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Do Gender, Delinquent Peer Affiliations, and Parenting Practices Moderate the Relation Between Callou-Unemotional Traits and Delinquency

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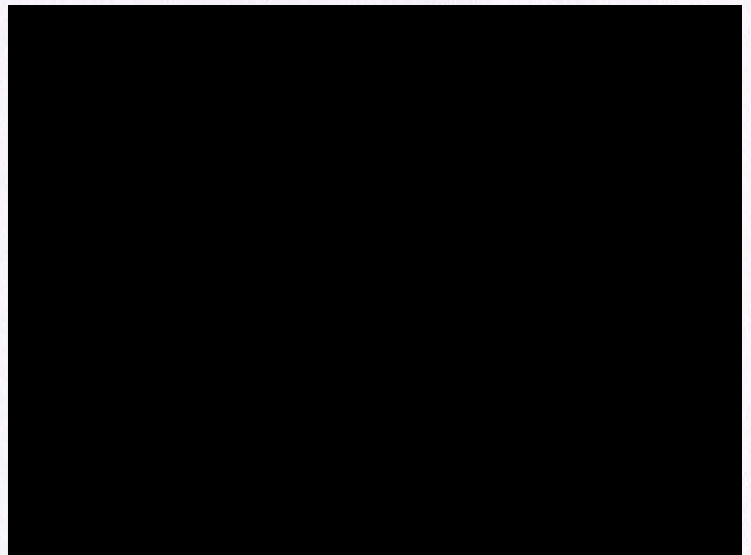
DO GENDER, DELINQUENT PEER AFFILIATIONS, AND PARENTING
PRACTICES MODERATE THE RELATION BETWEEN CALLOUS-
UNEMOTIONAL TRAITS AND DELINQUENCY?

by

Nicole Johaney Rivera-Hudson

A Thesis
Submitted to the Graduate School
of The University of Southern Mississippi
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

Approved:



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ABSTRACT

DO GENDER, DELINQUENT PEER AFFILIATIONS, AND PARENTING PRACTICES MODERATE THE RELATION BETWEEN CALLOUS-UNEMOTIONAL TRAITS AND DELINQUENCY?

by Nicole Johaney Rivera-Hudson

August 2013

The present study examined how contextual factors differentially influence the relation between the components of callous-unemotional (CU) traits and delinquency for male and female adolescents. More specifically, it considered delinquent peer affiliations and ineffective parenting practices as moderators in this relation with the belief that those moderators would exert a different influence for males and females. The study was conducted with a sample of 238 adolescents (166 males, 72 females) ages 16 to 19 attending a voluntary military style residential program. Analyses demonstrated a general lack of support for the central hypotheses of the present study. There was a significant interaction between negative parenting and callousness for predicting delinquency, such that participants with both high levels of callousness and negative parenting reported the highest levels of delinquency. In addition, positive parenting differentially moderated the relation between unemotionality and delinquency for males and females. Although the main hypotheses were not supported, the current study demonstrated that gender and parenting practices may impact the relation between particular aspects of CU traits and delinquent behavior.

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CHAPTER I

INTRODUCTION

Psychopathy is characterized by both emotional (i.e., grandiosity, absence of empathy and guilt) and behavioral (i.e., aggression, impulsivity, irresponsibility) tendencies (Frick, O'Brien, Wootton, & McBurnett, 1994; Loney, Taylor, Butler, & Iacono, 2007). The basis of what is now known as psychopathy was initially borne from Cleckley's theories. In 1941, Cleckley released a groundbreaking book, *The Mask of Sanity*, in which he described his research on psychopathy. He found sixteen characteristics that described a "psychopath," including lack of remorse, shame, and truthfulness, as well as irresponsibility and impulsivity (Cleckley, 1988). Moreover, he found these individuals to possess both superficial charm and superficial interpersonal connections. In short, the characteristics of psychopathy are thought to designate a group of individuals who have a tendency to engage in acts that are outside of the bounds of socially acceptable behaviors and have the potential to harm others (Blackburn, 2009).

