013). Although grandiosity is a major feature in both psychopathy and narcissism, there are currently no clinical measures that evaluate it as a separate construct other than by self-report. A recent study conducted by Kliffel and Kosson (2018), aimed to discover the extent to which each personality disorder was uniquely characterized by grandiosity and whether measures of grandiosity were more central to psychopathy or narcissism in an attempt to better understand each personality disorder. Results of this study indicated that as previously stated, grandiosity is a major feature in both disorders; however, it was suggested that it might be more associated with psychopathy rather than narcissism. With that being said, it is important for researchers to create measures that assess grandiosity as an individual construct as it is an important indicator for both disorders.

Similarly to sharing traits such as grandiosity, psychopathy and narcissism are also associated with empathic deficits. As previously stated, empathy is a social awareness, through which an individual shares an emotional experience on an affective and cognitive level (Wai & Tiliopoulos, 2012). Researchers have theorized that since empathy provides an individual with the emotional information of others, it may also motivate manipulative personalities such as those who have psychopathy or narcissism (McIlwain, 2003). Given the differences between affective and cognitive empathy, research is limited regarding the differences between the two in relation to the two disorders. A study conducted by Wai and Tiliopoulos (2012), aimed to examine bi-dimensional empathic deficits for psychopathy and narcissism. The researchers hypothesized that those diagnosed with psychopathy or narcissism would be associated with

lower affective empathy; however, would demonstrate no deficits in cognitive empathy. Results were consistent with the hypothesis and indicated narcissistic and psychopathic individuals displayed significant deficits in affective empathy, but demonstrated weak relationships with cognitive empathy (Wai & Tiliopoulos, 2012).

These results are important because as previously stated, no study has differentiated between cognitive and affective empathy when measuring an individual's empathy levels. The usefulness and reliability of global empathy assessments comes into question when assessing one's ability to read the emotions of another and one's tendency to appropriately react to those same emotions. The results of the study further indicate that those with higher levels of psychopathic or narcissistic traits have empathic deficits that are affective in nature. This signifies that those individuals can retain their ability to assess others' emotions and then utilize this information to devise a plan for getting what they desire, while their lack of affective empathy allows them to overlook any potential harm that they may inflict in the process.

Just as psychopathy is on a continuum, there are differing levels of narcissism and variations of the narcissistic personality. "The unprincipled narcissist combines an inflated level of self-confidence with the recurrent abnormal antisocial personality behavior patterns" (Millon, Grossman, Millon, Meagher, & Ramnath, 2004, p. 337). While this may present as a pattern of drug abuse or law breaking in some, other examples can present as opportunists or con men that use others for personal gain. This type of narcissist will show an indifference to the welfare of others and joy can be achieved by gaining trust and outwitting their target. Like psychopathic individuals, the unprincipled narcissist has the attitude that those who can be taken advantage of deserve to be taken advantage of. Also like psychopathic individuals, if challenged or confronted, they are likely to exhibit an attitude of justified innocence as they deny their

behavior through a façade of politeness or nonchalance. Furthermore, usually interpersonal relationships endure only as long as the narcissist has something to gain.

Similar to the unprincipled narcissist, the amorous narcissist will also tempt those who they deem emotionally needy and naïve, while fulfilling their own desires. The literature compares the temperament of this type of narcissist to that of someone with histrionic personality disorder, who are often defined by their manipulative sexual behaviors. They are typically uninclined to monogamy and genuine intimacy, and instead are inclined toward sexual exploitation of their target (Millon et al., 2004). Like psychopathic individuals in intimate relationships, the unprincipled narcissist will exploit their partner until they are bored and then move on. Many influential researchers have focused on differing types of narcissism and developed numerous theories regarding narcissism and psychopathy.

Sigmund Freud devoted some of his theories to narcissism and psychopathy and described narcissism as, “a libidinal investment in the self that, in healthy and reasonable quantities, would ultimately give way to mature object-relationships” (Millon et al., 2004, p. 343). It can be assumed that Freud believed that in unreasonable quantities, narcissism can lead to inappropriate or unhealthy relationships. In the early 1900’s the psychoanalytic theory was proposed, which is built upon the idea that one’s behavior is determined by past experiences that are embedded in the unconscious mind that the individual is unaware of (Lombardi, 2018). The main goal of psychoanalysis is to allow unconscious ideas and material into consciousness, therefore helping the individual not be controlled by biological drives (Cooper, 2002). Throughout past decades, researchers have commented on the psychoanalytic theory and it is still in use today.

Currently, there are four basic components that are incorporated in psychoanalysis: interpretation, transference analysis, technical neutrality, and countertransference analysis. Interpretation is viewed as the verbal communication between client and analyst. In this stage, the analyst will help the client be aware of what they are using as a defense mechanism and discover the client's motivation for this mechanism. In this process, there are three classifications of interpretation. Clarification, in which the analyst tries to illuminate what is happening in the consciousness of the patient; confrontation, in which the nonverbal aspects of the client's behavior is brought to their attention; and interpretation proper, which signifies the proposed hypothesis of the analyst (Kernberg, 2016). In transference analysis, transference refers to "the systematic analysis of the transference implications of the patient's total verbal and nonverbal manifestations in the hours as well as the patient's direct and implicit communicative efforts to influence the analyst in a certain direction" (Kernberg, 2016). Transference is deemed as the main driver of change in treatment. While this stage is occurring, the analyst will take note of all verbal and nonverbal communication from the client and theorizes what led the client to adopt their defense mechanism. Technical neutrality refers to the dedication of the analyst to avoid taking sides and remain neutral to the internal conflicts of the client. The goal is to be a mirror for the client, reflecting their behaviors back to them in an attempt to allow the client to understand themselves better. The last component, countertransference analysis, refers to the analyst's reactions to the client. It can be generally explained as the analyst's efforts to analyze their own reactions to the client. In order for this process to be successful, the analyst must be able to view the client objectively (Kernberg, 2016). In regard to narcissism and psychopathy, psychoanalysis can prove beneficial in discovering if an individual's current behaviors are the result of a past trauma that they may not even be aware is affecting them negatively.

Another area that individuals with psychopathy or narcissism have issues with is interpersonal relationships. In a healthy interpersonal exchange, each participant in the conversation will understand the context of the exchange in order for both parties to receive messages that are consistent with their own self-image. Unhealthy exchanges, or communications that are not validating, cause dissonance and in turn lead to feelings of anxiousness. Many narcissists, like those with psychopathy, believe that they are exempt from accepted standards of society and conformity. They believe that rules or laws are tools used to control the masses and each individual rule should be evaluated and dismissed if it constitutes an excessive restriction on free action. They will also choose to break usual standards for interpersonal communication in an effort to establish themselves as exceptional, thereby reinforcing their own self-image (Millon et al., 2004). However, in this aspect the difference between psychopathy and narcissism can be seen. While both individuals with these disorders will choose to show their exceptionality, the narcissist will exert this dominance in an effort to conceal their weakened ego and self-esteem, while a psychopath will not feel as if they have to prove anything. Where narcissism is a neverending cycle of proving their worth in an effort to raise their self-image, psychopathy is a void in which the psychopath has no need to prove anything.

Although there are some differences in their motivations, psychopaths and narcissists are similar in their cognitive styles. While a healthy functioning individual has realistic goals that take into consideration their own needs as well as the needs of others, psychopathic and narcissistic individuals forecast themselves into an idealized future with unrealistic and limitless fantasies of success. They might even have some general training that makes them appear knowledgeable and like these idealizations could possibly be true; however, this training is usually

minimal and these fantasies usually last only as long as it serves the individual or until their frauds are discovered. Psychopathy and narcissism are constructs that are only diagnosed in adults; however, there are some disorders that are precursors that can be diagnosed in children.

Disruptive Behavior Disorders

Conduct Disorder, Attention-Deficit Hyperactivity Disorder (ADHD), and Oppositional Defiant Disorder (ODD) are strong risk factors in the emergence of adult psychopathy. Conduct Disorder, which is labeled by DSM V as, “a repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of three (or more) of the following criteria in the past 12 months, with at least one criterion present in the past 6 months” (these criteria being, aggression to people and animals, destruction of property, deceitfulness or theft, and serious violations of rules) (*DSM-5*; APA, 2013) is said by researchers to predict life-long criminal behavior if diagnosed in children (Patrick, 1994). In addition, these individuals are more likely to suffer from antisocial personality disorder as well as have substance abuse issues later in life (Smith & Hung, 2012).

Research also indicates that the associations between conduct problems and adult psychopathy is heightened with the presence of ADHD (Smith & Hung, 2012). ADHD is defined by the DSM V as, “a persistent pattern of inattention and/or hyperactivity-impulsivity that interferes with functioning or development, as characterized by six (or more) of the following symptoms have persisted for at least 6 months to a degree that is inconsistent with developmental level and that negatively impacts directly on social and academic/occupational activities” (with symptoms ranging in explanations for inattention and hyperactivity and impulsivity) (*DSM-5*; APA, 2013). Children exhibiting both conduct disorder and ADHD are said to display frequent and early on-set behavior ranging from aggression to substance abuse (Smith & Hung, 2012).

Adolescents demonstrating these disorders as well as callous-unemotional traits are said to be more at risk to manifest a pattern of severe and persistent antisocial behaviors, thus predicting a future of psychopathic tendencies and criminal behavior (Smith & Hung, 2012).

Oppositional Defiant Disorder is also in the class of disruptive behavior disorders that could be a precursor to psychopathy in later years. Dr. Robert Hare defines this disorder as, “a pattern of negative, hostile, and defiant behavior without the serious violations of the basic rights of others that are seen in conduct disorder” (Hare, 1993, p. 159). These three disorders are overlapping subcategories of disruptive behavior disorders that characterize behavior that is not only socially disruptive to the individual with the disorder, but also to those who the individual comes in contact with. Although most children who have these disorders will not evolve into psychopaths, the reverse is true, that psychopaths most likely were diagnosed or had these disorders as children.

