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Unique and Combined Contributions of Callous-Unemotional Traits and Parental Incarceration on Juvenile Delinquency in an At-Risk Sample

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The University of Southern Mississippi

UNIQUE AND COMBINED CONTRIBUTIONS OF CALLOUS-UNEMOTIONAL TRAITS AND PARENTAL INCARCERATION ON JUVENILE DELINQUENCY IN AN AT-RISK SAMPLE

by

Lacey Loy Herrington

Abstract of a Dissertation
Submitted to the Graduate School
of the University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Philosophy

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ABSTRACT

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The current study examined the interrelations among callous-unemotional (CU) traits, a history of parental incarceration, and juvenile delinquency. More specifically, although research suggests that both CU traits and parental incarceration are predictors of juvenile delinquent behaviors, their interaction in influencing such behaviors had yet to be investigated. Two-hundred thirteen (213) adolescents (201 males, 12 females) who were enlisted in a residential program, designed for adolescents that dropped out of school, participated in this study. Participants ranged in age from 16 to 19 (M = 16.92; SD = .77). Higher levels of overall CU traits reported by the adolescent significantly predicted higher levels of juvenile delinquency; however, no additive effect was observed for adolescents high in overall CU traits with a history of parental incarceration, suggesting that parental incarceration does not significantly influence the delinquency of those adolescents already high in overall CU traits. Low levels of overall CU traits reported by adolescents combined with a history of no parental incarceration predicted the lowest levels of juvenile delinquency. However, parental incarceration was associated with higher delinquency among adolescents with relatively low levels of CU traits. Therefore, high levels of CU traits may delineate a specific set of adolescents at high risk of engaging in juvenile delinquency, whereas parental incarceration may be

particularly relevant for youth low in CU traits. These findings point to the need for future research that further examines the relations between CU traits and parental incarceration on juvenile delinquency, as well as future intervention efforts that target more specific risk factors, such as uncaring traits, based on adolescent characteristics.

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CHAPTER I

INTRODUCTION

Numerous variables have been associated with juvenile delinquency, such as negative home environment, substance use, delinquent peer affiliations, and psychopathy (Dandreaux & Frick, 2009; Fontaine, McCrory, Boivin, Moffitt, & Viding, 2011; Harris, Rice, & Lalumiere, 2001). Psychopathy, in particular, has been shown to uniquely predict juvenile delinquency, even when accounting for other elements such as demographic variables, parenting, and peer delinquency (Lynam, Miller, Vachon, Loeber, & Stouthamer-Loeber, 2009). Psychopathic traits include behavioral (e.g., aggression, impulsivity, irresponsibility), as well as interpersonal and affective features (e.g., superficial charm, lack of remorse, lack of empathy; Frick, O'Brien, Wootton, & McBurnett, 1994; Loney, Taylor, Butler, & Iacono, 2007). These characteristics have a strong relation with future criminal and antisocial behavior and recidivism (Salekin, Rogers, & Sewell, 1996). Additionally, the interpersonal and affective features of psychopathy are believed to be the distinguishing factor between prototypical "psychopaths" and antisocial individuals in general (Frick, Cornell, Barry, Bodin, & Dane, 2003).

Psychopathy and its relation to incarceration and criminal behavior has historically been studied extensively in adults and has been more recently studied broadly in adolescents. Adolescent psychopathic traits tend to be stable into adulthood (Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007; Lynam, Loeber, & Stouthamer-Loeber, 2008). Further, specific dimensions of psychopathy appear to play a prominent role in adolescent delinquency. Callous-unemotional (CU) traits involve the affective

(e.g., lack of guilt, limited range of emotion, lack of empathy) features of psychopathy and seem to identify a specific subset of youth who have especially severe conduct problems and engage in more severe antisocial acts (Frick et al., 2003). Although some delinquent behavior is considered normative in adolescence (Bacon, Paternoster, & Brame, 2009), CU traits place adolescents at increased risk of continuing this behavior (Frick et al., 2003). Therefore, identification and further understanding of these traits in adolescents may assist with developing and implementing appropriate preventative approaches and interventions. The current study explored the contributions of CU traits and parental incarceration to juvenile delinquent behavior including their potential additive effect. Despite the well-studied relation between CU traits and delinquency, relatively little research exists on potential familial behavioral or legal factors that may exacerbate this relation. On the other hand, research suggests that having a parent who is incarcerated is associated with juvenile delinquent behavior, yet this relation had not been researched in the context of potential youth personality factors, such as psychopathic tendencies, that may contribute to the initiation or maintenance of delinquency (Aaron & Dallaire, 2010; Huebner & Gustafson, 2007; Murray, Farrington, & Sekol, 2012).

In short, the purpose of this study was to examine the relation between CU traits, parental incarceration, and juvenile delinquency. Specifically, this study sought to examine both CU traits and parental incarceration as predictors of juvenile delinquent behavior and whether the combination of both factors designated a higher risk for adolescent delinquency.

Psychopathy and Juvenile Delinquency

Among adolescent offenders, the presence of psychopathic traits is a significant risk factor for violence and recidivism (Hare, 1998; Salekin, 2008). For example, adolescent psychopathy has been found to predict violent recidivism across a 10-year follow-up period (Gretton, Hare, & Catchpole 2004). Moreover, childhood psychopathy provides predictive utility above and beyond other risk factors for offending, including past offenses (Lynam, 1997). Furthermore, Lynam and colleagues (2009) found that higher scores on the Childhood Psychopathy Scale (CPS) at age 13 were associated with arrests and convictions five to thirteen years later. This relation was maintained after controlling for demographic characteristics, parenting practices, peer delinquency, and individual differences such as conduct problems, impulsivity, and verbal IQ.

In addition to the importance of overall psychopathic traits in problematic behaviors, CU traits specifically appear to play a role in adolescent delinquency. For example, in incarcerated adolescents with elevated levels of CU traits, greater levels of aggression, and decreased concern regarding punishment for aggressive behavior have been observed versus incarcerated adolescents lacking CU traits (Pardini, Lochman, & Frick, 2003). Additionally, in a study following 98 school-aged children across four assessments conducted each year, children with both conduct problems and CU traits during initial assessment also had the most elevated amounts of conduct problems, self-reported delinquent behaviors, and police contacts in all assessment periods (Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005). Significantly, children elevated on CU traits and not exhibiting problems with conduct at the first assessment period showed the second largest amounts of self-reported delinquent behaviors (i.e., more significant rates

than children with conduct problems without high levels of CU traits). Additionally, Christian and colleagues (1997) found that youth displaying conduct problems only had more elevated rates of police contact than those children not displaying conduct problems only if they also had higher levels of CU traits.

Further evidence points to the connection between CU traits and the persistence and severity of youth behavioral problems. Pardini and Fite (2010) noted that CU traits were related to persistent and serious future criminal behavior (e.g., homicide, aggravated assault, sexual assault, robbery) in a community sample of first, fourth, and seventh grade boys. Additionally, CU traits were associated with increases in violent behaviors during the two-year follow-up period. In a study of detained adolescent males charged with a sexual offense, offenders who also had higher levels of CU traits were found to use more violence during offenses, have more victims, and display more planning in sexual offenses than those offenders with lower levels of CU traits (Lawing, Frick, & Cruise, 2010). In addition, adolescent CU traits appear to be predictive of self-reported delinquency, arrests, and Antisocial Personality Disorder (ASPD) in early adulthood (McMahon, Witkiewitz, Kotler, & The Conduct Problems Prevention Research Group, 2010). These findings are particularly robust, as the researchers controlled for Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), and childhood onset of CD.

Beyond the overall connection between CU traits and aggressive behaviors, violence, and juvenile delinquent acts, some studies have examined differences between the three facets of CU traits (i.e., uncaring, callousness, and unemotionality) in an attempt to further discern which aspects of CU traits are most pertinent for antisocial behavior

(Essau, Sasagawa, & Frick, 2006). Specifically, uncaring is represented by an overall absence of motivation and effort in tasks, callousness indicates an absence of remorse and lack of concern for others, and unemotionality demonstrates an absence of expression of affect (Frick, 2009). In adolescents, callousness has been shown to be related to aggressive and violent behaviors, while uncaring traits have been shown to be associated with sexual offending and juvenile delinquency (e.g., Ansel, Barry, Gillen, & Herrington, 2015; Kimonis, Frick, Skeem, Marsee, Cruise, Munoz, Aucoin, & Morris, 2008; Kimonis, Fanti, Isoma, & Donoghue, 2013; Pardini, 2006). The unemotionality dimension has not clearly demonstrated such associations.