Individuals with these tendencies are considered risk-takers who become involved in a variety of delinquent acts (Lynam & Gudonis, 2005). For instance, incarcerated individuals with psychopathic tendencies have an increased risk of alcohol and drug abuse and dependence (Smith & Newman, 1990). Additionally, psychopathy has been linked to multiple forms of antisocial behavior and to recidivism (e.g. Salekin, Rogers, & Sewell, 1996). Individuals with psychopathic traits tend to demonstrate particularly high levels of instrumental, goal-driven aggression even compared to individuals with other syndromes related to behavioral dysfunction and disinhibition such as schizophrenia and bipolar disorder (Blair, Peschardt, Budhani, Mitchell, & Pine, 2006; Glenn & Raine,

2009). Furthermore, research has shown that offenders with psychopathic traits commit significantly more violent and nonviolent offenses as well as a greater variety of offenses than adult offenders without these traits (Kosson, Smith, & Newman, 1990).

The breadth of knowledge on psychopathy and its connection to antisocial behavior is extensive; however, much of the published research has been conducted primarily on adults, particularly males. This focus can be seen from the outset of psychopathy research, as Cleckley's original research in 1941 was based on his experiences with an inpatient adult male population (Cleckley, 1988). Research on psychopathy has grown to include females, but this research still has mainly focused on adult offenders. Psychopathy appears to be a valid construct for female offenders, but the rate and severity of psychopathic tendencies among female offenders is thought to be lower than for male offenders (Salekin, Rogers, & Sewell, 1997). Similarly, adult males from a community sample have demonstrated significantly higher levels of psychopathic features than females (Forth, Brown, Hart, & Hare, 1996). Additionally, Salekin, Rogers, Ustad, and Sewell (1998) found gender differences in the rates of recidivism, as female offenders with psychopathic traits were less likely to recidivate during a 14-month follow-up period than male offenders.

The present study examined possible gender differences in the relation between psychopathy-linked traits, contextual factors, and delinquency for adolescents. Although the majority of psychopathy research has an adult focus, there is evidence that the concept of psychopathy is applicable to children and adolescents (e.g., Lynam, Derefinko, Caspi, Loeber, & Stouthamer-Loeber, 2007; Vasey, Kotov, Frick, & Loney, 2005). Youth with psychopathic tendencies, much like adults, appear to engage in the

most severe, frequent, aggressive, and stable behavioral problems (Frick, Kimonis, Dandreaux, & Farrell, 2003). Additionally, adolescent psychopathy is predictive of the presence of psychopathic traits in adulthood (Lynam, Caspi, Moffitt, Loeber, & Stouthamer-Loeber, 2007). Research has also demonstrated that childhood psychopathy provides predictive utility above and beyond other predictors for offending, including past offenses (Lynam, 1997). However, relatively little is known about the role of contextual factors in the connection between psychopathic tendencies and adolescent delinquency and the consistency of such a role across males and females. The present study attempted to address this issue.

CHAPTER II

REVIEW OF RELATED LITERATURE

Much like with adult psychopathy, research with adolescents first focused on male offenders. Also, mirroring the adult literature, investigations of adolescent psychopathy have moved toward determining possible gender differences in the presentation and levels of psychopathy (Kimonis, Frick, Fazekas, & Loney, 2006; Krischer & Sevecke, 2008; Krischer, Sevecke, Lehmkuhl, & Pukrop, 2007; Sevecke, Lehmkuhl, & Krischer, 2009). Although adolescent and adult females can demonstrate elevated levels of psychopathic tendencies, they tend to have lower psychopathy scores than their male counterparts (Decuyper, De Bolle, De Fruyt, & De Clercq, 2011; Salekin et al., 1998). Moreover, when considering specific psychopathic traits, such as lack of empathy, research has demonstrated that for female youth, affective empathy (i.e., the expression of emotional connection to others) does not appear to be associated with overall level of psychopathic characteristics, whereas for males, it is (Dadds et al., 2009). Additionally, research has demonstrated a significant relation between psychopathic tendencies, specifically callous-unemotional (CU) traits, and lack of concern for victim suffering among males (Pardini & Byrd, 2012). CU traits have been defined as a lack of guilt and absence of empathy, as well as shallow and flat affect. These characteristics have been considered hallmarks of Cleckley's conceptualization of adult psychopathy (Barry et al., 2000).