Conduct disorder. In order to assess psychopathic tendencies and traits in younger children (6-13 years old) with conduct problems, Frick and colleagues developed the Antisocial Process Screening Device (APSD) (Frick & Hare, 2001). The APSD consists of a 20-item rating scale that is completed by teachers or parents. The items in the APSD mirror those in the PCL-R with the main goal of representing all traits and features of psychopathy that could be measured in children (Patrick et al., 2009). A primary examination of the APSD revealed two distinguishing factors: an Impulsive/Conduct Problems (I/CP) factor revealing impulsiveness, behavioral deviancy, and inflated self-importance; and a Callous–Unemotional (CU) factor revealing propensities toward emotional insensitivity and interpersonal callousness (Patrick et al., 2009). Later research disclosed that the I/CP factor could be described as distinctive “impulsive” and “narcissistic” subfactors of which have elements of boredom, acting without

thinking, failure to plan and high self-importance, bragging, and conning respectively (Frick, Bodin, & Barry, 2000).

It has been proposed that youth with conduct disorder and youth that are high in CU and I/CP traits score lower on self-report measures for neuroticism and anxiety, are enticed by novel and risky activities, and exhibit lowered behavioral responses to intimidating, threatening, or distressing stimuli. They also show deficits in passive avoidance learning, which was characterized by a reduced capability to restrain behaviors that result in consequences (Frick et al., 2003). Additionally, when compared with a control group, children with high CU traits and conduct problems displayed high levels of preemptive as well as reactive aggression, indicating that the presence of CU traits is a predictor of future aggression and I/CP tendencies (Frick et al., 2003).

There has been debate within the scientific community about which brain regions are distorted in children with conduct disorder when compared to children without the disorder. In order to assess this question, Sterzer et al., (2007) conducted a study that consisted of 12 adolescents who had been diagnosed with CD and 12 matched controls. After comparing grey matter volume and other brain structures between the two groups, results indicated that grey matter volume in the bilateral anterior insular cortex and in the left amygdala was significantly reduced in children with CD when compared to healthy controls. These results signify that insular grey matter abnormalities can be linked to aggressive behavior. Additionally, bilateral anterior insular grey matter volume in CD participants were significantly correlated with higher scores (Sterzer, Stadler, Poustka, & Kleinschmidt, 2007). These innovative findings can potentially lead to future research and intervention techniques in order to curb aggressive behavior before it further develops as the child ages. There are also numerous other brain

abnormalities in psychopathic and non-psychopathic individuals such as irregularities in the amygdala and prefrontal cortex.

Structural and Functional Brain Differences

Amygdala. Brain imaging studies have identified defects in the amygdala and the prefrontal cortex of psychopathic individuals. Although separate, these structures are functionally interconnected and are largely responsible for emotional processing and responses. The amygdala, which is associated with the limbic system and located in the temporal lobes, plays a major role in emotional processing, formation of emotional memory, and emotional reactions (Thompson et al., 2014). The amygdala is also involved with stimulus-reinforcement learning. Research originally concluded that the basolateral nuclei received sensory information and allowed the formation of conditioned and unconditioned stimulus associations. These associations then allow the basolateral amygdala to control the activity of the central nucleus, which then controlled the hypothalamic and structures of the brainstem in order to control behavioral, autonomic, and neuroendocrine responses (LeDoux, 1998). However, research has now illuminated that the basolateral amygdala controls more than just the central nucleus. It permits the transmission of stimulus-reinforcement association information and reinforcement expectations to the ventromedial prefrontal cortex for suitable and appropriate decision-making (Schoenbaum & Roesch, 2005). Each structure is interconnected and future research in psychopathy should take that fact into consideration when dissecting behavioral choices of psychopathic individuals.

By use of magnetic resonance imaging, 27 psychopathic individuals with PCL-R scores ranging from 23-40 demonstrated reduced volume and surface deformations of the amygdala when compared to healthy controls (Yang, Raine, Narr, Colletti, & Toga, 2009). It is important

to note that in similar studies, it was found that only unsuccessful, or psychopathic individuals who have been caught, demonstrated structural deficits (basolateral and superficial nuclei) in the amygdala, while successful psychopathic individuals resembled controls. Researchers argued that the specific nuclei in the amygdala may have contributed to the unsuccessful psychopaths inability to learn from punishment and their reduced stress and anxiety, which can contribute to poor socialization (Yang & Raine, 2009).

However, there has been some debate in the literature regarding the nature of psychopathy and amygdala functioning. While some researchers report reduced functional connectivity between the amygdala and orbitofrontal cortex (OFC) or decreased amygdala activity stimulated by emotionally salient provocations, others report enhanced amygdala activity for certain groups of stimuli (Yoder, Porges, & Decety, 2015). An imaginable explanation for these opposed findings may be that many studies have only examined the amygdala as autonomous rather than part of a complex system, which is comprised of multiple collaborative structures. Individual elements such as the lateral and basal nuclei and the central and medial nuclei are important to many cortical and subcortical regions that are significant in stress responses and behavior in response to threatening stimuli (Freese & Amaral, 2009). These functional features are pertinent to psychopathy research due to the differential amygdala activation model (DAAM), which contends that the numerous affective components of psychopathy can be explained by specific dysfunction within the amygdala and its surrounding structures (Moul, Killcross, & Dadds, 2012).

In antisocial children or children with disruptive behavior disorders who also demonstrate CU traits, fMRI studies have demonstrated that the amygdala in these children mirror the functional deficiencies of the amygdala in adult psychopathic individuals. FMRI studies have

also shown that children with conduct problems and CU traits display less amygdala responsiveness to fearful faces when compared to healthy controls (Jones, Laurens, Herba, Barker, & Viding, 2009). Although, results are similar in the fact that subregion-specific anomalies within the amygdala has been suggested regarding CU pathophysiology, the literature typically explains the amygdala as a unitary structure. Therefore, nothing is known about how the subregional network of the amygdala contributes to CU traits in disordered youth and adults (Aghajani et al., 2017). In order to address this issue, the functional connectivity of basolateral amygdala (BLA) and centromedial amygdala (CMA) was studied across three matched groups of adolescents: conduct disordered offenders with CU traits, conduct disordered offenders without CU traits, and healthy controls. Results indicated that conduct disordered youth with CU traits showed abnormally increased BLA activity with regions that included dorsal and ventral portions of the anterior cingulate and medial prefrontal cortices. Contrastingly, conduct disordered youth without CU traits and the healthy control group showed decreased CMA connectivity in the ventromedial/orbitofrontal regions (Aghajani et al., 2017). In summary, conduct disordered offenders with CU traits presented with functionally unsystematic amygdala systems, which were supplemented with structural defects of the amygdala. In future research, it may be salient to consider whether functional and structural reliability of subregions of the amygdala predicts treatment response and susceptibility in conduct disordered offenders with CU traits.

There has also been research that connects amygdala volume and aggression. Previous studies report that in healthy controls who reported a higher history of aggression throughout their lives, there was a 16-18% reduction in whole amygdala volume (Mathias et al., 2007). However, there are more moving parts than just the size of the amygdala to predict aggression. For example, researchers discovered that left amygdala hyperactivation and ventromedial

prefrontal hypoactivation while viewing angry faces were related to monoamine oxidase type A (MAOA)-lo allele, which conveys an increased risk for impulse aggression (Meyer-Lindenberg et al., 2006). Researchers of this study concluded that the trait of aggression in psychopathic individuals would be related to amygdala hypoactivation, which concurs with previous research stating that amygdala hypoactivation is a basis for the empathy deficit in those diagnosed as psychopathic (Gopal et al., 2013). Further, in experiments on animals, it was found that with the loss of the basal nuclei but not the central nucleus, rats demonstrated altered fear conditioning behaviors. Individual or combined lateral and basal amygdala lesions also led to deficits in the conditional response to avoidance (Choi, Cain, & LeDoux, 2010).

In an effort to understand more about the intricacies of different structures of the amygdala, Gopal et al., (2013), aimed to discover whether there was a differential relationship between the dorsal and ventral regions of the amygdala and psychopathic traits such as impulsivity and aggression. They hypothesized that whole amygdala volume would not be related to the self-control variables of aggression and impulsivity and dorsal amygdala volume would be negatively related to aggression and impulsivity, while ventral amygdala would be positively related to aggression and impulsivity. Results indicated that whole amygdala volume was not systematically related to aggression or impulsivity; however, the dorsal and ventral parts of the amygdala were related to aggression and impulsivity as hypothesized. Further, left and right ventral amygdalae were positively associated with motor impulsivity, which can possibly mean that those with these abnormalities may process sensory information more rapidly without adequate prefrontal evaluation, leading to impulsiveness and less appropriate behavioral responses, like those of psychopaths (Gopal et al., 2013).

Additional research echoes the fact that amygdala dysfunction has been reported in adults and youths with psychopathic tendencies; however, there has been disagreement as to whether this abnormality reflects a primary emotional deficit or is secondary to uncharacteristic attentional controls. In a study addressing this issue, 15 adolescents with disruptive behavior disorders and psychopathic traits were compared to 17 healthy control participants. fMRI tests were employed to assess the response of the amygdala and surrounding regions associated with top-down (dorsomedial and lateral frontal cortices) attentional control to emotional expression under circumstances of high and low mental load. Results indicated that healthy control participants displayed a significantly greater increase in the usual amygdala response to fearful expressions under both a high and low mental load when compared to adolescents with disruptive behavior disorders (White et al., 2012). Therefore, results signify that the emotional deficits observed in adolescents with disruptive behavior disorders and psychopathic traits are primary to increased top-down attention to non-emotional stimuli.