Therefore, although CU traits in general have been associated with both aggression and delinquency, it appears that certain facets of CU traits may be associated with distinct behaviors. Because the uncaring facet is suggestive of a lack of motivation or lack of concern about rules and not necessarily an absence of regard for the feelings of others, it makes theoretical sense that it may not necessarily relate to violent behavior toward others. Callousness, on the other hand, denotes a lack of caring for others and absence of empathy which may explain why it is more likely to be associated with both aggressive and violent behaviors. Thus, it is clear that CU traits are related to juvenile delinquency and that the facets of CU traits may uniquely influence juvenile antisocial behavior. Furthermore, although overall psychopathy, aggression, and impulsivity may also have associations with delinquency and other maladaptive behaviors, CU traits appear to make distinctions within antisocial youth in terms of their connection to particularly severe, persistent, and varied problem behaviors (e.g., Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick et al., 2005: Lawing et al., 2010).

Why, then, are CU traits such an important predictor of juvenile delinquency? The presence of CU traits denotes an absence of remorse for actions, lack of concern for others' feelings, reduced concern for punishment associated with problematic behaviors, and a lack of emotional expression (Frick, 2009; Pardini et al., 2003). Therefore, this set of tendencies might promote persistent engagement in behaviors that are oriented toward personal desires or rewards without concern for the impact of the behavior on others or society in general. Further, the connection between CU traits and adult recidivism (Gretton, Hare, & Catchpole 2004) may be at least partly attributable to a reduced concern regarding punishment (Pardini et al., 2003). Thus, existing research indicates that individuals with CU traits might not only be more likely than individuals without CU traits to engage in delinquent behaviors, but they are also more likely to repeat those behaviors, making further knowledge regarding the development of CU traits and the contextual factors that heighten their associated behavioral risks necessary.

In short, across community, clinical, and detained samples, child and adolescent CU traits are an important marker of delinquency, significant conduct problems, and lack of concern for the consequences of such behaviors. Additionally, CU traits have been shown to distinguish adolescents who will continue engaging in antisocial behaviors into adulthood from adolescents who will cease criminal behavior (Falkenbach, Poythress, & Heide, 2003). Although it appears that CU traits are an important intrapersonal risk factor for behavioral problems, contextual elements may also play a part in increasing the risk for the development of delinquency among youth with CU traits.

Parental Incarceration and Juvenile Delinquency

Ample research shows a connection between a history of parental incarceration and juvenile delinquency. The United States has higher rates of imprisonment than any other country (Walmsley, 2013). In addition, approximately 53% of the nation's prisoners have a child younger than 18 (Glaze & Maruschak, 2008). Approximately 2.3% of the United States adolescent population has a parent who is currently incarcerated. The percentage of children who have an incarcerated parent increased by 80% between 1991 and 2007, and it is estimated that one out of every 25 Caucasian children and one out of every four African-American children born in the year 1990 has had a parent incarcerated by the age of 14 (Walmsley, 2009). It is clear, then, that parental incarceration affects a significant and growing proportion of youth at some point prior to adulthood.

Although the incidence of parental incarceration appears to be increasing, little research examining the long-term effects of having a parent who is incarcerated exists. The available research points to numerous potential negative outcomes, which include both externalizing and internalizing problems (see Aaron & Dallaire, 2010; Dallaire, 2007; Geller, Garfinkel, Cooper, & Mincy, 2009; Murray & Farrington, 2008; Murray, Farrington, & Sekol, 2012; Ou & Reynolds, 2010). Behavioral outcomes associated with having a history of parental incarceration include delinquency, drug use, and contact with the criminal justice system (Miller & Barnes, 2015). More specifically, Aaron and Dallaire (2010) found that a history of parental incarceration was predictive of delinquent behavior in children even beyond demographic characteristics and other risk factors such as poverty and substance abuse. In addition, boys who have had a parent incarcerated by

the age of 10 exhibit twice the risk of antisocial behavior compared to boys who do not have a history of parental incarceration (Murray & Farrington, 2005). Furthermore, paternal criminal history has been associated with antisocial behavior in offspring (Murray & Farrington, 2008), and maternal incarceration has been related to future adult criminal activity (Huebner & Gustafson, 2007).

In a longitudinal study designed to assess unique risks to children of incarcerated parents, sons of incarcerated fathers displayed more behavioral problems than male children whose fathers did not have an incarceration history (Geller et al., 2009). Additionally, that study concluded that the children who had incarcerated parents experienced more economic and residential instability. In a recent meta-analysis encompassing 40 studies, parental incarceration was associated with increased risk of offspring engaging in antisocial behavior. However, parental incarceration was not associated with later drug use, problems with mental health, or poor educational performance for children (Murray, Farrington, & Sekol, 2012).

Although research in the area of parental incarceration has expanded in recent years, no research has examined whether the length of parental incarceration might impact future negative outcomes of offspring. Two studies did, however, examine how the age of the child at parental incarceration might influence certain negative outcomes. A study by Swisher and Roettger (2012), utilizing subsamples of youth in the National Longitudinal Study of Adolescent Health, examined the association of having a biological father incarcerated with depression and delinquency. Adolescents were asked about the incidence of paternal incarceration and, if they indicated a history, were then asked to provide their age when their father was first incarcerated and their age when

their father was most recently released from jail or prison. A father's initial incarceration occurring between birth and initial data collection (during childhood) was related to higher depression scores controlling for gender, race/ethnicity, and socioeconomic status. Additionally, paternal incarceration both between birth and initial data collection (childhood) and paternal incarceration prior to birth that continued after birth were associated with serious delinquency (i.e., aggressive behavior, selling drugs, stealing items worth more than $50.00).

In a separate study by the same researchers (Roettger & Swisher, 2011) utilizing data from adolescents in the 7th to 12th grades, a father's incarceration was associated with increased susceptibility for delinquency both when the incarceration had occurred prior to birth and when it had occurred after birth but prior to initial data collection, controlling for both race and age. However, having a history of paternal incarceration post-birth (i.e., during childhood) was associated with increased delinquency at all ages (ages 12-25) relative to experiencing paternal incarceration prior to birth or an absence of paternal incarceration history. It also appeared that this group's propensity for delinquency rose more swiftly between the ages of 12 to 15 than that for other groups and plateaued in the early 20s, although still remaining higher than that of comparison groups. Roettger and Swisher (2011) concluded, "Those experiencing a father's incarceration in childhood or early adolescence are more likely to engage in behavior that heightens the risk for arrest and incarceration as adults" (p. 1130). Therefore, experiencing the absence of a parent due to incarceration—relative to the incarceration happening before the child's birth—appears to be particularly associated with later

delinquency; however, no known studies have investigated the total length of parental incarceration as a specific risk factor for future delinquency.

Although not yet studied, it stands to reason that total length of parental incarceration is important to consider in the present line of research. For example, several brief incarcerations (i.e., recidivism) resulting in a long total incarceration time may be indicative of parental psychopathic traits and a chaotic living environment for the child. Additionally, a longer total incarceration time would involve a lengthy absence from the child's life, and if a parent is incarcerated in a single sentence for a longer period of time, it is likely that the offense committed was more severe, which may also signal a greater risk for offspring to engage in delinquent activity. Overall, previous findings clearly point to parental incarceration as a predictor of negative outcomes for youth, particularly antisocial behavior. However, specific aspects of the incarceration (e.g., length) in terms of its relation to adolescent delinquency need further attention.

The Interplay between Familial Factors and CU Traits

As noted above, the association between parental incarceration and CU traits in adolescents and the combined role of these factors in adolescent delinquency has yet to be explored. By focusing on these two predictors of juvenile delinquency separately, previous research may have missed their potential combined impact. There are several ways in which these constructs may be related. Past research has shown evidence supporting both genetic influences and a role of social modeling in the association between familial factors and child outcomes such as aggression. For example, concentration of crime within a family appears to be a common scenario, as research had found that less than 10% of the families in any community account for over 50% of that

community's crime (Moffitt, 2005), but this familial concentration of criminality may be a product of either genetic or proximal environmental influences. Although it has been estimated that genetic heritability may impact between 40 to 50% of population variance regarding antisocial acts, it does not appear to be the only influence, as environmental factors shared by family members are predicted to account for 15% to 20% of population variance in antisocial behavior (Miles & Carey, 1997; Rhee & Waldman, 2002).

CU traits in particular have demonstrated a genetic influence, yet this conclusion also has some caveats. Viding, Blair, Moffitt, and Plomin (2005) found higher genetic influence without influence of shared environment in 7 year-old twins with both antisocial behavior and CU traits than in twins with only antisocial behavior, who showed moderate genetic and shared environmental influence. In another study, antisocial behavior was more heritable in 9 year-old twins with CU traits than without, even after controlling for hyperactivity (Viding, Jones, Frick, Moffitt, & Plomin, 2008). It also appears that psychopathic traits in a parent may influence his/her offspring's delinquent behaviors later in life. For example, Beaver, Rowland, Schwartz, and Nedelec (2011) found a genetic connection using an adoption- based research design for psychopathic traits between fathers with a criminal history and their offspring. Additionally, a study examining the children of homicide offenders noted that offenders who were high in psychopathic traits had a higher proportion of offspring who had committed offenses against a person and that higher parental psychopathy was associated with an earlier age of criminal prosecution in offspring (Repo-Tiihonen, Tiihonen, Lindberg, Weizmann-Heneliuse, Putkonen, & Hakkanen, 2010). Furthermore, Loney et al. (2007) found a significant relation between maternal CU traits and child CU traits. However, this

relation was mediated by parenting dysfunction (i.e., overly harsh, inconsistent, and/or uninvolved parenting), suggesting potential contextual influences as well. Therefore, although the source of the association is unclear, parental psychopathy may play a particularly important part in both a child's CU traits and engagement in delinquency.