It has been proposed that there may be gender-specific pathways to the elevation of psychopathic traits (Cale & Lilienfeld, 2002; Sevecke, Kosson, & Krischer, 2009). Specifically, adolescent males may be more likely to demonstrate primary psychopathy

which is characterized by low anxiety, low affective empathy, and high engagement in antisocial behavior (Sevecke, Lehmkuhl et al., 2009). Sevecke and colleagues (2009) found that female adolescents, on the other hand, are more likely to exhibit secondary psychopathy, wherein they manifest more internalizing difficulties (e.g., anxiety and mood disorders). Although psychopathy may present somewhat differently for males and females, research has shown that psychopathy is related to antisocial behavior regardless of gender. For instance, as has been demonstrated with male offenders, psychopathic tendencies in females are associated with an earlier onset of delinquent and criminal activity and a higher number of criminal acts (Bauer, Whitman, & Kosson, 2011). The present study examined how the relation between specific psychopathic traits and juvenile delinquency is influenced by multiple contextual factors for both male and female adolescents and examined whether these patterns differ across specific aspects of psychopathic traits.

CU Traits

One dimension of psychopathy, referred to as the callous-unemotional (CU) dimension, has gained considerable attention in the literature (Barry et al., 2000; Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick, Kimonis, et al., 2003) and is the focus of the present study. The presence of CU traits (e.g., shallow affect, lack of empathy, and absence of guilt) is particularly evident in youth with severe conduct problems (Christian, Frick, Hill, & Tyler, 1997; Frick et al., 1994) and is also associated with conduct problems later in adolescence (Frick & Dantagnan, 2005). CU traits have been shown to add predictive value for antisocial behavior in both forensic and community samples of youth (Dadds, Fraser, Frost, & Hawes, 2005; Edens, Buffington-Vollum, Colwell,

Johnson, & Johnson, 2002; Frick, Cornell, Barry et al., 2003). In addition, youth with high levels of both conduct problems and CU traits tend to engage in particularly high levels of aggression (Frick, Cornell, Barry et al., 2003). The stability of CU traits has been supported both during adolescence in aggressive youth (Barry, Barry, Deming, & Lochman, 2008) and from adolescence to adulthood in an at-risk community sample (Lynam, Caspi et al., 2007; Lynam, Loeber, & Stouthamer-Loeber, 2008). Because youth with these traits tend to engage in antisocial behavior that continues through their adulthood, it stands to reason that further research is needed on possible risk and protective factors that may influence the link between CU traits and associated behavioral problems.

Relatively recent discussions of CU traits have revolved around three facets (i.e., callousness, uncaring, and unemotionality; Essau, Sasagawa, & Frick, 2006a; Kimonis et al., 2008; Masi et al., 2011; Pardini & Byrd, 2012). Callousness is described as indifference to the harm of others. Furthermore, callousness can be thought of as a lack of shame, empathy, or remorse for causing misfortune for others in pursuit of one's own desires (Pardini, Obradović, & Loeber, 2006; Somech & Elizur, 2009). Another dimension of CU traits, uncaring, can be defined as an absence of interest, worry, and/or anxiety about one's performance (e.g., in school) or one's adherence to rules. Additionally, uncaring includes a lack of concern for others' feelings (Kimonis et al., 2008). The final dimension of CU traits, unemotionality, is defined as an absence of emotional responsiveness (Decuyper et al., 2011; Frick, Cornell, Barry et al., 2003).

Essau and colleagues (2006a) confirmed a three-factor structure for a measure of CU traits, the Inventory of Callous Unemotional Traits (ICU), that captures the

dimensions of callousness, uncaring, and unemotionality. Kimonis et al. (2008) were the first to study the psychometric properties of the ICU in an adolescent offender sample using the English-language version of the instrument. Similar to Essau et al. (2006a), they confirmed three independent dimensions (i.e., callousness, uncaring, and unemotional). The callousness dimension was significantly associated with measures of aggression, and the uncaring dimension was strongly related to delinquency and negatively associated with empathy and positive affect. The unemotional dimension was associated with lack of empathy and lack of emotional responsiveness for both detained males and females; however, it was only related to reactive aggression for detained females (Kimonis et al., 2008). Additionally, callousness has been associated with significant variance in adolescent antisocial behavior (Meier, Slutske, Arndt, & Cadoret, 2008; Pardini et al., 2006).