In addition to emotional deficits in youth and adults that demonstrate psychopathic tendencies, the amygdala is also the main center for empathy. The violence inhibition mechanism model states that the role of empathy is imperative for healthy moral socialization (Weber, Habel, Amunts, & Schneider, 2008). This model can be exemplified in animalistic behaviors. Animals have developed the instincts for the control of aggression, which are displayed as submission cues that let their attacker know to stop the attack. In healthy humans, sad or fearful facial affect can be interpreted as distress cues and usually lead to a response of submission from their attacker. The model assumes that the violence inhibition mechanism is triggered when distress cues are present and causes autonomic arousal and inhibition of the violent behavior from the attacker (Weber et al., 2008). The dysfunction of this violence

inhibition mechanism, as seen in psychopathic individuals, is likely to result in empathic difficulties resulting in the selective impairment in processing fearful or sad faces.

As mentioned above, the literature associates the amygdala in stimulus-reinforcement association learning and responding to emotional expressions. Psychopathic individuals display impairments in stimulus-reinforcement learning and responding to sad or fearful expressions, which is arguably what drives many of the psychopathic tendencies that these individuals exhibit (Blair, 2008). Since stimulus-reinforcement learning is imperative for appropriate socialization, psychopathic individuals are more likely to employ antisocial strategies in order to attain their goals. Reduced function in the amygdala also lessens empathy-based learning following the distress of another, which leads to a general reduction in empathy as a whole. Lastly, the impairment in stimulus-reward learning may exemplify the reduced attachment that is common in psychopathy. Disordered individuals may see their caretakers as rewarding stimuli and therefore may be less motivated to maintain interactions and contact with them over time. In addition to dysfunction in the amygdala, the deficiencies in the prefrontal cortex may also contribute to psychopathic tendencies.

Prefrontal cortex. A reduction in gray matter in the prefrontal cortex, specifically in the ventromedial prefrontal cortex and in the associated anterior cingulate cortex has proven to be significant regarding emotional regulation and the relationship between affect and behavior in psychopathic individuals (Koenigs, 2012). These areas of the brain are highly associated with empathy and social emotions, such as fear, guilt, and embarrassment and are also highly correlated with psychopathy. In a sample of 17 males diagnosed with antisocial personality disorder and psychopathy, tests revealed a significantly reduced prefrontal cortex and temporal gray matter volumes. When compared to a sample of 27 violent offenders who have been

diagnosed with antisocial personality but not diagnosed with psychopathy and 22 non-offenders, reduced gray matter volumes were not seen. Therefore, it can be assumed that reduced grey matter in these areas of the brain is associated with a distinctive psychopathic phenotype (Gregory et al., 2012).

Faulty endocrine responses to stressful stimuli, chiefly in the adrenal and gonadal axes, have also been examined for its relation to psychopathy. In one investigation, despite psychopathic males displaying a normal range of cortisol levels, they exhibited reduced cortisol stress responses after exposure to stressful stimuli (O'Leary, Loney, & Eckel, 2007).

Additionally, in a sample of 178 individuals, those with higher psychopathy scores had a higher ratio of baseline testosterone to cortisol reactivity when they were exposed to stressors such as a loud noise or the task of giving a speech (Glenn, Raine, Schug, Gao, & Granger, 2011). This makes sense due to the differences in the brains of psychopathic and non-psychopathic individuals in regard to speech.

Language differentials. Language serves as the basis of human communication whether it is verbal or non-verbal; therefore, observing the way individuals communicate with one another through language is very telling when it comes to gaining insight to their thoughts. Recent studies have proven that there is a difference in the language used by psychopathic individuals and non-psychopathic individuals. For example, researchers have found that psychopaths are more likely to exaggerate when it comes to retelling the act in which they murdered someone. It is likely for them to label a cold-blooded murder as only a crime of passion in which the victim was responsible for their own death (Hancock, Woodworth, & Porter, 2013). The previous example also highlights the lack of empathy and lack of responsibility that are common in psychopathic individuals. Language analysis tools have

created a new avenue to research criminals because it has brought to light many aspects of language that are not consciously controllable by the speaker. Computer programs easily measure word patterns that are typically missed by human coders because humans tend to focus on content words such as verbs and nouns, while, computers can detect function words.

Since psychopathic individuals are skilled manipulators, computerized tools represent a new way of uncovering insights into their behavior that may have previously been overlooked (Hancock et al., 2013). In a study conducted by Hancock et al., (2013), text analysis tools were employed to examine the crime narratives told by psychopathic and non-psychopathic murderers. The results indicated that when describing the murders, psychopaths were more likely than non-psychopaths to provide information about basic needs, such as eating or drinking. For example, when recounting a situation in which they murdered someone, a psychopath might also speak about what he ate or drank directly after the murder took place. This could also be due to the lack of empathy that psychopaths have toward their victims and a physiological response to stress. In this situation, a non-psychopathic individual would be very stressed and in turn have no appetite. However, the autonomic nervous system in a psychopathic individual is not functioning or responding normally; therefore, they are able to eat and drink after committing a murder as if it were a normal situation. Psychopathic individuals also make fewer references toward familial and emotional connections than non-psychopaths. The research suggests that the language of psychopaths is less emotionally driven. They use more past-tense verbs when describing their murders, which could suggest a greater emotional detachment from the incident (Hancock et al., 2013).

Psychopathic individuals also use contradictory and logically inconsistent statements when speaking that usually go undetected. For example, when Ted Bundy was asked about his

cocaine use, he stated, “cocaine? I’ve never used it. I’ve never tried cocaine. I think I might have tried it once and got nothing out of it. Just snorted a little bit and I don’t mess with it.” In those few sentences, Bundy lied and contradicted himself multiple times. This is only one example of many that might prove that the mental processes of psychopaths are poorly regulated (Hare, 1993, p. 126). In the average person, each side of the brain has a different function for speaking. The left cerebral hemisphere processes information sequentially and analytically while the right cerebral hemisphere is responsible for processing information as a whole and plays a part in recognizing emotional experiences, imagery, and spatial relations (Hare, 1993). Also, it is important that only one part of the brain is processing language at a time. If both hemispheres were working to process the information simultaneously, it would reduce the brain’s efficiency. This bilateral language processing is one characteristic of psychopathy; therefore, the use of contradictory and logically unsound statements is most likely due to the bilateral processing that occurs in the brain of a psychopathic individual.

Another telling sign of a psychopath is in the non-verbal cues they elicit. While humans use hand gestures to help explain what is being said, most language related hand gestures actually convey no information at all (Hare, 1993). These “empty” hand gestures are called beats and these beats are a revealing sign when observing a psychopathic person. Beats are defined by Hare as, “rapid hand movements that occur only during speech or pauses in speech that are not part of the story line” (Hare, 1993, p. 135). Recent studies suggest that psychopathic individuals use more beats than non-psychopaths in order to facilitate more emotional speech. Emotional speech is a second language to psychopaths and using beats, even subconsciously, help them become more convincing to their target audience. Although language differentials of psychopaths are more commonly seen in adults, there are also traits that are observable in

juveniles. Similarly to language differentials, other traits that are considered psychopathic can be discovered in juveniles, such as callous-unemotional traits. Language differentials are also a subject of contention as whether they are learned or engrained in the brains of humans since birth. This sparks the ever so common nature-nurture debate among researchers.

Nature or Nurture

There has long been a debate whether psychopathy stems from genetic and biological forces or if it is a result of the environment in which one is raised. Promiscuity is one of the main symptoms of a psychopathic individual as well as a lack of empathy. These two traits alone are cause for psychopathic individuals to impregnate a woman or become pregnant themselves and simply leave the child to fend for themselves while they inherit some of the antisocial traits of their parent. Contrastingly, other experts assert that psychopathy is a result of early psychological trauma and experiences. Generally, the literature suggests that it is a combination of nature and nurture, which provide the foundation for psychopathy. In a sample of 34 males diagnosed with ASPD who were compared with 32 healthy controls, percentages varied greatly in regard to demographic and emotional-related factors. For instance, in relation to employment, there was a significantly higher percentage of unemployment in the ASPD group (58.8%), compared to the control group (9.4%). Individuals with ASPD also exhibited significantly higher percentages when compared with controls regarding being single, Nicotine and other psychoactive substance use, suicide attempts, being subjected to family violence, migration in childhood, separation during the developmental period, and presence of psychiatric disorders in family members (Frick et al., 2003).

In order to assess the relationship between child/adolescent psychopathy and adult psychopathy, a longitudinal study was employed to a sample of 13-year-old males, whose levels

of psychopathy were examined using the Child Psychopathy Scale and then reevaluated using the PCL-R at age 24. It was found that psychopathic traits remained stable from adolescence into adulthood (Lynam Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007). Researchers concluded that childhood/adolescent psychopathy is a developmental predecessor to adult psychopathy. As previously stated, the authors posited that the early detection of psychopathy is important for more successful treatment. When the behaviors of twins were examined, same-sex twins were assessed by teachers at the age of 7 for CU traits and antisocial behavior. It was verified that the countenance and expression of CU traits is strongly influenced by genetics. Results of this study indicated that a display of CU traits was not greatly influenced by environmental factors such as socioeconomic status, school experience, or neighborhood (Viding, Moffitt, Plomin, & Blair, 2005). This study supports the idea that the expression of psychopathic propensities in children is most intensely influenced by genetic factors. Although the results of this research show a partiality toward genetics, other factors such as abuse can have an impact on a child.