A large body of research has investigated characteristics of the child (e.g., personality traits, temperament) and environmental factors (e.g., criminogenic environment) as main influences on violence later in life (e.g., Aaron & Dallaire, 2010; Falkenbach et al., 2003; Farrington, 1989; Frick et al., 2003; Lynam, 1997; Miles & Carey, 1997; Murray, Farrington, & Sekol, 2012; Rhee & Waldman, 2002; Viding et al., 2005; Viding et al., 2008). However, these variables have generally been studied separately. The potential connection between, and additive effect of, parental incarceration and adolescent psychopathy may provide a more comprehensive model of risk for juvenile delinquency as it may help elucidate individual (e.g., personality), genetic (e.g., parental psychopathy), and environmental (e.g., absence of a parent due to incarceration, criminal modeling) contributing factors.

Although research has yet to formally examine the potential combined effect of having both psychopathic traits and a history of parental incarceration, several studies have noted possible associations between familial experiences during childhood and psychopathic traits. For example, Harris, Rice, and Lalumiere (2001) found that parental antisociality (i.e., criminal activity, substance dependence) was a better predictor of psychopathic traits than neurodevelopmental insults. Several childhood predictors such as harsh discipline, having had parents convicted of crimes, and high impulsivity were associated with psychopathy at age 48 (Piquero, Farrington, Fontaine, Vincent, Coid, &

Ullrich, 2012). Additionally, children with both high levels of CU traits and a diagnosis of ODD or CD showed higher rates of parental arrest in their history, further suggesting some connection between CU traits, behavioral problems, and parental incarceration (Frick et al., 1994). Given the significant support for the relations between CU traits and juvenile delinquency and between parental incarceration and juvenile delinquency, it stands to reason that studying the combination of these predictors would add to the literature and may give further support to the theory that psychopathic traits do not influence adolescents' delinquent behavior in isolation. More specifically, familial factors could play an integral part in the manifestation of maladaptive behaviors with regard to adolescent psychopathic traits.

As some studies have found that traits of psychopathy may be amenable to interventions in some youth but harder to treat in adults (Hawes & Dadds, 2007), it is important to identify these tendencies early, as well as other potential influential environmental factors, to provide appropriate and timely intervention (McDonald, Dodson, Rosenfield, & Jouriles, 2011). Additionally, because research has linked childhood experiences to adult antisocial behavior, the environmental context of psychopathic traits in the prediction of juvenile delinquency must be considered (Marshall & Cooke, 1999). Although an individual may possess a genetic predisposition to psychopathic traits, his or her environment is likely influential in the manifestation of those traits. Therefore, the combination of having CU traits and a parent or primary caregiver who is incarcerated may be indicative of a distinct group of adolescents at high-risk of engaging in juvenile delinquent behaviors, particularly when compared to other youth with CU traits who have not experienced a parental incarceration.

Age of Onset of Problem Behaviors

Although psychopathy and parental incarceration have been related to the development of juvenile delinquent behaviors, existing studies also suggest that age of first offense may be an important marker of a wide variety of behavioral problems, including future severe delinquent behavior. Despite the many difficulties with predicting future behavior based on earlier childhood behavior or personality characteristics, research indicates that some personality characteristics in childhood may remain stable and that behavior in childhood may be predictive of future behavior (Caspi, Harrington, Milne, Amell, Theodore, & Moffitt, 2003; Farrington, 1994). Moffitt (1993) has proposed two distinct trajectories by which antisocial or delinquent behavior may develop. "Life course persistent" antisocial behavior is believed to develop early in childhood, have a neurological or genetic basis, and persist throughout adolescence and adulthood. Additionally, research suggests that both neuropsychological and environmental factors play a part in the development and maintenance of antisocial behavior in this trajectory. In contrast, "adolescent-limited" antisocial behavior is viewed as part of a normative developmental pathway in adolescence and is particularly influenced by contextual factors, such as delinquent peer affiliations (Moffitt, 1993). This trajectory of conduct problems tends to peak in adolescence and diminish with age. Therefore, age of onset of delinquent behavior may be an important predictor of future antisocial acts and may differentially point toward specific targets of interventions.

Several studies have noted that a significant amount of severe and persistent offenders tend to begin engaging in antisocial behavior in childhood rather than during adolescence (Loeber & Farrington, 1998; Moffitt, 1993). For example, in a sample of

boys who had exhibited delinquent behavior, those with a younger age of onset reported higher levels of almost all types of delinquent behaviors during adolescence than those with age of onset occurring at a later age (Tolan, 1987). In addition, in incarcerated juvenile males, early age of onset of criminal behavior and CU traits both individually and combined have been related to higher levels of victim injury (Vitacco, Caldwell, VanRybroek, & Gabel, 2007). Odgers, Moffitt, Broadbent, Dickson, Hancox, Harrington, & Caspi (2008) conducted a longitudinal study examining adult outcomes of childhood antisocial behavior and used general growth mixture modeling to identify four antisocial behavior trajectory groups: life-course persistent (LCP), adolescent-onset, childhood-limited, and low trajectory. Those in the LCP group had more neurodevelopment, social, and familial risk factors that occurred in childhood versus the participants in the adolescent-onset group. Additionally, they found that at age 32, individuals in the LCP group were more likely than those in the other pathways to engage in serious violence and experience significant economic problems, along with mental and physical health problems.

Additionally, research has suggested that youth who display conduct problems that persist into adolescence and adulthood are more likely than those whose behavioral problems subside to have experienced a variety of risk factors, including head injury, higher levels of hyperactivity, a family history of alcohol abuse, and parent criminality (Odgers et al, 2008; Raine, Moffitt, Caspi, Loeber, Stouthammer-Loeber, & Lynam, 2005). Therefore, a wealth of evidence suggests that early childhood problem behavior is predictive of persistent and relatively severe adolescent and adult criminal behavior (e.g., Fergusson & Horwood, 1995; Huesmann, Eron, Lefkowitz, & Walder, 1984; Moffitt,

1990; Pulkkinen & Tremblay, 1992; Stattin & Magnusson, 1989; Tremblay, Pihl, Vitaro, & Dobkin, 1994). As both CU traits and parental incarceration are relevant for delinquency in adolescence, those individuals who have an early age of onset of delinquency, accompanied by both CU traits and a history of parental incarceration may be most at-risk for future negative consequences, such as incarceration. Therefore, age of onset of delinquent behavior was also examined in the present study.

Hypotheses

It was hypothesized that overall levels of CU traits and the specific dimensions of callousness and uncaring would be positively associated with self-reported juvenile delinquency (Hypothesis 1). Additionally, it was hypothesized that parental and/or primary caregiver incarceration would be associated with juvenile delinquent behaviors and CU traits (Hypothesis 2). It was also expected that the length of parental and/or primary caregiver incarceration would be associated with both juvenile delinquent behaviors and CU traits (Hypothesis 3). Although length of incarceration has not yet been studied regarding adolescent delinquency or CU traits, this study hypothesized that length of parental and/or primary caregiver incarceration would be associated with these factors due to the potential link between length of incarceration and parental personality characteristics, as well as a chaotic living environment as discussed above. It was hypothesized that a history of parental and/or primary caregiver incarceration would moderate the expected association between CU traits and juvenile delinquency such that a history of parental and/or primary caregiver incarceration would strengthen the relation (Hypothesis 4). Additionally, it was hypothesized that age of onset of delinquent behaviors would act as a further moderator in this model such that an earlier age of onset

would strengthen the connection between CU traits, parental incarceration, and delinquency (Hypothesis 5). Finally, parental/primary caregiver self-report of psychopathy was expected to be related to higher levels of CU traits in adolescents, a higher level of juvenile delinquency in offspring, and a greater likelihood of parental and/or primary caregiver incarceration (Hypothesis 6).

CHAPTER II

METHODOLOGY

Participants

Participants were 213 adolescents from a military style residential program who had completed parent-report and self-report data available for the present study. The sample consisted of primarily male participants (201 males, 12 females) who ranged in age from 16 to 19 years (M = 16.92; SD = .77). Most participants (65.7%) were Caucasian, 27.7% were Black, and 1% were classified as being from "Other" ethnic/racial backgrounds. Twelve participants (5.6 %) did not report their ethnic/racial background.