Recent literature has shown that the individual CU dimensions may have differential relations with antisocial behavior; more specifically, callousness and uncaring have been more consistently related to delinquent behavior than the unemotional dimension (Ansel, Barry, & Wallace, 2009; Essau et al., 2006a; Kimonis et al., 2008). In other words, based on a multidimensional conceptualization of CU traits, the dimensions of callousness and uncaring appear most relevant for adolescent delinquency. The present study examined how the individual dimensions of CU traits interacted with other factors (i.e., gender, ineffective parenting, delinquent peer affiliations) in their association with delinquency. Furthering knowledge on how these relations may be influenced by contextual factors can better aid in the development of targeted interventions for the

reduction of disruptive behaviors, as efforts can be aimed toward lessening the impact of specific dimensions of psychopathic traits.

Parenting

Research has demonstrated a relation between delinquency and poor parenting (i.e., low parental involvement, lack of supervision) in incarcerated samples (Robertson, Baird-Thomas, & Stein, 2008). Additionally, high parental involvement has been related to a reduction in delinquency in a community sample of youth (Gault-Sherman, 2012). The influence of parenting practices such as parental monitoring on adolescent delinquency also appears to be affected, to some extent, by adolescent gender. For instance, in one study, poor parental monitoring was related to covert behaviors, such as shoplifting and dishonesty, as well as property damage for adolescent females unlike for males for whom exposure to delinquent peers had an influence (Gorman-Smith & Loeber, 2005). Additionally, among a sample of African American adolescent females maternal monitoring and involvement were associated with reduced delinquent behavior (Bowman, Prelow, & Weaver, 2007).

Research on the influence of parenting practices has been extended to individuals with psychopathic traits. Much of this research demonstrates a general lack of association between poor parenting (i.e., low parental involvement, lack of supervision, harsh and inconsistent discipline) and delinquency among youth high on CU traits (e.g., Edens, Skopp, & Cahill, 2008). It is believed that youth with impairment in empathy—an associated feature of CU traits—may be more resistant to positive parenting practices than youth without such impairments (Cornell & Frick, 2007). In addition, Wootton, Frick, Shelton, and Silverthorn (1997) noted that for children with high levels of CU

traits, ineffective parenting practices (i.e., low positive parenting and high negative parenting) were not associated with conduct problems, unlike for children without CU traits. However, the sample in that study may have had some influence on the results, as the sample was predominantly male. The relative lack of inclusion of females in the previous studies highlights the need for further research on how contextual variables might differentially influence the connection between CU traits and problem behaviors for both males and females.

Examinations of parenting practices have suggested that parenting practices vary by the age and gender of the youth (Fagan, Van Horn, Antaramian, & Hawkins, 2011). Generally, research has demonstrated that parents are more controlling of their daughters (Hill & Atkinson, 1988); thus, it is suggested that for males, it is normative for them to have less supervision (Heinze, Toro, & Urberg, 2004). Female adolescents are apt to receive more supervision from their parents than male adolescents (Gottfredson & Hirschi 1990; Laird, Pettit, Dodge & Bates, 2003), and females are thought to have an increased emotional connection with their parents in comparison to males (Heimer & De Coster, 1999). Therefore, when this developmentally typical protective factor is removed, females have more opportunity to get involved in delinquent behaviors and may also engage in behaviors (e.g., delinquency) that are relatively atypical for them. This pattern may be particularly evident for females with intrapersonal characteristics (i.e., CU traits) that already place them at-risk for delinquency. The current study examined how negative parenting practices, during a time where females may be typically provided with higher levels of supervision than males, might influence the relation between psychopathic traits and delinquency.

Consistent with previous literature, Edens et al. (2008) found that for males who were high in affective deficits (i.e., shallow affect and lack of empathy or guilt), poor parenting was not predictive of antisocial behavior. As stated previously, much of the psychopathy research has focused on adolescent males; therefore, the present study proposed that the lack of parental influence on youth with psychopathic characteristics may be particularly applicable to males. Furthermore, as females with psychopathic traits appear to have fewer affective deficits than males (Sevecke, Lehmkuhl et al., 2009), the findings indicating reduced parental impact on delinquency for adolescents with psychopathic traits (Edens et al., 2008) may be more appropriate for males than females. On the other hand, the present study proposed that negative parenting may intensify the relation between CU traits and delinquent behavior for females.