Abuse. It is not surprising that adult criminal psychopaths have reported experiencing more abuse in their youth than non-psychopaths. Surprisingly, it is not known to what effect childhood abuse relates to psychopathy in adulthood. Researchers have discovered that although criminal psychopaths have reported experiencing more abuse than criminal non-psychopaths, those numbers are only 6:4 respectively (Frodi, Dernevik, Sepa, Philipson, & Bragesjö, 2001). This research is further qualified in another study where childhood physical abuse was examined in relation to adult criminal psychopathy. In this experiment, psychopathic individuals only reported experiencing slightly more abuse than non-psychopathic individuals (Marshall & Cooke, 1999). Therefore, it can be concluded that it is not clear at this time what effect childhood physical abuse has on adult criminal psychopathy and more research is needed to arrive at a more

absolute conclusion. Many children who have been abused are also involved in some sort of institutionalization program. Research has been devoted to discovering if institutionalization by itself can exacerbate psychopathic traits in children.

Childhood institutionalization. Juvenile detention centers and foster homes are characteristically occupied by children who have not formed healthy attachments and can present researchers with a new pool of individuals who have different life experiences than those who reside with their biological parents. In a study conducted by Marshall and Cooke (1999), the childhood experiences of 105 incarcerated adult males were recorded. They then compared the childhood experiences of those who were adult criminal psychopaths to those who were adult criminal non-psychopaths. The study found that those who were categorized as adult criminal psychopaths had more negative institutional experiences. In a similar study, the researchers examined criminal psychopaths and criminal non-psychopaths and found that the individuals who reported being institutionalized during their youth scored higher on Hare's PCL-R (Frodi et al., 2001). These findings suggest a positive correlation between childhood institutionalization with future adult psychopathy and criminality.

The question still remains whether nature or nurture is responsible for psychopathy later in life. Research asserts that the answer is a combination of nature and nurture are responsible for psychopathy and the relationship between biological factors and social forces is how psychopathy emerges. Research indicates that genetic factors contribute to basic personality structure and brain function, which in turn effects the way an individual responds to their social environment and different life experiences (Hare, 1993). In other words, the genetic code that a child is born with can influence the way they react to environmental situations. As a result, the way that these individuals manage emotional connections is greatly reduced. While the question

of what effect nature or nurture has on children has challenged researchers, one idea is centralized: intervention must take place very early in life in order to be successful. Another distinguishing factor that must not be overlooked is the different presentation psychopathy has between genders.

Gender Differences

Although current research is limited regarding psychopathy and female offenders, research has shown that prevalence rate, presentation of symptoms, and diagnostic comorbidity differs when compared to male offenders. In males, research has revealed that psychopathic offenders are likely to recidivate within a year of their release; however, the construct has not been researched in female populations (Salekin, Rogers, Ustad, & Sewell, 1998). Further differences found in an early study on psychopathy found that girls were less likely to have been seen at a guidance clinic for conduct problems than were boys and were also less likely to be diagnosed as psychopathic during childhood. Although dated, statistically, only 12% of girls with behavioral problems were later diagnosed as psychopathic as opposed to 50% of boys (Robins, 1966). Past researchers have also found similar gender differences. For example, female college students had significantly lower total scores on the Self Report Psychopathy (SRP) measure than their male counterparts and the differences were especially apparent for personality traits and socially deviant behavior (Zágon & Jackson, 1994). These examples are only a few that elicit the gender differences that are demonstrated within the literature concerning psychopathy. Although research suggests that the prevalence of psychopathy in women is low, the reliability of the PCL-R is consistent across genders; however, sex bias among clinicians may be the reason for low rates of female psychopathy. In females, their presentation of psychopathy

may look more similar to Borderline, Narcissistic, or Histrionic personality disorder and therefore not recognizable by the clinician as psychopathy (Dolan & Doyle, 2007).

In regard to the background characteristics of psychopathic individuals, it has been found that women with ASPD were more likely than men with ASPD to have high rates of marital separation, be recurrently unemployed, and to be dependent on social assistance programs. Additionally, antisocial women have been observed to have lower rates of unlawful behavior and were more likely to have difficulties in their relationships. They were also likely to tell more lies than antisocial males (Mulder, Wells, Joyce, & Bushnell, 1994). There are also differences in the presentation of psychopathy and ASPD between genders. It was deduced that adolescent girls diagnosed with psychopathy displayed more frequent sexual misbehavior and later onset of childhood behavioral problems than diagnosed boys (Robins, 1966). Further, most girls diagnosed with ASPD did not exhibit the violent and aggressive childhood criteria that is noted in the DSM when compared to boys (Rutherford, Alterman, Cacciola, & Snider, 1995). A possible elucidation for these gender differences is developmental variations in presentation and onset of symptoms. Although manifested in different ways, the antisocial behavior is still evident for both genders. For example, while antisocial boys are more likely to engage in aggressive or violent acts, antisocial girls are more likely to engage in acts such as stealing.

In regard to comorbidity, research indicates that women with psychopathic traits have higher rates of suicidal behavior and comorbid disorders, such as depression and anxiety than men with psychopathic traits (Mulder et al., 1994). Psychopathic women have also been found to have high comorbidity with somatization and histrionic personality disorder, which provides evidence for the view that sociopathy and hysteria may be related (Cloninger & Guze, 1970). It was also found that adolescent girls in treatment for ASPD and psychopathic tendencies were

later diagnosed as hysterics as adults (Robins, 1966). It is imperative for more research to be conducted concerning the gender differences that are evident in psychopathy in order to continue learning about the disorder and devising treatment and intervention plans that are gender specific. While the presentation of psychopathy in both genders marks a significant issue, some psychopathic traits can be optimal in certain situations.

Prosocial Psychopathy

Prosocial behaviors are defined as, “voluntary behaviors that are intended to benefit or help others and include acts such as sharing and providing comfort or assistance” (White, 2014). Despite the prevalent supposition that psychopathy is only associated with law-breaking, violent behavior, not all individuals with psychopathic traits become habitual criminal offenders and some may even exhibit prosocial behaviors. Research indicates that a fearless temperament motivates both psychopathic and heroic traits; thus, an early exposure to successful attachment and socializing environments often promotes positive behaviors later in life (Lykken, 1995). *The Mask of Sanity* described psychopathy as, “an enigmatic constellation of traits which entail both the outward appearance of healthy functioning, even charm—including social influence and stress immunity—and, paradoxically, brazen maladaptive or antisocial behavior” (Cleckley, 1950). In addition to Cleckley’s assertions, other researchers have agreed that there are some adaptive features such as fearlessness, insusceptibility to anxiety, and venturesomeness that assume associations with prosocial functioning (Costello, Unterberger, Watts, & Lilienfeld, 2018). Lykken asserted in his seminal low fear model that fearlessness can lead to behaviors such as persuasiveness, risk-taking, and interpersonal dominance, which can be demonstrated in praiseworthy acts or acts of criminality (Lykken, 1957). Correspondingly, features associated with psychopathy such as grandiosity and impulsivity, when paired with fearlessness, can make a

psychopathic individual more likely to charge an enemy on a battlefield or escape imprisonment during war, much like members of our military. Another example can be seen with previous United States Presidents. Research indicates that fearlessness appears to be related to previous acts of crisis management, presidential performance, wartime heroism, and positive relationships with congress and other world leaders (Lilienfeld et al., 2012). However, this does not mean that all psychopathic individuals are heroic, nor does it mean that all heroes are psychopathic. It simply means that a psychopathic feature, such as fearlessness, can be prosocial when employed in certain circumstances.

Research has also assessed the concept of psychopathy in relation to heroism in a sample of first responders. It was hypothesized that first responders would score higher than non-first responders in PPI-R Fearless Dominance and Boldness. Results indicated that features of psychopathy including boldness, interpersonal workplace deviance, narcissism, sensation seeking, and workplace conduct problems were positively and significantly correlated with heroism and altruism (Patton, Smith, & Lilienfeld, 2018). These results reveal that prosocial and antisocial behaviors do not necessarily lie at opposite ends of the spectrum. It is possible for individuals who exhibit highly prosocial behaviors to also display some antisocial features.

Lykken argued that psychopathic features may be qualified by other variables, such as warm parenting or healthy pride, which may allow a more normalized socialization process for psychopathic individuals. Psychopathic individuals are most likely high in narcissistic traits and lack fear and guilt; therefore, they are less opposed to violating social norms than are non-psychopathic individuals (Lykken, 1995). Research is lacking in this area, thus, Costello and colleagues aimed to assess the relationships among pride, parenting style, guilt, psychopathic traits, personality, and prosocial and antisocial behaviors. It was hypothesized that the fearless

dominance feature of psychopathy would be related to (a) decreased antisocial and criminal behaviors in the presence of authentic pride; (b) increased heroic and adaptive leadership behaviors in the presence of authentic pride; (c) increased antisocial and criminal behaviors in the presence of hubristic pride; and (d) decreased heroic and leadership behaviors in the presence of hubristic pride (Costello et al., 2018). It was also hypothesized that a history of ‘positive parenting’ would lessen the association between fearless dominance and antisocial behaviors and increase the association of fearless dominance and heroic or leadership behaviors. In this study, participants consisted of 339 males and females who completed various widely used measures of psychopathic and narcissistic traits. Results indicated that healthy pride increased the relationship between fearless dominance and adaptable leadership abilities. It was also found that individuals high in fearless dominance and authentic pride might be more successful leaders than those who have other psychopathic traits. In regard to positive parenting, results indicated that the hybrid of fearless dominance and positive parenting mediates antisocial behaviors because it allows the individual a sense of authentic pride (Costello et al., 2018).

There is also research that links psychopathic traits with creativity. A study assessing the Triarchic Model of Psychopathy’s feature of boldness and how it is related to creative personalities hypothesized that a propensity toward psychopathic boldness would be associated with creativity. Results indicated that boldness was the only trait among the TriPM to be positively correlated with the Creative Achievement Questionnaire (CAQ). In addition, all areas except for music were predicted by boldness. Humor was also positively correlated with boldness and meanness (Galang, Castelo, Santos, Perlas, & Angeles, 2016). Given these results, creativity is another avenue that an individual with psychopathic traits may descend toward to display prosocial behaviors.