Materials

Parental Measures

Incarceration Measure. Parents/guardians completed a form that provided information regarding incarceration history (Appendix A). Items assessed for any previous incidence of incarceration, length of incarceration, offense associated with the incarceration, longest time period incarcerated, and the incarceration history of any other primary caregiver for the child. Two items (i.e., "Has either parent of this child ever been incarcerated longer than overnight following an arrest?" and "Has any primary caregiver of this child ever been incarcerated longer than overnight following an arrest?") assessing the previous incidence of incarceration, dichotomized as present vs. not present, were used to test Hypotheses 2, 4, 5, and 6. Additionally, one question assessing length of incarceration on a 6-point response scale (i.e., less than 6 months, 6 months to 1 year, 1 to 3 years, etc.; see Appendix A) was used to test Hypothesis 3.

Psychopathic Personality Inventory Short Form (PPI-SF; Lilienfeld & Hess, 2001). The Psychopathic Personality Inventory Short Form (PPI-SF) is a 56-item adult self-report measure of personality traits related to psychopathy. It was developed as a shorter alternative to the original Psychopathic Personality Inventory (PPI; Lilienfeld & Andrews, 1996) to assess psychopathy in non-institutionalized populations. A shortened version of the PPI was chosen to decrease the total time required to complete the measure. PPI scores have demonstrated good internal consistency, test-retest reliability within a 30-day time frame, and construct validity in undergraduate samples (Lee & Salekin, 2010; Lilienfeld & Andrews, 1996), but limited evidence exists about the reliability and validity of the PPI-SF. Although some differences between the PPI and PPI-SF have been reported, such as scale scores on the PPI being more significantly correlated with other psychopathy criteria, rather than PPI-SF scale scores, these discrepancies were mainly observed in incarcerated adults, juvenile justice samples, and foster care samples of youth (Kastner, Sellbom, & Lilienfeld, 2012; Smith, Edens, & Vaughn, 2011). Thus, the PPI-SF is still believed to accurately assess psychopathy in a community population of adults (Kastner, Sellbom, & Lilienfeld, 2012).

The PPI-SF consists of eight subscales, consistent with the original PPI. Machiavellian Egocentricity includes ruthlessness and a willingness to manipulate others, the Social Potency subscale assesses charm and interpersonal dominance, Coldheartedness involves callousness and an absence of guilt, the Carefree Nonplanfulness subscale assesses a failure to plan behavior and inhibit maladaptive impulses, Fearlessness measures the respondent's propensity for risk taking behavior, Blame Externalization assesses blaming others for problems or misfortunes, Impulsive

Nonconformity includes a lack of concern about social traditions, and Stress Immunity involves an absence of emotional reactions to potentially anxiety-provoking situations. Although the total score was utilized in the analyses regarding overall parental psychopathy, subscale scores were also further examined, as they were shown to relate to some of the major variables in the current study. Total score internal consistency was .73 in the present sample. Internal consistency coefficients for subscales ranged from .50 (Coldheartedness) to .84 (Blame Externalization).

Adolescent Measures

Inventory of Callous-Unemotional Traits (ICU; Frick, 2004). The ICU is a 24-item self-report measure assessing CU traits, such as absence of empathy or guilt and flat affect (Frick, 2004). It was developed from the Callous-Unemotional (CU) scale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), an instrument extensively utilized to study psychopathy-linked characteristics in children and adolescents. The ICU is intended to provide a brief, yet broad, evaluation of multiple aspects of CU traits. On the ICU, responses range from 0 (*not at all true*) to 3 (*definitely true*). The ICU consists of three scales: Callousness (e.g., "I do not care who I hurt to get what I want"), Uncaring ("I always try my best"-reverse scored), and Unemotional (e.g., "I do not show my emotions to others"). Two large studies have shown support for the construct validity of the ICU. Essau, Sasagawa, and Frick (2006) found a three-factor structure of Callousness, Uncaring, and Unemotional in a study including 13 to 18 year-old adolescents. Additionally, Kimonis et al. (2008) found significant correlations between indicators of delinquency and the ICU. It was also shown that the Uncaring and Callousness ICU scales were moderately correlated with the CU scale of the APSD.

Overall internal consistency for scores on the ICU was α = .76 in the present sample, with coefficients of .78, .61, and .55 for the Uncaring, Callousness, and Unemotional scales, respectively.

Self-Report of Delinquency (SRD; Elliott, Huizinga, & Ageton, 1985). The SRD is a self-report measure that assesses juvenile illegal activity. It consists of 34 illegal acts, involving violent, property, drug, and status offenses. The SRD was derived from the offenses reported in the Uniform Crime Report which had a juvenile base rate greater than 1% at the time of its development. "Yes" or "no" responses are made by the participant to indicate whether he/she has ever engaged in the specific behavior (e.g., "Have you ever purposely damaged or destroyed property belonging to your parents or other family members?"). Total score of the SRD represents the total number of various offenses reported, with a possible range from 0 to 34. Internal consistency among the items comprising the total score was α = .91 for the current study. Additionally, for each "yes" response, participants are asked to indicate their age the first time they engaged in that specific behavior, thereby providing the age of onset for delinquent behaviors. For those adolescents reporting more than one offense, the youngest age of onset was used for analyses.

Procedure

During their child's admission into the residential program, parents or guardians who agreed to participate signed a consent form which explained the purpose and a description of the research study before completing the Incarceration History and PPI-SF. Parents of adolescents under the age of 18 were provided with the option to refuse for their children to be contacted regarding the study. Adolescent participants provided

informed consent/assent regarding their own participation. Their participation or refusal did not affect their status in the program in any way. Adolescents completed measures (i.e., ICU and SRD) as part of a larger study in classroom settings in groups of approximately 12 to 18 participants. Of those adolescents who agreed to participate, 213 had matching parent data, representing an 85% response rate relative to the total program enrollment.

Analyses

Hypotheses 1, 2, 3, and 6 were tested using correlational analyses. Moderated multiple regression was conducted to examine the moderating effects of parental incarceration (Hypothesis 4). Specifically, PROCESS version 2.04 (Hayes, 2013) was used to test the potential moderating role of parental incarceration on the relation between CU traits and juvenile delinquency. The predictors for this analysis were centered to assist in the interpretation of the interaction term. The first step of this model included overall CU traits and history of parental incarceration (i.e., dichotomized based on the item "Has either parent of this child ever been incarcerated longer than overnight following an arrest?" from the Parental Incarceration Measure[1]) as predictors. The second step of the analysis included the two-way interaction term between history of parental incarceration and overall CU traits. Afterward, the model was repeated for each CU dimension individually. Finally, analyses were conducted to explore age of onset of delinquency as a marker of higher adolescent delinquent behavior. Onset of delinquency was coded dichotomously as early (younger than age 10) or late (10 or older) based on the earliest reported age at which a participant engaged in one of the behaviors assessed

[1] Analyses were also repeated with the combined variable of parental and/or caregiver incarceration history. The pattern of results did not change.

by the SRD. Coding for early versus late onset of delinquency was based on the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5; American Psychiatric Association, 2013) subtypes for Conduct Disorder, which specifies either a childhood or adolescent onset. To test Hypothesis 5, age of onset was entered as an additional moderator in the regression model described above such that the final step examined the three-way interaction between age of onset, CU traits, and parental incarceration history in the prediction of self-reported juvenile delinquency.

CHAPTER III

RESULTS

Descriptive statistics for all study variables are shown in Tables 1 and 2. Ninety-two (92) of the total 213 participants (43%) reported a history of parental and/or caregiver incarceration.

Table 1

Descriptive statistics for study variables

Variable (possible range)	*M*	*SD*	*Minimum*	*Maximum*	*Skewness*	*Kurtosis*
Parent/Caregiver Psychopathy (Total Score) (56-224)	115.66	15.61	41	155	-.69	2.92
Callousness[a] (0-33)	8.7	4.17	0	29	1.16	2.83
Uncaring[a] (0-24)	10.23	4.58	0	24	.02	-.33
Unemotional[a] (0-15)	8.75	2.56	2	16.67	.42	-.01
Self-reported Delinquency[a] (0-34)	12.05	7.17	0	32	.51	-.36

[a]Prorated scores were used to assist with accounting for missing item responses.

Self-reported callousness was positively skewed and leptokurtic, demonstrating that most participants scored relatively low on this variable and that scores tended to cluster around low scores on callousness. Gender did not correlate significant with

juvenile delinquency. However, the current sample consisted of a large majority of male participants, which left little variance in gender necessary to detect such an effect. Given the large number of male participants in the current sample, analyses were repeated excluding females to examine the results while reducing any systematic error related to gender. Results of those analyses are discussed in the below *post hoc* analyses section. Adolescents' age was negatively correlated with both self-reported delinquency, $r = -.16$, $p = .02$, and parent/caregiver incarceration length, $r = -.30$, $p = .04$, such that an older age was associated with lower levels of self-reported delinquency and shorter length of parent/caregiver incarceration. Age was therefore controlled for during all regression analyses.[2] Ethnicity was not correlated with any study variables and was therefore not controlled for during subsequent analyses.