Delinquent Peer Affiliations

Peer affiliations provide another context which may influence the connection between CU traits and delinquency. Research has consistently demonstrated a link between delinquency and delinquent peer affiliations in community (Fergusson, Swain-Campbell, & Horwood, 2002; Keenan, Loeber, Zhang, & Stouthamer-Loeber, 1995; Nijhof, Scholte, Overbeek, & Engels, 2010) and clinical samples of adolescents (Friedman & Terras, 1999). Additionally, research on the connection between delinquent peer affiliations and juvenile delinquency has been extended to youth with CU traits. For instance, in one study, youth with CU traits reported relatively high levels of delinquent peer affiliations relative to youth with lower levels of CU traits (Kimonis, Frick, & Barry, 2004), but it was unclear to what extent peer affiliations influenced the connection between CU traits and delinquency. That study had a relatively low number of females

who had high levels of CU traits. Therefore, similar to much of the CU literature, it is difficult to determine if there could have been a differing influence of delinquent peer affiliations by gender.

Gender differences in the relative influence of delinquent peer affiliations have been supported in previous research. Piquero, Gover, MacDonald, and Piquero (2005) noted that delinquent peer affiliations were not associated with higher delinquency for adolescent females unlike their male counterparts, whereas Miller, Loeber, and Hipwell (2009) found that for young at-risk girls, ages 7 to 8, parenting practices and delinquent peer affiliations were important to the development of disruptive behaviors. However, affiliations with delinquent peers were not predictive of later antisocial behavior for those girls (Miller et al., 2009).

Peers can be influential in delinquent behavior for females, but this influence seems to be greater for males (Johnson, 1979; Piquero et al., 2005). A possibly weaker influence of delinquent peer affiliations for females with CU traits may be connected to the earlier proposed theory of differing manifestations of psychopathy for males and females (i.e., primary vs. secondary). As noted above, research has demonstrated that adolescent males may better fit the primary psychopathy subtype in which antisocial behavior may be linked to fearlessness and a lack of conscience (Sevecke, Lehmkuhl et al., 2009). In addition, males may have a genetic predisposition toward delinquent peer affiliations relative to females (Yun, Cheong, & Walsh, 2011). This propensity in addition to the greater likelihood of psychopathic tendencies for males (Sevecke, Lehmkuhl et al., 2009) may point toward a model whereby delinquent peers heighten the risk for delinquency among males who have personality characteristics (i.e., CU traits)

that also seem to promote delinquent activity. On the other hand, females are believed to be more likely to display secondary psychopathy, which involves more difficulties with mood and anxiety (Sevecke, Lehmkuhl et al., 2009) and has not been linked to delinquent peer affiliations.

CHAPTER III

THE PRESENT STUDY

This study aimed to extend the literature on adolescent psychopathy by examining the role of gender in the relation between CU traits, contextual factors (i.e., delinquent peer affiliations and ineffective parenting), and delinquency. More specifically, the study investigated whether the established association between CU traits and delinquency (Frick, Cornell, Bodin et al., 2003) varies when gender and the contextual factors are examined. Furthermore, the study considered the individual components of CU traits (i.e., callousness, uncaring, and unemotionality) in these relations.

The present study also attempted to help clarify the mixed results from previous research on the influence of contextual factors on the relation between CU traits and delinquency. As noted above, much of the adolescent CU literature has had exclusively, or predominantly, male samples; therefore, the present study allowed for examination of possible gender differences. Furthermore, considering the relations with an adolescent sample aided in further understanding of the contextual factors that may be more beneficial to target for males and females during intervention prior to adulthood.