While some psychopathic individuals may exhibit prosocial behaviors, it is possible that these behaviors may only be exhibited in front of an audience in order to feign benevolence. It is evident that empathy contributes to a variety of prosocial behaviors; however, prosocial behavior may be derived from a variety of motives (Eisenberg, Eggum, & Giunta, 2010). It is possible that empathy occurs authentically in altruistic prosocial behaviors, but may stem from egoistic motives when acts are performed in front of others. White (2014), hypothesized that primary psychopathy would be positively correlated with public prosocial behavior and inversely correlated with empathy and altruistic prosocial behaviors. Results supported this hypothesis and indicated that primary psychopathy was positively related with public prosocial behavior and inversely related to altruistic acts. Additionally, egocentricity was also negatively correlated with altruism.

Researchers have also dubbed prosocial psychopathic individuals as “successful” psychopaths. Unlike the “unsuccessful” psychopath, who may be incarcerated because they have offended criminally, the successful psychopath typically maintains enhanced function, greater autonomic reactivity, higher levels of executive functioning, and higher levels of cognition and decision-making. Unsuccessful psychopaths also typically present with imbalances of frontal cortex and amygdala volume, reduced autonomic responses to stressors, impaired cognition, and distorted fear conditioning (Gao & Raine, 2010). Additionally, while successful psychopaths usually exhibit relational aggression and higher PCL-R Facet 1 scores, which consist of glibness and superficial charm, grandiose sense of self worth, and pathological lying, conning, and manipulative behavior, unsuccessful psychopaths are more associated with physical violence and higher PCL-R Facet 4 features, such as poor behavioral controls, early behavioral problems, and criminal versatility (Gao & Raine, 2010).

Psychopathy and Law

The subject of legal responsibility of psychopathic individuals has been debated a great deal. As it now stands in the United States, the diagnosis of antisocial personality disorder as it is defined in the DSM-V or psychopathy as it is defined by Hare in the PCL-R does not meet the requirements of diminished responsibility. However, within the German forensic community, diminished responsibility could be applied to an individual that displays “truly psychopathological phenomena” and not just commits illegal behaviors (Lilienfeld et al., 2012). Further, diminished responsibility may only be applied to those individuals who exhibit “pronounced mental abnormalities comparable to psychopathological signs and symptoms in mental illness” (Herpertz & Sass, 2000). It is possible that in the future, the legal responsibility may be extended to encompass those who lack emotional reactivity.

German codes regarding the issue of responsibility in regard to mental disorders is as follows in §§ 20 of the Penal Code:

A person acts without guilt who, at the time the criminal act is committed, is incapable of understanding the wrongfulness of his or her action or is incapable of acting in accordance with this understanding due to mental illness, due to a profound disturbance of consciousness, due to mental retardation or due to another serious mental abnormality. According to § 21, “another serious abnormality” refers to severe personality disorders and sexual deviations, which most likely will not result in a pardon of the charges, but can result in diminished responsibility and a diminished sentence (Herpertz & Sass, 2000). Before diminished responsibility can be determined, a two-step forensic evaluation must be performed in order to prove whether or not a legally relevant personality disorder exists. First, a clinician must verify that an irregular personality exists and how to categorize the disorder based on the DSM V.

Second, a clinician must evaluate if the diagnosis affects criminal responsibility and whether it would lead to considerable impairment in the client's ability to understand the criminal nature of their acts or to control their behavior (Herpertz & Sass, 2000). However, neither the diagnosis of psychopathy or a personality disorder in general will lead to the assumption of diminished responsibility on behalf of the offender.

Summary and Conclusion

In his book *Without Conscious*, Dr. Robert Hare posits some suggestions as to what to do when an individual finds himself or herself already embedded with a psychopathic individual. One of his suggestions is to “keep your guard up in high-risk situations”(Hare, 1993, p. 212). Dr. Hare asserts that some situations, such as singles' bars, social clubs, and foreign airports are breeding grounds for psychopaths who are looking for potential victims. Another suggestion is to “obtain professional advice” (Hare, 1993, p. 214). He advises to make sure the clinician that an individual contacts is experienced in dealing with psychopathic individuals and if one has the resources, to obtain several opinions. Another suggestion that Dr. Hare makes is, “Don't expect dramatic changes” (Hare, 1993, p. 217). He asserts that psychopathic individuals have a personality that is essentially “carved in stone”. According to Dr. Hare, there is little that an individual can do to produce fundamentally maintained changes in a psychopathic individual unless they receive profession assistance. As well as not expecting dramatic changes, Dr. Hare advises individuals who have already fallen victim to a psychopathic individual to “cut your losses” (Hare, 1993, p. 218). While the psychopath might have already succeeded in devastating self-assurance and convincing their victim that they are not worthy of the attention or time of others, it is important to not lose one's self-identity and confidence throughout the process. Rather than continuing to try to “fix” the psychopathic individual or adapt to the unhealthy

situation, it would be more beneficial to obtain a professional opinion. If the psychopathic individual in question happens to be one's child, it is important to work closely with professionals, teachers, and other supporting individuals who are experienced working with psychopathic children to help facilitate results.

Although there are several more suggestions that are pointed out in Dr. Hare's book, it is also important to remember that a person is not alone while dealing with a psychopathic individual. Even Hervey Cleckley had some reservations regarding the prospects of treating psychopathy. In his final edition of *The Mask of Sanity*, he wrote "Over a period of many years I have remained discouraged about the effect of treatment on the psychopath" (Cleckley, 1950, p. 438). However, in the concluding sentence of the book, Cleckley states, "If some practical means of controlling the psychopath can be devised, perhaps eventually, we may find his disorder to be not altogether beyond our practice" (Cleckley, 1950, p. 446). However, from the time that both of these authors have written their books, more advances have been discovered regarding the treatment and intervention of psychopathy and there are many more recommendations that can be made for the future.

Despite there being centuries worth of research on the topic of psychopathy, much still remains a mystery about the disorder. However, in what clinicians do know about psychopathy, it is far more helpful to try to understand this disorder and search for early intervention techniques rather than intervene after damage has already been done to society and the psychopathic individual alike. As it stands, the criminal justice system has wasted a plethora of resources prosecuting, incarcerating, and supervising psychopaths after they have already committed offenses to society. Instead of spending billions of dollars each year to rehabilitate psychopathic individuals, society must learn to appropriately socialize them instead of simply

trying to “re-socialize” their already deviant behavior. In order to achieve this, serious efforts must be employed to intervene early and continue to research what else can be done to solve the mystery that is the psychopath.

CHAPTER 3

DISCUSSION

While the most obvious form of psychopathy is a blatant disregard for societal rules resulting in criminality, this is not always the case. As researchers have discovered, there are many other factors to consider when diagnosing, measuring, and treating psychopathy. As previously stated, psychopathy is on a continuum and not a unitary syndrome. In order for intervention and treatment to be successful, it is imperative to treat the person based on his or her own treatment needs rather than treat psychopathic individuals as a whole.

Intervention

One element of psychopathy that has contributed to its already egregious reputation is that it is notably resistant to treatment. A major reason why treatment has failed to be beneficial in the past is because adult psychopathic individuals simply do not believe that anything is wrong with them. Therefore, they are likely to approach rehabilitation attempts without any honest dedication. For those offenders who show little cooperation in therapy, supplying measured rewards for optimal behaviors is more promising (Anderson & Kiehl, 2014).

Psychopathic individuals will typically dominate group therapy sessions in an effort to impose their views on others in the group and in a way to deviate from taking responsibility for their own actions (Hare, 1993). Further, psychopathic individuals have a higher recidivism rate than most other criminals. They could plainly be going through the motions of treatment in order to achieve conditional release and then revert back to the unlawful behaviors that they previously employed. Treatment could potentially make the dealings of a psychopath worse for the rest of society. Previous research indicates that psychopathic individuals are four times more likely to

commit a violent crime following therapy than non-psychopathic individuals. Further information in that study concluded that psychopaths who did not take part in the program were less violent upon their release when compared to psychopaths who did undergo treatment (Hare, 1993). It is a troubling realization that treatment could potentially do more harm for psychopathic persons. Unfortunately, programs that focus on group therapy allow the psychopathic individual to adjust their manipulation skills and practice how they can further influence others when released back into society.

It is also an unsettling reality that many of the children who end up as adult psychopaths were brought to the attention of a teacher or some other adult authority figure early in life and not much was done concerning their behavior. Numerous professionals that come across these children are weary to confront the issue. Some experts feel uncomfortable giving a child a diagnosis that will follow them for the rest of their lives before they have matured. Others take a purely behavioral approach and focus on changing or targeting the specific maladaptive behaviors that the child is exhibiting. On the contrary, failing to recognize the traits in a budding psychopath could potentially be their downfall because treatment is more difficult to employ.

Although there is little proof that rehabilitative treatment benefits psychopathic criminals that is not to say that treatment, as a whole is useless. Successful intervention would be more fruitful if employed on developing children who are showing signs of psychopathic traits. However, intervention is to be even more successful if it occurs in very early childhood. The older the child becomes, the slimmer chances are to alter their behavior patterns. Additionally, children that exhibit antisocial behaviors, callous-unemotional traits, and other factors that are precursors to psychopathy are not necessarily immune from living a normal life without criminality. Children are extremely malleable and can benefit from intervention from an early

age. One style of intervention, which is considered the most effective treatment with adolescents who display callous-unemotional traits and conduct problems, is intensive parenting intervention (Datyner, Kimonis, Hunt, & Armstrong, 2016). With this style, parents are taught additional skills to modify behavior in early to middle childhood. Although approximately one quarter to one third of children fail to benefit from this form of intervention, the fact that some children do benefit helps to identify which children have a bleaker prognosis and allows for experts to keep a more watchful eye over them or try different therapy techniques (Datyner et al., 2016).