[2] Regression analyses were repeated without controlling for age. The pattern of results did not change.

Table 2

Sample Characteristics for Length of Parental/Caregiver Incarceration

Length of Parental/Caregiver Incarceration	*# of parent/caregivers*	*Sample % of parent/caregivers*
< 6 months	12	5.6
6 months to 1 year	3	1.4
1 – 3 years	14	6.6
3 – 5 years	4	1.9
5 – 10 years	10	4.7
> 10 years	4	1.9
Total	47*	22.1

*Note: Of the 92 participants who reported a history of parental/caregiver incarceration, only 47 provided information regarding length of incarceration.

As shown in Table 3, correlational analyses indicated that overall self-reported CU traits were positively related to self-reported delinquency, $r = .28$, $p < .001$. Additionally, callousness and uncaring traits specifically were positively associated with delinquency, $r = .25$, $p = .001$, $r = .26$, $p < .001$, respectively. Therefore, Hypothesis 1 was supported. A history of parental and primary caregiver incarceration grouped together was not significantly associated with either juvenile delinquency or CU traits, $r = .13$, $p > .05$, $r = .04$, $p > .05$, respectively. However, a history of parental incarceration, not including history of caregiver incarceration, was positively associated with juvenile delinquency, $r = .14$, $p = .04$, but not with higher levels of CU traits. Therefore, Hypothesis 2 was partially supported. Length of parental/caregiver incarceration was positively associated with self-reported parental/caregiver psychopathy, $r = .35$, $p = .02$,

but not with higher levels of CU traits in adolescents or with delinquency in offspring, in contrast to Hypothesis 3.

Although overall parental psychopathy was not associated with juvenile delinquency or adolescent self-reported CU traits, subscales of self-reported parental/caregiver psychopathy were related to variables of interest in this study, as shown in Table 4. Machiavellian Egocentricity was positively correlated with juvenile delinquency, $r = .16$, $p = .02$. Stress Immunity was negatively associated with juvenile delinquency, $r = -15$, $p = .03$, such that parental absence of emotional reactivity in the face of potential anxiety provoking situations was associated with lower levels of youth self-reported delinquency. Social Potency was associated with lower levels of adolescent self-reported CU traits, $r = -.14$, $p = .05$. Length of parental/caregiver incarceration was positively associated with parental Machiavellian Egocentricity, $r = .45$, $p = .01$, Fearlessness, $r = .30$, $p = .04$, Impulsive Nonconformity, $r = .44$, $p = .002$, and Carefree Nonplanfulness, $r = .29$, $p = .05$.

Table 3

Correlations among Study Variables

	1	2.	3.	4.	5.	6.	7.	8.	9.
1.Parental/ Caregiver Incarceration (*N* = 92)	-	.94***	-.07	-.07	.04	-.06	.01	.08	.13
2. Parental Incarceration (*N* = 86)		-	.01	-.11	.04	-.06	.09	-.02	.14*
3. Incarceration Length (*N* = 47)			-	.35*	.05	-.16	.13	-.12	-.02
4. Parental Psychopathy (*N* = 213)				-	-.05	.01	-.03	-.11	.01
5. ICU total score (*N* = 213)					-	.54***	.78***	.39***	.28***
6. Callousness (*N* = 213)						-	.07	.24***	.25**
7. Uncaring (*N* = 213)							-	.03	.26***
8. Unemotional (*N* = 213)								-	-.04
9. Delinquency (N = 213)									-

Note: Variable 1 includes a history of parental and/or caregiver incarceration, whereas variable 2 only includes a history of parental incarceration. *$p < .05$, **$p < .01$, *** $p < .001$

Table 4

Correlations among PPI-SF subscales

	1	2.	3.	4.	5.	6.	7.	8.	9.
1. Machiavellian Egocentricity	-	.40***	-.01	.33***	.55***	.53***	.45**	.02	.16*
2. Stress Immunity		-	.37***	.05	-.13	-.32***	-.16	-.01	-.15*
3. Social Potency			-	.21**	.11	-.01	-.03	-.14*	-.11
4. Fearlessness				-	.40***	.17**	.30*	-.13	-.02
5. Impulsive Nonconformity					-	.33***	.44**	.02	.13
6. Carefree Nonplanfulness						-	.29*	.04	.09
7. Incarceration Length							-	.05	-.02
8. ICU total score								-	.29***
9. Self-reported Delinquency									-

Note: Variable 1 includes a history of parental and/or caregiver incarceration, whereas variable 2 only includes a history of parental incarceration. *$p < .05$, **$p < .01$, *** $p < .001$

The results of regression analyses are shown in Tables 5-9. The first step of the initial model included overall CU traits and history of parental incarceration as predictors of juvenile delinquency (see Table 5). Significant main effects were found for both overall CU traits, $b = .24$, $se = .06$, $p < .001$, and history of parental incarceration, $b = 1.9$, $se = .96$, $p = .047$, $R^2$for the model = .10, $p < .001$. The second step of the model included the interaction term for history of parental incarceration by overall CU traits and

was significant, b = -.23, se = .12, p = .049, with the interaction term explaining a significant increase in variance in self-reported delinquency, ΔR^2 = .02, p = .049.

Table 5

Overall CU traits and parental incarceration as predictors of juvenile delinquency

	B (se)	*R^2 for Model*
		.12
Step 1: Main Effects		
Self-Reported CU Traits	.24 (.06)***	
Parental Incarceration History	1.9 (.96)*	
Step 2: Interaction		.14
Self-Reported CU Traits X Incarceration History	.23 (.12)*	
Change in R^2	.02*	

Note: Unstandardized effects are reported.

N = 213 *p < .05, **p < .01, *** p < .001

This interaction was plotted by entering the simple slopes provided by the PROCESS program of parental incarceration at high and low levels of CU traits (defined as $\pm$ 1 *sd* from the *mean*). This plot indicated that adolescents with the lowest levels of overall CU traits as well as no history of parental incarceration reported the lowest levels of juvenile delinquency (see Figure 1).

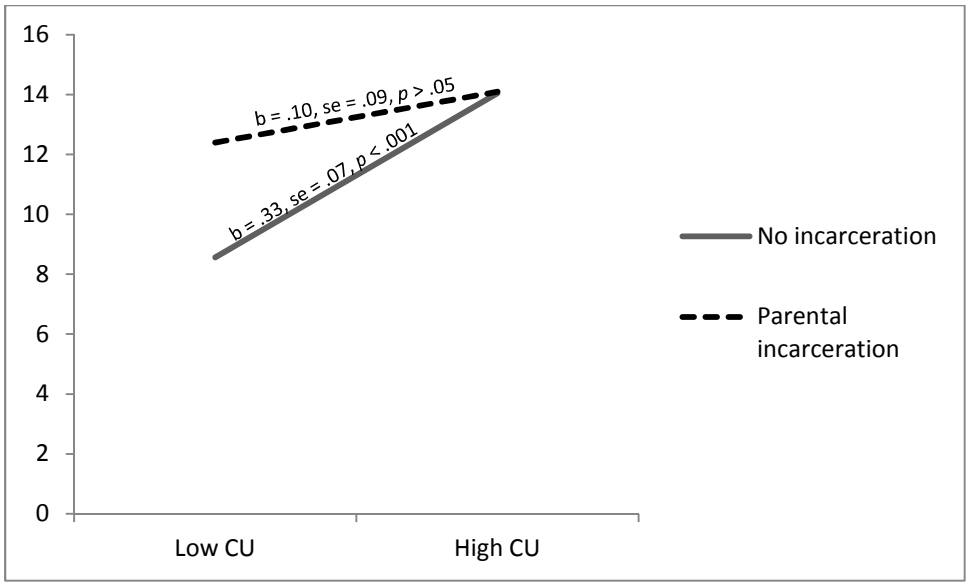

Figure 1. Multiple Regression Analyses with Overall CU traits and Parental Incarceration as Predictors of Juvenile Delinquency

Regression models were then analyzed with the separate subscales of the ICU, beginning with the Uncaring subscale (see Table 6). The first step of the model included self-reported uncaring and a history of parental incarceration as predictors. A significant main effect was found for uncaring, $b = .39$, $se = .10$, $p < .001$, $R^2$for the model = .08, $p < .001$, but not for a history of parental incarceration. The second step of the analysis included the two-way interaction term of history of parental incarceration by self-reported uncaring as predictors of juvenile delinquency. This model significantly predicted delinquency, with the interaction term, $b = -.45$, $se = .22$, $p = .04$, explaining a significant increase in variance in self-reported delinquency, $\Delta R^2 = .02$, $p = .04$.

Table 6

Uncaring traits and parental incarceration as predictors of juvenile delinquency

	B (se)	*R^2 for Model*
		.10
Step 1: Main Effects		
Self-Reported Uncaring Traits	.39 (.10)***	
Parental Incarceration History	.17 (.99)	
Step 2: Interaction		.12
Self-Reported Uncaring Traits X Incarceration History	-.45 (.22)*	
Change in R^2	.02*	

Note: Unstandardized effects are reported.