CHAPTER IV

HYPOTHESES

It was hypothesized that CU traits, specifically callousness and uncaring, would be positively related to delinquent peer affiliations, self-reported delinquency, and disciplinary citations (Hypothesis 1). It was expected that male adolescents would have a higher level of CU traits, delinquency, and delinquent peer affiliations than female adolescents (Hypothesis 2). It was also expected that female adolescents would have a higher level of parental supervision than adolescent males (Hypothesis 3). Additionally, it was anticipated that for males with relatively high levels of CU traits, specifically callousness and uncaring, the presence of delinquent peer affiliations would exacerbate the risk of delinquent behavior as indicated by self-reported delinquency and disciplinary citations (Hypothesis 4). It was anticipated that for females with relatively high levels of CU traits, specifically uncaring and callousness, ineffective parenting practices (i.e., absence of positive parenting with presence of negative parenting) would exacerbate the risk of delinquent behavior, as indicated by self-reported delinquency and disciplinary citations (Hypothesis 5).

CHAPTER V

METHODOLOGY

Participants

Two hundred thirty-eight (238) adolescents (166 males, 72 females) participated in the study. A power analysis, using G power, was conducted ahead of time to determine the number of participants needed to detect a moderate effect, (i.e., $R^2 = .15$) with .80 power, at the $p < .05$ level of alpha for the multiple regression approach used for this study (see below). The power analysis determined that 77 participants were needed for each gender for a total of 154 participants needed overall. The participants, ranging in age from 16 to 19 ($m = 16.90$, $sd = 0.81$), were recruited from the Mississippi Youth Challenge Academy at Camp Shelby, Mississippi, a nearby military style residential program for youth who have dropped out of school. The majority of participants were Caucasian (i.e., approximately 61% of the sample). For analyses, the sample was dichotomized as Caucasian and Non-Caucasian. The sample was dichotomized in such a manner because other than African Americans ($n = 77$), there was very little representation of any other Non-Caucasian ethnic groups ($n = 14$). An at-risk sample was chosen for the current study to examine factors influencing the connection between adolescent psychopathy and problem behaviors in a population other than those coming from a forensic or clinical setting. Therefore, using an at-risk sample allowed for the investigation of interpersonal and contextual factors related to delinquency in adolescents who are outside the juvenile justice system but who may have a number of social and behavioral risk factors, particularly compared to those from a community sample.

Measures

Inventory of Callous-Unemotional Traits (ICU; Frick, 2004)

The ICU is a self-report measure that consists of 24 items describing CU traits, such as flat affect and lack of empathy or guilt (Frick, 2004). It was developed from the Callous-Unemotional (CU) scale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), an instrument that has been used extensively in studying psychopathy-linked characteristics in children and adolescents. Items are rated on a 4-point Likert scale ranging from 0 (*not at all true*) to 3 (*definitely true*). There are three subscales on the ICU: 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").

The construct validity of the ICU was supported by two large-scale studies. Essau and colleagues (2006a) found a three-factor structure consisting of Callousness, Uncaring, and Unemotional scales for 13 to 18 year-old German males and females. In a second study, Kimonis et al. (2008) found significant correlations between the ICU and indicators of delinquency in an adolescent offender sample. Furthermore, they found that the ICU scales were moderately correlated with the CU scale of the APSD (Uncaring: $r = .32$, Callousness: $r = .36$, $p < .001$), with the exception of the Unemotional scale which had a non-significant correlation of $r = .14$. Kimonis and colleagues (2008) found internal consistencies of .81, .80, and .53 for the Uncaring, Callousness, and Unemotional scales, respectively. The internal consistency coefficients in the present study were .79 for the Uncaring, .61 for the Callousness, and .54 for the Unemotional scales.

Self-Report of Delinquency (SRD; Elliott, Huizinga, & Ageton, 1985)

The SRD is a self-report measure that evaluates juvenile illegal activity. It consists of 34 items for 34 illegal acts. This measure was developed to include offenses listed in the Uniform Crime Report with a juvenile base rate greater than 1% and assesses violent, property, drug, and status offenses. Responses are made in a yes/no format, whereby the participant reports whether he/she has ever engaged in the delinquent activities. For instance, the participants are asked questions like, "Have you ever purposely damaged or destroyed property belonging to your parents or other family members?" The participants' scores represent the sum of the different types of offenses in which they have reportedly engaged. The SRD demonstrated good internal consistency with an alpha of .92 in a study with a similar sample of adolescents (Barry, Pickard, & Ansel, 2009). The internal consistency was .91 for the present study.