There is also evidence that posits the idea that emotional training for children who exhibit psychopathic traits modifies their empathic and emotional shortages. Since children with callous-unemotional traits and conduct problems show a lack in behaviors such as sadness and fear, flooding them with these emotions and refocusing their attention on prosocial behaviors can be a helpful intervention program (Datyner et al., 2016). Regardless, early intervention is essential. Milestones in emotional and moral development usually occur before the age of six. Children can also exhibit empathic behaviors before the age of three; therefore, early childhood intervention can be a key factor when treating children with high-risk behaviors (Datyner et al., 2016). Due to the largely pessimistic view of treatments for adult psychopathic individuals, researchers have turned their focus to children displaying antisocial behavior, CU traits, and those with disruptive behavior disorders. Functional MRI and structural MRI techniques have been performed on adolescents much like they are on adult psychopathic individuals. By identifying neural abnormalities in children and also identifying when these abnormalities develop into psychopathy, results could greatly affect future treatment and change the current treatment trajectory for antisocial youth.

Dr. Robert Hare has accepted a challenge from the Canadian Government to design an experimental treatment/management program for these offenders (Hare, 1993). Dr. Hare accepted the position due to the fact that, “previous programs typically have been flawed in a number of ways, and none has been firmly grounded in the latest advances in theory, research and clinical and correctional expertise” and also because “there obviously is an urgent need for programs that can reduce the likelihood that psychopathic offenders will commit violent acts both in prison and following their release into the community” (Hare, 1993, p. 204). In order for the program to commence, Dr. Hare gathered a panel of experts in criminology, psychiatry, psychology, correctional treatment, and program design and evaluation. The broad principles of this program are based on the view that psychopaths do not have to be “re-socialized”, as other incarcerated criminals do, they need to be socialized completely from scratch because they have never been appropriately socialized in the first place (Hare, 1993). In order to begin to socialize them into the community, this program will have to be less concerned with attempts to develop empathy and conscience within the psychopathic individual and more concerned with convincing them that it would be in their own self-interest to change their current attitudes and behaviors. The program will also aim to show psychopathic individuals how to use their strengths to satisfy their needs in a way that is societally appropriate (Hare, 1993).

The pursuit of risk and protective factors for criminal and antisocial behavior amid psychopathic individuals could also help researchers and clinicians to better determine subdivisions of psychopaths who are at lesser versus greater risk of antisocial behaviors, thus, aiming intervention efforts toward high-risk groups (Costello et al., 2018). This strategy may even work among children who exhibit high levels of CU traits; therefore, a better understanding of the protective factors is crucial. Future research on the psychopathic brain may elicit better

methods of intervention than the approaches that are currently used. Although researchers have only theorized possible techniques, they express optimism for the future. For example, Glenn and Raine (2009), expressed the possibility of being able to alter or resolve the deficits of specific areas in the brains of psychopathic individuals through pharmacological, hormonal or behavioral therapy.

Due to the fact that research points to juveniles with psychopathic traits offending in the future, intervention techniques for juveniles are similar to the methods for adults. One factor that has received less attention is the physical characteristics of brain deformities and cognitive issues. Advancements in understanding the impact of dietary supplements and how nutrition impacts brain development cannot be ignored in the field of psychopathy treatment, as there are too many commonalities in the brain mechanics of those diagnosed. For example, research has indicated that the introduction of omega-3 essential fatty acid supplements for youth exhibiting psychopathic traits may be beneficial. Omega-3 has been proven to promote healthy brain development in children and low levels have been associated with poor cognitive performance and behavior in children (Montgomery, Burton, Sewell, Spreckelsen, & Richardson, 2013). In addition, poor nutrition during pregnancy and early childhood has been considered to reduce healthy brain growth and function and has been associated with antisocial behavior later in life (Liu, 2011). While these recommendations for intervention must continue to be researched, they are a suitable starting point to achieve success in the future. Although intervention is more successful in childhood or when a person initially exhibits psychopathic traits, some treatment strategies and recommendations might prove more useful if an individual has already been diagnosed.

Treatment

Psychopathic individuals present serious problems for the criminal justice system due to their serious crimes and the fact that they are considered “untreatable”. However, this cynical view delays progress because it weakens the motivation to develop and improve effective treatment programs for those who have been diagnosed. Historically, this has led to overcrowding of psychopathic individuals in prisons and forensic hospitals due to their high risk of recidivism and “lack of treatability” (Tucker, 1999). In order to combat this issue going forward, this stigma must be discontinued and effective treatment programs must be researched. Historically, researchers have reported that the treatment of psychopathy within the prison population seems to worsen the behaviors and characteristics of the psychopathic individual; however, the research is divided. While previous studies applying anger management, social ability training, higher education, and treatment in therapeutic communities have concluded that treatment only reinforces and exacerbates psychopathic symptoms, other studies have disclosed that a well adjusted treatment dose, cognitive behavioral therapy, increased involvement of mental health professionals, and intervention at a young age reduces recidivism (Caldwell, Skeem, Salekin, & Van Rybroek, 2006).

It is difficult to generalize treatment results from experimental studies as the outcomes vary in regard to the psychopathic individual and by treatment program. However, in his meta-analysis study, Salekin concluded psychoanalytic or insight-oriented treatment (successful in 59% of patients in 17 studies) and CBT (62% success based on 5 studies), in addition to a combination of behavioral and insight-oriented treatment (successful for 86% of the patients) presented beneficial results in regard to suppressing psychopathic traits (Salekin, 2002).

Salekin’s work has been criticized for relying too heavily on experimental foundations and for

applying treatment that does not necessarily ‘cure’ the psychopath’s interpersonal and affective core (Cooke, Michie, Hart, & Clark, 2005). However, psychopathic individuals do not necessarily have to be “cured” of their inappropriate affect and antisocial interpersonal relationships in order to prevent further disruptive or antisocial acts. In addition, treatment may be particularly difficult to provide for a psychopathic individual because they do not feel the need to change, which is an imperative quality for the client to exhibit in most treatment settings. Instead, the treatment of psychopathy should focus on getting the client to understand that they will only be provided with something that they desire if they discontinue the maladaptive behaviors. In order for treatment to be successful, the psychopathic individual must feel as if they are benefitting from the outcomes of their changed behaviors in a way that goes beyond simply following the law or not being apprehended for their crimes. In treatment, rather than focusing on decreasing harm to others by teaching empathy or working on perspective taking skills, it may prove more beneficial for the clinician to target the controlling and avoidant needs of the psychopathic individual in order to develop experiences of agency and responsibility (Gullhaugen & Nøttestad, 2012). Therefore, empathy may be ‘taught’ by considering the needs of the psychopathic individual and using those needs to further treatment initiatives.

Another reason why treatment is difficult to implement is because psychopathic individuals experience emotion differently than a non-psychopathic person. It is important to consider psychopathy as a dimensional rather than categorical concept. In other words, psychopathy must be looked at as on a continuum with normal functioning personality within the general population rather than considering psychopathic individuals as profoundly different from others and completely lacking all emotions. In order for treatment to be successful, the clinician must distinguish affective symptoms, such as genuine depression, from self-pity or responses to

limited independence, which the psychopath might believe to be the same thing.

In order to implement a successful treatment plan, it is essential that researchers and clinicians clearly understand what psychopathy is. While this sounds simple, there are varying opinions, ideas, and biases that are centered on the diagnosis of psychopathy. Salekin (2002), stated that psychopathy is a confusingly defined disorder with a poorly understood etiology. More than a decade later, this is still true. Part of this confusion lies within the assessment tools that are used to measure psychopathy. While it is impossible to deny the impact and usefulness of the PCL-R, defining psychopathy using only this tool is problematic. Using only this measurement defines psychopathy too narrowly and does not take into consideration any comorbidities or individualities unique to the person. As previously stated, psychopathy cannot be conceptualized as a single coherent disorder, as the facets and factors have unique associations with and can be influenced by external influences.

Due to the fact that psychopathic individuals are resistant to treatment, there have been stigmas that those diagnosed with psychopathy are untreatable. In fact, this population has only been regarded as treatable in the last 25 years, and that is still only the belief of some clinicians and members of the scientific community. Recently, meta-analyses have been published indicating that criminal risk can be reduced with effective treatments such as offense-focused cognitive-behavioral group-based interventions (Polaschek & Daly, 2013). Three principles that have been singled out in particular in regard to response of treatment are: Risk, Need, and Responsivity. Therefore, they are collectively known as the RNR Model (Andrews, Bonta, & Hoge, 1990). The RNR Model theorizes that offender treatment programs will produce the largest decrease in criminal behavior when they: (a) target relatively intensive services at higher risk offenders (the Risk principle), leaving lower risk offenders with little or no therapeutic

attention, (b) acknowledge that as the level of offender risk increases, the intensiveness of treatment should also increase (also the Risk principle), (c) focus treatment services on changing empirically established correlates of criminal risk such as substance abuse, impulsivity, and criminal activity (the Need principle), which is also referred to as targeting dynamic risk factors, and (d) deliver intervention in a way that maximizes the engagement of the offender in the treatment program and the ability to use the treatment services to make changes (the Responsivity principle). It would be most beneficial for clinicians to implement these principles using the most effective cognitive and behavioral techniques for treating criminal risk (Andrews & Bonta, 2010). Instead of treating clients as if they are untreatable when they exhibit characteristics such as hostility, poor learning, and poor motivation, it is important for therapists to work with these characteristics to encourage treatment. In addition, since psychopathy is highly comorbid with other disorders and there are so many different traits and variants within the psychopathic personality, it may be more beneficial to understand which psychopathy presentations respond to different types of treatments.