N = 213 *$p < .05$, **$p < .01$, *** $p < .001$

As with the initial regression model, this interaction was plotted using the simple slopes of parental incarceration at high and low levels of uncaring traits. Adolescents who reported relatively lower levels of uncaring as well as no history of parental incarceration tended to report the lowest levels of juvenile delinquent behavior in this sample (see Figure 2).

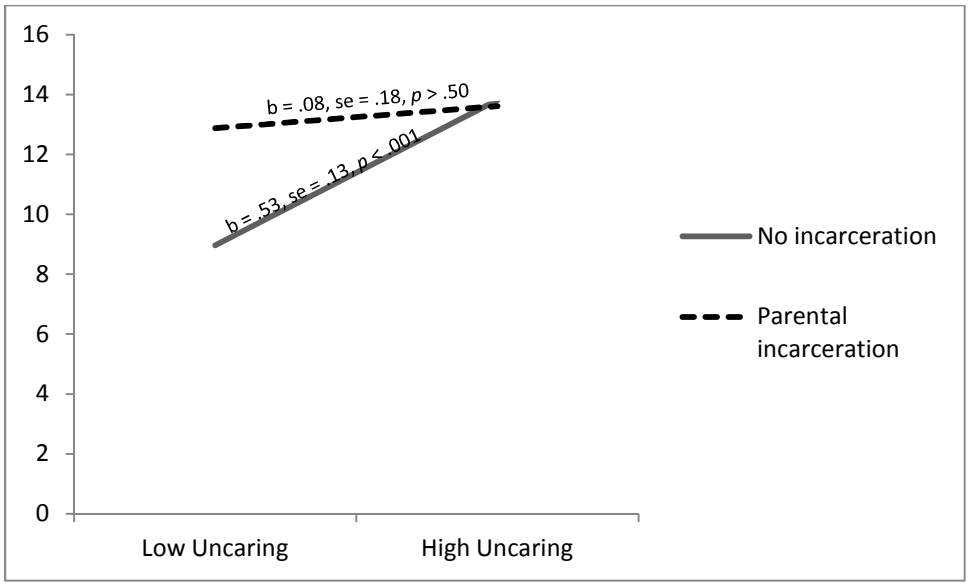

Figure 2. Multiple Regression Analyses with Uncaring traits and Parental Incarceration as Predictors of Juvenile Delinquency

A regression model examining the callousness subscale of the ICU was then conducted (see Table 7). The first step of this model included self-reported callousness and history of parental incarceration as predictors. Significant main effects were found for both parental incarceration history, $b = 2.3$, $se = .99$, $p = .02$, and self-reported callousness, $b = .40$, se = .11, $p = .001$, R^2 for the model = .08, $p < .001$. The second step of the model included the two-way interaction term between history of parental incarceration and self-reported callousness which was not significant.

Table 7

Callousness traits and parental incarceration as predictors of juvenile delinquency

	B(se)	*R^2 for Model*
		.08
Step 1: Main Effects		
Self-Reported Callousness Traits	.40 (.11)***	
Parental Incarceration History	2.3 (.99)**	
Step 2: Interaction		.08
Self-Reported Callousness Traits X Incarceration History	.14 (.23)	
Change in R^2	.001	

Note: Unstandardized effects are reported.

N = 213 *$p < .05$, **$p < .01$, *** $p < .001$

A regression model examining the unemotionality subscale of the ICU as a predictor was then conducted (see Table 8). The first step of this model included self-reported unemotionality and history of parental incarceration as predictors of delinquency. A significant main effect was found for parental incarceration history, b = 2.1, se = .99, p = .04, $R^2$for the model = .02, p = .09, but not for unemotionality. The second step of the model included the two-way interaction term between history of parental incarceration and self-reported unemotionality and was not significant.

Table 8

Unemotional traits and parental incarceration as predictors of juvenile delinquency

	B(se)	R^2 *for Model*
		.036
Step 1: Main Effects		
Self-Reported Unemotional Traits	-.11 (.19)	
Parental Incarceration History	2.1 (.99)*	
Step 2: Interaction		.02
Self-Reported Unemotional Traits X Incarceration History	-.68 (.40)	
Change in R^2	.014	

Note: Unstandardized effects are reported.

N = 213 $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$

Finally, an additional regression model using overall CU traits, history of parental incarceration, and age of onset of youth delinquency as predictors was conducted (see Table 9). The first step of this model included self-reported CU traits, age of onset, and history of parental incarceration as predictors and revealed significant main effects for parental incarceration, $b = 1.9$, $se = .96$, $p = .04$, and overall CU traits, $b = .21$, $se = .06$, $p < .001$, $R^2$for the model = .09, $p < .001$. The second step of the analysis included the two-way interaction terms between CU traits, age of onset, and history of parental incarceration and revealed a significant interaction between parental incarceration history and overall CU traits, $b = -.25$, $se = .12$, $p = .04$, $\Delta R^2 = .03$, $p < .001$, such that no history of parental incarceration coupled with low levels of CU traits predicted the lowest levels of juvenile delinquency. The third step of this model included the three-way interaction

term between overall CU traits, age of onset, and history of parental incarceration. The 3-way interaction effect was not significant.

Table 9

Overall CU traits, age of onset, and parental incarceration as predictors of juvenile delinquency

	B (se)	*R^2 for Model*
		.12
Step 1: Main Effects		
Self-Reported CU Traits	.21 (.06)***	
Parental Incarceration History	1.9 (.96)*	
Age of Onset	-1.1 (.96)	
Step 2: 2-way Interactions		
Age of Onset X Self-Reported CU traits	.21 (.12)	
Self-Reported CU Traits X Parental Incarceration History	-.25 (.12)*	
Age of Onset X Incarceration History	-.98 (1.9)	
Step 3: 3-way Interaction		.12
Age of Onset X Self-Reported CU traits X Incarceration History	.02 (.24)	
Change in R^2	.00	

Note: Unstandardized effects are reported.

N = 213 *$p < .05$, **$p < .01$, *** $p < .001$

Post hoc Analyses

Several *post hoc* analyses were conducted. As only 12 females were included in the overall sample, the above regression analyses were repeated excluding females. It should be noted that of the 12 females in the sample, 11 endorsed a history of parental incarceration; therefore, excluding females brought the sample size for parental incarceration from 92 to 81. Correlational analyses with this reduced sample indicated that overall self-reported CU traits continued to be positively related to self-reported delinquency, $r = .28$, $p < .001$. Additionally, callousness and uncaring traits specifically continued to be positively associated with delinquency, $r = .20$, $p = .005$, $r = .28$, $p < .001$, respectively. A history of parental and primary caregiver incarceration grouped together again was not significantly associated with either juvenile delinquency or CU traits, $r = .13$, $p > .05$, $r = .05$, $p > .05$, respectively. However, a history of parental incarceration, not including history of caregiver incarceration, was marginally positively associated with juvenile delinquency, $r = .14$, $p = .05$, but not with higher levels of CU traits. Length of parental/caregiver incarceration was again positively associated with self-reported parental/caregiver psychopathy, $r = .39$, $p = .009$, but not with higher levels of CU traits in adolescents or with delinquency in offspring.

The initial regression model, including overall CU traits and history of parental incarceration as predictors of juvenile delinquency, was repeated. Significant main effects were again found for overall CU traits, $b = .24$, $se = .06$, $p < .001$, but not a history of parental incarceration, $b = 1.9$, $se = .10$, $p = .06$, $R^2$for the model = .09, $p < .001$. The second step of the model including the interaction term for history of parental incarceration by overall CU traits was not significant when females were excluded.

Regression models were again conducted with the separate subscales of the ICU, beginning with the Uncaring subscale. The first step of the model included self-reported uncaring and a history of parental incarceration as predictors. A significant main effect was again found for uncaring, $b = .41$, $se = .11$, $p < .001$, $R^2$for the model = .09, $p < .001$, but not for a history of parental incarceration. The second step of the analysis included the two-way interaction term of history of parental incarceration by self-reported uncaring as predictors for juvenile delinquency and was not significant.

The regression model examining the callousness subscale of the ICU was then repeated. The first step of this model included self-reported callousness and history of parental incarceration as predictors. Significant main effects were found for both parental incarceration history, $b = 2.2$, $se = 1.0$, $p = .03$, and self-reported callousness, $b = .40$, se = .12, $p < .01$, $R^2$for the model = .06, $p < .01$. The second step of the model included the two-way interaction term between history of parental incarceration and self-reported callousness and was again not significant.

The first step of the model examining unemotionality as a predictor revealed a marginal main effect for parental incarceration history, $b = 2.0$, $se = 1.0$, $p = .05$, $R^2$for the model = .02, $p = .11$, but not for unemotionality. The second step of the model included the two-way interaction term between history of parental incarceration and self-reported unemotionality and was not significant.