Peer Delinquency Scale (PDS; Keenan et al., 1995)

The PDS is a self-report measure originally developed for use in the Pittsburgh Youth study to evaluate deviant peer group affiliations (Keenan et al., 1995). The PDS asks how many of the respondent's peers have engaged in a behavior (e.g., "stolen something worth less than \$5") during the last 12 months. The measure has a 5-point Likert-type scale ranging from 0 (*none*) to 4 (*all*). The PDS items correspond to items on the SRD and a substance abuse scale from the National Youth Survey (Loeber, Farrington, Stouthamer-Loeber, & Van Kammen, 1998). The PDS had internal consistency coefficients ranging from .84 to .89 across four assessments in a community sample of youth (Kimonis et al., 2004). The internal consistency was .94 for the present study.

Alabama Parenting Questionnaire (APQ; Shelton, Frick, & Wootton, 1996)

The APQ evaluates various parenting practices that have been associated with the development of conduct problems in children (Shelton et al., 1996). The study used the youth report version of the APQ, whereby youth are asked how often their parents typically engage in specific parenting practices. The APQ is composed of 42 items, using a 5-point Likert scale from 1 (*never*) to 5 (*almost always*) for each item. The measure examines five parenting dimensions, including parental involvement (e.g., "Your mom helps you with your homework"), use of positive reinforcement (e.g., "Your parents praise you for behaving well"), poor parental monitoring and supervision (e.g., "You go out after dark without an adult with you"), inconsistent discipline (e.g., "The punishment your parents give depends on their mood"), and corporal punishment (e.g., "Your parents slap you when you have done something wrong"). For the present study, the corporal punishment items were omitted; therefore, the APQ consisted of 39 items in this study. The reliability and validity of the APQ were supported in several studies (Dadds, Maujean, & Fraser, 2003; Essau, Sasagawa, & Frick, 2006b; Shelton et al., 1996). For instance, Dadds et al. (2003) assessed the psychometric properties of the APQ with a large sample of non-referred Australian children (ages 4 to 9). They found modest to good internal consistency with alphas ranging from .55 (corporal punishment) to .77 (positive reinforcement). Dadds and colleagues (2003) also found significant correlations between the conduct problems subscale of the Strengths and Difficulties Questionnaire and the subscales of the APQ in the expected directions.

Similar to Wootton et al. (1997) who examined parenting in relation to CU traits, an ineffective parenting composite was considered for the present study. This composite

was to be formed by summing the Poor Monitoring and Supervision and Inconsistent Discipline subscales of the APQ along with the reverse-scored Parental Involvement and Positive Reinforcement subscales. However, the inter-correlations between poor parental monitoring and supervision, inconsistent discipline, and reverse-scored parental involvement and use of positive reinforcement were not strong enough to support the use of an ineffective parenting composite. Specifically, the correlations ranged from $r = .02$ to $r = .68$ across the scales. Therefore, separate positive (i.e., positive reinforcement and involvement) and negative (i.e., poor monitoring and supervision and inconsistent discipline) parenting composites were formed for the analyses, consistent with other research using the APQ (Frick, Christian, & Wootton, 1999; Frick, Kimonis et al., 2003, Shelton et al., 1996). The correlations between the scales comprising the positive parenting composite, $r = .69, p < .001$, and between those comprising the negative parenting composite, $r = .58, p < .001$, were moderate in strength. The internal consistency coefficients were .91 and .85 for positive parenting practices and negative parenting practices, respectively. Additionally, the internal consistency for the APQ scale Poor Monitoring and Supervision, which was of interest regarding its relation to gender, was .82.

Disciplinary Citations

Records of participants' disciplinary infractions while attending the Mississippi Youth Challenge Academy were requested from the director of the program. These infractions were for behaviors that include insubordination to staff, arguments/fights with peers, disruptions in class, and not caring for personal belongings. This information was obtained after the participants left the program. The disciplinary citations were summed

resulting in a total citation score for each participant and were used as an additional measure of problem behaviors beyond participants' self-reports.