Treatment with comorbidities. Questions have been raised regarding the diversity among offenders with psychopathic traits as to which individuals would benefit more from treatment. For example, researchers have found that secondary psychopaths seem to respond better to treatment when compared with primary psychopaths. When psychopathy is comorbid with antisocial personality disorder, which is associated with primary psychopathy, these individuals feel pain and anxiety to a lesser degree and have a personality that is prone to boredom, thereby making antisocial behavior appealing. When administering treatment, it is important to determine motivators within these individuals that will make treatment more effective. For psychopathic individuals with antisocial personality disorder, pain, anxiety, and

the loss of freedom are primary motivators for change (Reid & Gacono, 2000). However, these individuals are very unlikely to seek or remain in treatment due to the fact that antisocial symptoms are not painful or uncomfortable to the individual by themselves.

The first essential component of treatment is a flexible, consistent clinician who will remain an active part of the treatment process. The best treatment programs will be very consistent where the client will not be able to make rationalizations or excuses for their behaviors and the client will in no way have any power in their own treatment. This rigidity will not allow for manipulation by the client or the presence of comfortability within treatment. In addition, the clinician must provide treatment with the wants of the client in mind. The client likely wants to finish the treatment program and have their freedoms reinstated; therefore, the clinician can use this to their advantage and provide treatment with this in mind.

In many cases, psychopathy is comorbid with narcissistic personality disorder (NPD). This comorbidity is tough to work with and many psychopathic narcissists will resist treatment because they will reject the defective role of patient. Clinicians must be wary when treating this type of client because any encouragement or support from a therapist will reinforce the narcissistic behavior, which makes treatment difficult. Narcissists are also notably resistant to therapy because they are hypersensitive and fearful that their vulnerabilities will be seen. As previously stated with other subtypes of psychopathy, the narcissistic psychopathic individual is more likely to consider change if they believe it will produce more favorable outcomes for themselves as well as more favorable responses from others. To combat the grandiosity within these individuals, unrealistic fantasies can be replaced by thoughts about the rewards that can be obtained by more readily obtained accomplishments. For example, rather than becoming a famous pop star, the individual might audition for a lead singing spot in a local band. The

previous fantasies will then become real rehearsals that will raise self-esteem and allow the individual some sort of real control within their lives. Role-playing can also be a helpful tool in treatment. In order to develop a form of empathy, role-playing allows the client to identify the emotions of others and develop their own beliefs about the significance of these emotions.

When psychopathy is comorbid with borderline personality disorder (BPD) as well as other Axis II disorders, limits and boundaries must be set during treatment. By setting boundaries in advance in an effort to fulfill the overall goal of therapy, the client may be more likely to comply. For example, a therapist might say, “You’re right that I won’t be willing to talk with you whenever you call. The reason is that your pattern now is to be very needy. If I were to do what you want in the way that you want, you would become weaker, not stronger” (Millon et al., 2004, p. 514). By doing this, the wants of the client are met because they are fulfilling treatment needs, thereby gaining their freedom more quickly and the individual does not feel ignored or abandoned. As treatment progresses these boundaries must be upheld.

Pharmacological treatment. Treatment in the form of prescription medication might also be helpful to those with psychopathy. Based on previous research, medication targeting serotonin and dopamine dysregulation, as well as medication directed toward the endocrine and limbic systems can produce beneficial results and should continue to be researched further. Medications have been very useful in the treatment of other disorders and illnesses; however, there has been limited research devoted to drug intervention and therapy trials dedicated strictly to psychopathy. Antidepressants have been found to be beneficial when utilized for individuals with major depressive disorder and have been shown to have effects on personality traits such as neuroticism, aggression, and increases in social desirability and interaction (Thompson et al., 2014).

In lieu of these results, researchers have also examined the effects of antidepressants in personality disorders such as psychopathy. For example, Dunlop et al. (2011) conducted a study in which 90 participants who were diagnosed with depression were given sertraline combined with triiodothyronine (T9) in a double blind, placebo-controlled setting. Sertraline was dispensed in an open-label format with all patients receiving the antidepressant. Patients were then assessed using the Psychopathic Personality Inventory form. Results of this study indicated that serotonin reuptake inhibition seemed to improve social charm and boldness while concurrently decreasing impulsivity and externalization of blame (Dunlop et al., 2011). Previous research has concluded that psychopathic individuals display high serotonin homeostasis as well as vigorous serotonin functioning in the frontal cortex and limbic regions. Therefore, in opposition with this study, treatment with a serotonin reuptake inhibitor in regard to psychopathy might actually exacerbate core psychopathic traits. Treatment with an antidepressant may be more helpful for sociopathic individuals, who display a low stability of serotonin homeostasis in concurrence with aggressive behaviors.

In addition, previous research conducted on animals and humans indicate that there is strong evidence for the neuropeptide hormone oxytocin to be involved in social behavior. Oxytocin is considered the “love hormone” or a “moral molecule” and highlights prosocial attitudes, which are presented through increased affiliation and attachment, enhanced empathy, and trust (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005). In order to determine whether dysregulation in oxytocin levels contribute to psychopathy, Mitchell et al. (2013) conducted a study in which 47 male offenders with psychopathic traits were compared to 21 non-offender controls. Participants who expressed psychopathic features exhibited significantly elevated urinary oxytocin levels (Mitchell et al., 2013). Although the results opposed what was

hypothesized, it led researchers to conclude that elevated oxytocin levels may contribute to psychopathic traits, primarily connected to social deviancy.

Other possible treatment methods. One potential treatment that has been discussed among researchers is Repetitive transcranial magnetic stimulation (rTMS) in order to modify brain function in psychopathic individuals (Glenn & Raine, 2009). Further, more recent studies on transcranial direct-current stimulation (tDCS) seems to affect feelings of guilt, risk taking, and moral decision-making (Boggio et al., 2010). Research demonstrates that right lateral prefrontal stimulation using tDCS techniques has improved compliance of social norms that are enforced by punishment. Further, tDCS has implications for crime prevention and may be relevant for future treatment strategies for psychopathy (Glenn & Raine, 2014). However, there has only been a small amount of research focused on this method. More research must be conducted to determine if this is a suitable method of treatment.

In regard to violent psychopathic offenders, Olver, Lewis, and Wong (2013) conducted a study that examined a population of incarcerated violent offenders who participated in the Aggressive Behavior Control treatment program. This program lasts from 6-8 months and highlights a cognitive-behavioral treatment model and social learning ideologies. In order to treat each person individually, the pacing and content of this program is tailored to each individual based on factors such as cognitive ability, cultural background, and motivation. The aim of the program is to reduce violent behavioral patterns by increasing prosocial skills and breaking patterns that are associated with aggression. The therapeutic change in regard to violent risk was measured using the Violence Risk Scale (VRS) and results indicated that therapeutic change was reflected by a reduction of VRS scores and predicted decreased probability of violent recidivism. The results also indicated that higher levels of psychopathy were correlated with less therapeutic

change. In addition, positive therapeutic change was negatively associated with Factor 1 psychopathy, which suggests that this method of treatment would be more beneficial to individuals with secondary psychopathy rather than primary psychopathy (Olver, Lewis, & Wong, 2013). While this treatment program did have some success in regard to secondary psychopaths and future violent crimes and may prove beneficial for those who exhibit those traits, it is necessary to identify or develop other programs that show more success treating primary psychopathy as well.

Treatments for adolescents. Until 1990, there have been few published studies regarding childhood psychopathy although, in the past few decades, more and more research has been devoted to the subject. As previously stated, early intervention is key and it is of the utmost importance to identify and treat psychopathy in younger populations. However, expanding the construct of psychopathy to encompass children and adolescents is a controversial topic due to the personality development that still has to take place and the stigma that a diagnosis of psychopathy may place on the child throughout their lives. While some researchers have dubbed psychopathy ‘untreatable’, others posit that significant improvements can take place regarding psychopathic traits and recidivism risk when intervention is started early (Hawes & Dadds, 2005). While additional research is needed, it has been shown that children and adolescents are more likely to benefit from therapeutic interventions due to their intrinsic developmental idiosyncrasies, the moderate constancy of child and adolescent psychopathy, and the greater comorbidity in children with internalizing disorders, such as anxiety, that is not common in adult psychopathic individuals (Kubak & Salekin, 2009). Other studies demonstrate that early familial intervention has positive outcomes regarding psychopathic features as well as CBT with motivational based strategies suggesting promising results (Haas et al., 2011). These results

validate that if identified and treated early, psychopathic traits can be adaptable. In addition, intensive, individual therapeutic practices have shown positive effects on the behavioral as well as the affective components of psychopathy when it is conducted with group psychotherapy and when family members are assimilated into the therapeutic programs (Ribeiro da Silva, Rijo, & Salekin, 2013). In other words, it may prove more beneficial to incorporate multimodal and intensive programs that involve different therapeutic practices, such as a combined effort of individual, group, and family therapy to treat psychopathy and psychopathic traits in children.

In regard to specific treatment programs that may prove beneficial, researchers reported on the Mendota Juvenile Treatment Center (MJTC), which was established for treatment of the most violent and behaviorally disturbed incarcerated adolescent males, the majority of which exhibit psychopathic traits or have been diagnosed as psychopathic. This program implements a reduction of sanctions for negative behavior and applies a type of token economy. While at other programs disruptive or violent behavior may lead to expulsion, which is paradoxical for treatment and often times reinforces the undesired behavior, the MJTC increases individualized therapeutic intervention when security measures are required. Researchers have found that the MJTC shifts reinforcement from negative behaviors to the preferred prosocial behaviors (Reidy, Kearns, & DeGue, 2013). When the MJTC was compared to other treatment programs, results indicated that adolescents incarcerated at the MJTC were significantly less likely to violently recidivate after two years (Caldwell et al., 2006). Results were then replicated using a larger sample and longer follow-up period and indicated that youths treated at the MJTC showed no relation between psychopathy scores and recidivism after four years (Caldwell, McCormick, Umstead, & Van Rybroek, 2007). These results suggest that treatment at the MJTC may reduce violence, improve institutionalized behavior, and further treatment compliance by reducing

psychopathic traits. The results from this treatment center is a rarity regarding treatment of psychopathy and further analysis is necessary in order to replicate this treatment model for continued success in the future.