Parental/caregiver psychopathy was also explored as an additional moderator in the relation of overall adolescent CU traits and history of parental incarceration with juvenile delinquency in the overall sample (including female participants). In the first step of the model examining overall CU traits, history of parental incarceration, and

parental/caregiver total psychopathy as predictors of juvenile delinquency, the same previously reported main effects were found for both overall CU traits and parental incarceration. However, no main effect was found for parental/caregiver psychopathy in the initial step of the model. The second step of the model included the two-way interaction terms between CU traits, history of parental incarceration, and parental/caregiver total psychopathy as predictors of delinquency. The same previously reported interaction was found for overall CU traits and a history of parental incarceration in this step, but no significant interactions were found regarding parental/caregiver psychopathy. The third and final step of the model included the three-way interaction between CU traits, parental incarceration, and parental/caregiver psychopathy which was not significant.

Length of parental incarceration was also explored as a moderator in the relation of overall adolescent CU traits with juvenile delinquency in the overall sample (including female participants). In the first step of the model examining overall CU traits and length of parental incarceration as predictors of juvenile delinquency, there were no significant main effects. The second step of the model included the two-way interaction term between CU traits and length of parental incarceration. This interaction term also was not significant. It should be noted that analyses examining length of parental incarceration were conducted with a smaller sample size due to the smaller number of participants reporting length of parental/caregiver incarceration (n = 46).

Furthermore, analyses examining parental psychopathy and length of parental/caregiver incarceration as predictors of juvenile delinquency were conducted with the overall sample (including female participants). The first step of this model

included parental/caregiver overall psychopathy and length of parental/caregiver incarceration as predictors of delinquency. No significant main effects emerged. The second step of the model included the two-way interaction term between parental/caregiver psychopathy and length of parental/caregiver incarceration and was not significant.

CHAPTER IV

DISCUSSION

The current study explored the contributions of adolescent CU traits and parental incarceration to juvenile delinquent behavior, including their potential additive effect. Both CU traits and a history of parental incarceration predicted unique variance in juvenile delinquency. Self-reported uncaring traits also emerged as a unique predictor of juvenile delinquent behaviors. This finding suggests that a lack of caring about rules and regulations constitutes a particular risk for engaging in delinquent behaviors.

Furthermore, the interaction between overall CU traits and parental incarceration explained significant variance in juvenile delinquency above the individual main effects, such that individuals with lower levels of overall CU traits and no history of parental incarceration reported the lowest amounts of overall juvenile delinquency. Therefore, in this study, there was no observed additive effect of having both high levels of CU traits and a history of parental incarceration. Instead, elevated levels of CU traits were related to relatively high delinquency independent of a reported history of parental incarceration. This finding suggests that parental incarceration does not clearly influence delinquency among adolescents high in CU traits, but it may be tied to a higher relative risk of delinquency among adolescents who reported lower CU traits.

In addition, adolescents who reported high levels of uncaring, no matter whether their parents had been incarcerated, reported relatively high levels of delinquency. However, similar to overall CU traits, adolescents who reported low levels of uncaring only exhibited higher levels of juvenile delinquency in the presence of a history of parental incarceration. For individuals with no history of parental incarceration and low

levels of uncaring, relatively low levels of self-reported delinquency were also reported, indicating that the lack of both of these risk factors may be particularly predictive of low levels of juvenile delinquency.

High levels of CU traits as well as high levels of uncaring traits continued to be associated with high levels of delinquency regardless of a history of parental incarceration when only male participants were included in the analyses. However, a history of parental incarceration no longer significantly predicted juvenile deliquency in the reduced sample excluding females, and the interaction between CU traits and parental incarceration was also nonsignificant for males only, as was the interaction between uncaring traits and parental incarceration. These findings are likely due to an even smaller sample of participants with a history of parental incarceration when female participants were excluded. Regardless, these findings emphasize the importance of CU traits, and uncaring traits in particular, for predicting adolescent delinquency and the need for future research exploring a history of parental incarceration in conjunction with CU traits and their independent and combined effects in larger samples, including a larger female sample. Moreover, in adolescents lower in CU traits, familial factors, such as parental incarceration, may be particularly influential and in need of further study.

Previous research on parenting seems consistent with this latter notion. Fanti and Centifanti (2014) found that among children low in CU traits, parent-reported distress was associated with an increase in conduct problems, suggesting that youth with lower levels of CU traits may be more susceptible to such parenting influences for conduct problems. Similarly, several studies have suggested that harsh and inconsistent discipline is more clearly associated with conduct problems in youth who *do not* demonstrate

affective deficits, such as absence of remorse, absence of empathy, and callousness, that are typically associated with psychopathy (Edens, Skopp, & Cahill, 2008; Oxford, Cavell, & Hughes, 2003; Wootton, Frick, Shelton, & Silverthorn, 1997). Although higher levels of CU traits have been related to increases in inconsistent discipline and corporal punishment, several domains of parenting, including positive parenting and parental involvement also have been shown to uniquely predict decreases in CU traits (Hawes, Dadds, Frost, & Hasking, 2011).

Overall, among youth low in CU traits, parenting variables, including parenting practices in particular, appear to be relevant for conduct problems. However, in adolescents with high levels of CU traits, evidence is mixed, as it has been demonstrated that there is a bidirectional relation between CU traits and parenting, as well as evidence that familial factors play less of a role in problem behaviors within this subgroup. To date, it is not clear as to how parental incarceration may be related to both parental psychopathy and youth CU traits, any bidirectional or transactional effects that may exist in this relation, and what specific ways it is related to youth delinquency, including within subgroups differentiated based on the presence of CU traits.

In the present study, age of onset of juvenile delinquent behaviors did not moderate the relation between parental incarceration history, CU traits, and delinquency. In addition, contrary to previous research (e.g., Fergusson & Horwood, 1995; Huesmann et al., 1984; Moffitt, 1990; Pulkkinen & Tremblay, 1992; Stattin & Magnusson, 1989; Tremblay, Pihl, Vitaro, & Dobkin, 1994), earlier age of onset for delinquency was not associated with higher levels of delinquency. This finding could be due to many factors, including potential difficulties recalling or reporting previous delinquent acts

retrospectively. Further, other factors, including CU traits and a history of parental incarceration, may be more important predictors of delinquency than age of onset and thus may serve as relevant intervention targets. Additionally, such variables likely influence age of onset. As previous research has shown that CU traits may be altered by certain parenting practices (Hawes et al., 2011), treatments that focus on increasing positive parenting practices may be effective. Further, it is likely that numerous familial factors, such as parenting practices, social modeling, and an unstable home environment, influence parental incarceration and juvenile delinquency and are therefore in need of more research to determine how to effectively target this area for treatment.

Contrary to expectations, overall parental/caregiver psychopathy was not associated with adolescent CU traits or delinquency in the present study. Numerous studies have shown the link between CU traits in parents and their offspring (Beaver et al., 2011; Loney et al., 2007; Repo-Tihonen et al., 2010; Viding et al., 2005; Viding et al., 2008). Although this correlation was not observed in the current study, certain components of parental psychopathy appear relevant to adolescents' engagement in delinquent behaviors. The present study, along with others (Benning, Patrick, Blonigen, Hicks, & Iacono, 2005; Benning, Patrick, Hicks, Blonigen, & Krueger, 2003; Skeem, Polaschek, Patrick, & Lilienfeld, 2011), suggests that psychopathy is not a completely homogeneous construct and instead has facets such as ruthlessness, willingness to manipulate others, and a lack of emotional response to anxiety provoking situations, that are particularly related to psychopathy and delinquent behaviors in one's adolescent offspring. Additionally, length of parental/caregiver incarceration was associated with parental/caregiver psychopathy, but it was not related to adolescent CU traits or

delinquency. These findings suggest that parental/caregiver psychopathy is tied to a parent's or caregiver's criminal actions or the relative severity with which they are punished in terms of a prison sentence, but the latter was not necessarily related to the display of psychopathic tendencies in offspring.

Regarding specific dimensions of parental/caregiver psychopathy, Machiavellian Egocentricity (i.e., ruthlessness, manipulativeness) was correlated with higher levels of juvenile delinquency, as well as longer length of parental/caregiver incarceration. This subscale has been related to lower levels of cooperation, more selfish types of behavior, higher gain, and more exploitation of counterparts in bargaining games (Curry, Chesters, & Viding, 2011; Mokros, Menner, Eisenbarth, Alpers, Lange, & Osterheider, 2008), as well as career criminality (DeLisi, Angton, Vaughn, Trulson, Caudill, & Beaver, 2014). Although the present study was unable to fully distinguish between genetic and environmental factors related to the development of delinquency, it is possible that parents possessing traits such as ruthlessness and a willingness to manipulate others may pass these traits on to their offspring genetically, thereby increasing potential risk for engagement in delinquent behaviors. However, it is also possible that parents may model and/or encourage these traits in their children, which may lead to a tendency for youth to display these traits, which could then lead to various delinquent behaviors.