Bias Regarding Psychopathy

While it is impossible for a person to be completely unbiased, it becomes exceedingly more difficult to enact positive change regarding treatment when a biased opinion has already been formed, especially when that opinion is from a clinician. Numerous sources have regarded psychopathy as untreatable, which is not the case. Although difficult to treat, under the right circumstances and with a dedicated, unbiased clinician, intervention and treatment are possible. Due to the stigma that psychopathic individuals will not benefit or engage in treatment practices, it is common for clinicians to rely on stereotypic diagnostic labels that suggest psychopathic individuals are nothing but dangerous and untreatable, which in turn promotes continued cynicism regarding the disorder. Clinician bias can also greatly hinder treatment in the regard that it may significantly affect the client's willingness to continue. Since psychopathic individuals are typically already resistant to treatment practices, bias on behalf of the clinician will most likely lead to unsuccessful management of the disorder.

The media also contributes to the laypersons opinion of psychopathy, which can potentially lead to biased jurors and confounded research. News articles, movies, and television series that describe psychopathic individuals can potentially have lasting effects on the community. For example, in a study aiming to determine the public view of psychopathy from media, 126 fictional psychopaths were identified in movies and television series and were portrayed as sadistic, unpredictable, sexually depraved, emotionally unstable, engaging in random and unprovoked acts of violence, and presented with behaviors such as random giggling

or facial tics. The authors argue that due to the public's general unfamiliarity with mental illness, they regarded these depictions as the complete truth (Keesler & DeMatteo, 2017). This study in addition to other previous research regarding biases concerning psychopathy suggests that individuals may have a mixed understanding of the construct of psychopathy. It is important for researchers and psychological professionals to educate the public in order to alter their perception of psychopathy, which can lead to unbiased jurors, more fair trials, and successful treatment.

Punishment

When adult psychopathic individuals enter the criminal justice system, they sometimes receive harsher, longer and more retributive sentences than other offenders because they are seen as more dangerous or more likely to recidivate (Umbach, Berryessa, & Raine, 2015). Due to the stigma that psychopaths are untreatable, actors in the criminal justice system can be extremely biased toward them, which effects the legal decisions rendered to them. However, harsher punishments for psychopathic individuals usually prove to be ineffective. Due to the fact that psychopathic individuals are less able to associate their actions with punishment as well as functional impairment in the amygdala and prefrontal cortex, the normal development of punishment association and reward and punishment processing is weakened (Umbach et al., 2015). Therefore, traditional punishment is ineffectual for psychopathic individuals because they are impervious to the idea of retribution.

Similarly to adult psychopathic individuals, juveniles labeled as psychopaths also tend to receive harsher sentences. The label creates the stigma that these juveniles are resistant to treatment and will definitely reoffend in the future. In order to combat this, neural deficits in juvenile psychopathic offenders could possibly mitigate the punitive sentences that are often

dispensed (Aspinwall, Brown, & Tabery, 2012). Also similarly to adult psychopaths, juveniles with psychopathic tendencies have been shown to exhibit functional and structural impairments to the amygdala and prefrontal cortex. They have also been found to demonstrate insensitivity to punishment and complications in discontinuing reward-seeking behavior even when there is a high probability of punishment associated with the reward (Dadds & Salmon, 2003). Therefore, like their adult counterparts, juvenile psychopathic offenders may also be unresponsive to traditional retributive sentence.

Prediction

Due to the high recidivism rates of psychopathic individuals, research has focused on how neural deficits and correlates related to psychopathy may assist in creating more effective predictive measures for recidivism and violence of psychopathic individuals in the future (Nadelhoffer et al., 2012). Research performed by Pardini et al., (2014) demonstrates proof of this theory. It was recorded that high-risk 26-year-old males with reduced amygdala volume were three to four times more likely to commit a violent act three years later. Further, it was documented that released prisoners with reduced activity in the Anterior Cingulate Cortex (ACC) were twice as likely to reoffend over a four year period compared to released prisoners with high ACC activity (Aharoni et al., 2013).

Researchers have also argued that neural deficits related to psychopathy, especially in the paralimbic system, discovered from brain imaging studies may be just as effective at identifying risk factors as traditional measures and assessments of psychopathy. Since the validity and accuracy of these traditional assessment measures has been debated throughout the psychological community, brain-imaging studies may present a more accurate method of testing or contribute to the results of current assessments. Although the research as to how much neural deficits and

brain imaging results should contribute to the assessment of a psychopathic offender's risk is minimal, continued research may be beneficial for aiding in risk assessment in the future.

Recommendations for Future Research

Although there is research regarding abnormalities in the amygdala and prefrontal cortex of psychopathic individuals, the exploration concerning children with disruptive behavior disorders who also have CU traits must be extended. There are gaps in the present literature in longitudinal neuroimaging; therefore, it is unknown if the neural defects in youth who have psychopathic traits carries into adulthood. It may be helpful to perform structural and functional neuroimaging tests on adolescents who exhibit psychopathic traits and then perform the same tests once they have reached adulthood in order to observe differences.

Additionally, expanding the affective facet of psychopathy on the PCL-R and PCL-YV may assist in clarifying and illuminating differences between the items within that group. As it stands, the affective facet of psychopathy only consists of four items: lack of remorse, shallow affect, callous/lacking empathy, and failure to accept responsibility. Expounding on these items may help differentiate individual dissimilarities of children with disruptive behavior disorders and CU traits. Further research must also be conducted regarding differences in the brain structures of psychopathic individuals. Currently, research is centered on the amygdala and prefrontal cortex; however, it is likely that the neurobiology of psychopathy involves multiple brain structures. If so, additional research could yield novel treatment and intervention strategies for psychopathic individuals.

In addition, there is a significant gap in the literature regarding parental bonding and attachment in psychopathic individuals (Gao, Raine, Chan, Venables, & Mednick, 2010). This is an important area to be considered due to the fact that the narcissistic and avoidant traits of the

psychopath, such as the devaluation of others and cycles of idealization, stems from a distorted view of the self that may come from unsuccessful attachments early in life (Allen, Fonagy, & Bateman, 2008). In a study conducted by Gullhaugen and Nøttestad (2012), researchers found that attachment patterns typified by neglect and affectionless control were in more than half of the psychopathic offender population (68%). Results further indicated that regardless of comorbid disorders, difficulties in psychological functioning, or PCL-R level, the dominant and hostile tendencies of the psychopathic individual correspond with early experiences of lack of care or autonomy in their interpersonal relationships. This is only one example that correlates higher levels of psychopathy with insecure attachment styles early in life; therefore, filling this gap in research may yield advantageous results regarding treatment or intervention.

In order to better assess psychopathy in younger populations, there is still a need for more precise assessment tools. Although there are numerous assessments used to measure psychopathy in children and adolescents, the variability and diversity of these measurements may be the source of the mistakes and misunderstandings that continue to occur. In the near future, it is vital for researchers to develop more accurate, detailed, and precise assessment measures, which may assist in answering several questions regarding psychopathy in children. There are several questions that must be addressed in future research in order for substantial answers to be discovered regarding treatment. First, how would children displaying psychopathic traits be screened and what psychopathic traits must be observed in order to screen the child? For example, would children who show aggressive, CU, fearless, narcissistic, grandiose, or manipulation traits be screened? Would only children with previous diagnoses of disruptive behavior disorders be screened? These questions alone lead to many more questions such as: who would be informed of the exhibition of these traits and what should this person do when

they are presented with a child displaying these traits? Also, what is the most sufficient assessment method for these children? These questions are only a gateway to many more that must be answered for significant improvements to occur with the adolescent population. In addition, continued research regarding the treatment of CU traits in children is needed. Identifying these traits early and discovering the best way to treat them could alter the trajectory of the adolescent and halt the maladaptive behaviors.

Another area of psychopathy that requires further research is the female psychopath. While there is a plethora of research regarding psychopathy in males, there is notably less that is dedicated to females. Currently, less is known about how the psychopathic traits and treatment needs of women vary from those of men. Generally, women have been shown to be less violent than men. This may be due to women usually having greater degrees of empathy, which has been proven to be a protective factor violent and aggressive behavior. Future research investigating whether protective factors for aggression are more present in female psychopathic individuals or if female psychopaths may be more responsive to treatment than males would contribute to the research on psychopathy as a whole. If results reveal that women respond differently to treatment, it would also allow for new treatment plans to be developed specifically for psychopathic women that may prove more beneficial for the types of traits that they exhibit.

There is also no research comparing psychopathic offenders who do and do not recidivate after treatment. It may be beneficial to compare these two groups to observe which individuals benefitted from the specific treatment program in order to understand why treatment was more helpful for these offenders. Psychopathic offenders differ in their criminogenic needs and should not be regarded as a homogeneous group. After analysis, it can be better understood which methods of treatment are more useful for differing subgroups of psychopathy. For example, if

results indicate that psychopathic offenders with secondary psychopathy traits were less likely to recidivate after treatment, individuals with secondary psychopathy can be involved in this specific treatment in the future and those with primary psychopathy may want to be engaged in a different method of treatment. Treatment strategies should be based on the individual needs of each client; therefore, further research must be conducted to meet this goal.

In addition to comparing offenders who do and do not recidivate after treatment, it may prove advantageous to expand the variety of samples used when conducting studies on the psychopathic population. The majority of past studies have included populations of incarcerated male psychopathic offenders who have committed violent crimes. Increasing the variability of these samples to include psychopathic individuals who have committed non-violent crimes, psychopathic female offenders, or psychopathic individuals who have not been incarcerated may provide different results; therefore, providing a pathway to novel treatment strategies.

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