On the other hand, parental/caregiver Social Potency (i.e., charm, interpersonal dominance) was associated with lower levels of adolescent CU traits. DeLisi and colleagues (2014) reported social potency to be an inconsistent predictor of delinquency in adolescents after finding that it was associated with career criminality in youth offenders overall, but not in groups of more severe youth offenders, as determined by

higher levels of antisocial behaviors, substance use, and involvement with the criminal justice system. Therefore, it is currently unclear in what ways parental charm and interpersonal dominance may contribute to adolescent CU traits or delinquency.

In the same study, Delisi et al. (2014) found that the Stress Immunity subscale was not related to career criminality in youth offenders, and Visser, Ashton, and Pozzebon (2012) found that the Stress Immunity subscale on the PPI-R-SF did not shown significant relations to other indicators of psychopathy in undergraduates. Thus, it is not particularly surprising that in the current study, parental/caregiver Stress Immunity (i.e., absence of emotional reactions to potentially anxiety-provoking situations) was associated with lower levels of self-reported adolescent delinquency. It is possible that parental modeling may also be involved in this relation, such that observing parents being emotionally reactive in certain situations could model such behavior as being appropriate and could manifest in various forms of rule-breaking behaviors in adolescents. The present study extended previous literature by examining what specific features of parental/caregiver psychopathy may be related to adolescents' engagement in delinquency.

This study illustrates the likely multifaceted and complex set of risk factors involved in juvenile delinquency. Not surprisingly, it appears that contextual (e.g., family norms, parental incarceration, social modeling), genetic (e.g., transmission of psychopathic tendencies), and intraindividual risk factors (e.g., CU traits)- each contribute to risk for delinquency. What remains somewhat unclear is how these variables are related specifically. For instance, does parental incarceration influence the development of delinquency due to a chaotic home environment, social modeling, or

genetic influences? Further, how does an adolescent's delinquency contribute to disruption in the home environment? It is also unclear how relative timing and length of incarceration may be related to later risk for delinquency.

The current study has some limitations that need to be discussed. First, participants in the study were enrolled in a military-style residential program for adolescents that have elected to leave high school prior to graduation. Although this sample makes it possible to examine personality and parental/caregiver historical factors within a population that may have engaged in an overall wider and more varied range of juvenile delinquency than the general adolescent population, this sample restricts the ability to generalize to other adolescents in different settings, including other residential settings with difference purposes or services or for adjudicated adolescents for whom the risk factors examined in this study may be particularly relevant. Additionally, the overwhelming majority of this sample was male, so it is how clear how these results would generalize to female adolescents. Another element that influences how these findings may generalize to other settings and populations is the location (i.e., southeastern United States) where the participants lived. Thus, additional studies are needed in order to determine how applicable these findings are to more diverse populations.

Further, this study relied entirely on self-report data. Although the data suggest that a history of parental incarceration and high levels of CU traits are each predictive of higher levels of juvenile delinquency, examining behavioral data such as disciplinary citations, arrest records, and collateral report of personality factors could strengthen confidence in interpreting relevant findings and perhaps provide more specific

information regarding risk factors for delinquency. Additionally, shared source variance could potentially have inflated relations between variables from the same informant (e.g., adolescent CU traits and delinquency). Another issue is that the incarceration measure utilized for this study was developed by the researcher and has not been used with other samples. Also, parents and caregivers completed this measure regarding history of parental and/or caregiver incarceration and length of incarceration retrospectively. Therefore, some responses could have been inaccurate based on difficulty remembering, a desire to minimize one's own legal history, or a lack of familiarity with the parent's or caregiver's history depending on the family circumstances. Further, length of parental incarceration was measured using a forced choice format, rather than allowing participants to indicate exact length of incarceration. Future research should use various ways of collecting date to extend the present study's findings.

This study showed the robustness of adolescent CU traits as a correlate of juvenile delinquency. As such traits have been clearly associated with violence and recidivism (Hare, 1998; Salekin, 2008), it is important to continue to examine how they relate to risk for delinquency and, more importantly, how to address them in efforts designed to reduce the likelihood and persistence of antisocial behavior. This study also illustrated the importance of parental incarceration, perhaps, especially for adolescents low in CU traits. However, this study was unable to distinguish fully between the environmental aspects of growing up with a parent or caregiver with legal problems (i.e., incarceration) and/or psychopathic traits and the potential genetic factors involved regarding these variables as they relate to adolescent CU traits and delinquency. Further research in this area could provide some much needed insight into the complexity of juvenile delinquency, how

delinquency might differ based on personality and/or familial factors, and how prevention or intervention efforts might be most suitable for particular adolescents with particular sets of risk factors.

APPENDIX A

INCARCERATION MEASURE

1. Please indicate which primary caregiver this child currently lives with.

__ Father

__Mother

__Step-father

__Step-mother

__Aunt (maternal/mother's side)

__Aunt (paternal/ father's side)

__Uncle (maternal/mother's side)

__Uncle (paternal/father's side)

__Cousin

__Grandmother

__Grandfather

__Other *(please list)*
_____

2. Please indicate which primary caregiver this child has lived with for the majority of his/her life.

__ Father

__Mother

__Step-father

__Step-mother

__Aunt (maternal/mother's side)

__Aunt (paternal/ father's side)

__Uncle (maternal/mother's side)

__Uncle (paternal/father's side)

__Cousin

__Grandmother

__Grandfather

__Other *(please list)*
_____

3. Has either parent of this child ever been incarcerated (i.e., in jail or prison either pending conviction for a crime or following conviction of a crime), **longer than overnight following an arrest**)?

____Yes, and he/she is currently incarcerated

____Yes, but he/she is not currently incarcerated

____ No

____ Not sure

4. How long were they incarcerated?

__ <6 months

__ 6 months to 1 year

__ 1 to 3 years

__ 3 to 5 years

__ 5 to 10 years

__ > 10 years

5. Which parent?

____Mother

____ Father

____Both

6. What was the charge associated with the incarceration (*place check in appropriate column*)?

Charge	Mother	Father
Felony DUI		
Shoplifting/vandalism		
Parole/probation violations		
Drug charges		
Forgery		
Weapons offense		
Burglary, Larceny, Breaking and Entering		
Robbery		
Assault /Domestic Violence		
Arson		
Rape		
Homicide, manslaughter		
Prostitution		
Contempt of court		
Other		
Don't Know		

7. What is the longest period of time of parent incarceration?

__ <6 months

__ 6 months to 1 year

__ 1 to 3 years

__ 3 to 5 years

__ 5 to 10 years

__ > 10 years

8. What is the total amount of time child's parents were incarcerated?

__ <6 months

__ 6 months to 1 year

__ 1 to 3 years

__ 3 to 5 years

__ 5 to 10 years

__ > 10 years

9. Has any other primary caregiver (step-parent, grandparent, close family member, etc.) for this child ever been incarcerated (held in jail or prison either pending conviction for a crime or following conviction of a crime), **longer than overnight following an arrest**?

____Yes, and he/she is currently incarcerated

____Yes, but he/she is not currently incarcerated

____ No

____ Not sure

10. How long were they incarcerated?

__ <6 months

__ 6 months to 1 year

__ 1 to 3 years

__ 3 to 5 years

__ 5 to 10 years

__ > 10 years

11. Indicate all primary caregivers that have ever been incarcerated.

__ Father

__ Mother

__ Step-father

__ Step-mother

__ Aunt (maternal/mother's side)

__ Aunt (paternal/ father's side)

__ Uncle (maternal/mother's side)

__ Uncle (paternal/father's side)

__ Cousin

__ Grandmother

__ Grandfather

__ Other *(please list)*

_____

12. What was the charge associated with the incarceration?

Charge	Caregiver:	Caregiver:
Shoplifting/vandalism		
Parole/probation violations		
Drug charges		
Forgery		
Weapons offense		
Burglary, Larceny, B & E		

Robbery		
Assault /Domestic Violence		
Arson		
Rape		
Homicide, manslaughter		
Prostitution		
Contempt of court		
Other		
Don’t Know		

APPENDIX B

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION

THE UNIVERSITY OF
SOUTHERN MISSISSIPPI.

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.6820 | Fax: 601.266.4377 | www.usm.edu/irb

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: **CH24111802**
PROJECT TITLE: **Personality Predictors of Behavioral Outcomes in a Group of At-Risk Adolescents**
PROJECT TYPE: **Change in Previously Approved Project**
RESEARCHER(S): **Christopher Barry, Ph.D.**
COLLEGE/DIVISION: **College of Education & Psychology**
DEPARTMENT: **Psychology**
FUNDING AGENCY/SPONSOR: **N/A**
IRB COMMITTEE ACTION: **Expedited Review Approval**
PERIOD OF APPROVAL: **07/23/2013 to 07/22/2014**

Lawrence A. Hosman, Ph.D.
Institutional Review Board

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