Procedures

The director of the Youth Challenge Program serves as guardian *ad litem* for the adolescents during their enrollment and provided consent for the participants to be approached about participating in the study. Prior to the administration of the measures, the adolescents were informed about the purpose of the study and given the opportunity to accept or decline to participate through the signing of an assent form. Participation was voluntary and involved no benefit or disadvantage within the program. Furthermore, participants were told that they could cease participating at any time if they so chose.

Following the consent procedure, trained graduate and undergraduate students administered the self-report measures to participants. During multiple sessions, questionnaires were administered in a classroom setting in groups of approximately 15-18 participants. The researchers remained in the classrooms while the participants completed the study, offering assistance with the materials.

CHAPTER VI
ANALYSIS OF DATA

Descriptive statistics for the main study variables are shown in Table 1. As noted in Table 1, callousness was positively skewed (*skewness* = 1.11) as were reported disciplinary citations (*skewness* = 1.53). These results indicate that many participants self-reported relatively low levels of callousness and received very few disciplinary citations while in the residential program. Indeed, the modal number of citations was zero. However, not all the participants completed the 22-week voluntary program at Camp Shelby. Therefore, an adjusted disciplinary citation variable was created to account for the amount of time the participants were enrolled at Camp Shelby by dividing each participant's number of citations by the number of weeks he/she attended the program. Furthermore, the number of citations or weeks in the program was missing for 15 participants. Therefore, analyses for disciplinary citations per week enrolled at the Youth Challenge Program as the dependent variable were conducted for 223 individuals.

Table 1

Descriptive Statistics

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>
Delinquency	238	0	31	12.54	7.25	0.40	-0.38
Citations ^a	223	0	2	0.28	0.34	2.16	5.42
Callousness	238	1	28	8.66	4.05	1.11	2.67
Uncaring	238	0	24	10.28	4.85	0.05	-0.39
Unemotionality	238	0	15	8.66	2.82	0.13	0.18
DPA	238	0	60	19.52	14.11	0.77	0.04
PP	238	0	32	18.42	6.60	-0.37	0.00
NP	238	0	30	15.58	5.65	-0.07	-0.31
Gender ^b	238	0	1	0.30	0.46	0.86	-1.26
Ethnicity ^c	233	0	1	0.39	0.49	0.45	-1.81

Table 1 (continued).

	<i>N</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>
Age	237	16	19	16.90	0.81	0.52	-0.44

Note: DPA = Delinquent Peer Affiliations, PP= Positive Parenting, and NP= Negative Parenting.

^aCitation analyses shown for number of citations per week.

^bGender was coded as 0 for males and 1 for females.

^cEthnicity was coded as 0 for Caucasian and 1 for Non-Caucasian.

Correlational Analyses

Correlational analyses were conducted to examine the relations between the predictor variables (i.e., callousness, uncaring, unemotionality, delinquent peer affiliations, negative parenting, positive parenting, and gender), the outcome variables (i.e., delinquency and disciplinary citations), and ethnicity. The results of these analyses are displayed in Table 2. Hypothesis 1 predicted that CU traits, specifically callousness and uncaring, would be positively related to delinquent peer affiliations, self-reported delinquency, and disciplinary citations. Callousness was significantly positively related to self-reported delinquency, $r = .33, p < .001$, disciplinary citations, $r = .15, p = .02$, and delinquent peer affiliations, $r = .38, p < .001$. Uncaring was significantly positively related to delinquent peer affiliations, $r = .35, p < .001$, self-reported delinquency, $r = .36, p < .001$, and disciplinary citations, $r = .24, p < .001$. Additionally, unemotionality was significantly positively to delinquent peer affiliations, $r = .18, p = .004$. Therefore, Hypothesis 1 was supported, as callousness and uncaring traits were related to self-reported delinquency, disciplinary citations and delinquent peer affiliations. Delinquency was significantly positively related to disciplinary citations, $r = .17, p = .01$, delinquent peer affiliations, $r = .57, p < .001$, and negative parenting, $r = .58, p < .001$. Additionally,

delinquency was significantly negatively related to positive parenting, $r = -.25, p < .001$. Delinquency was also associated with gender, $r = -.21, p = .001$, such that males tended to report higher delinquency than females. The number of disciplinary citations was significantly associated with ethnicity, $r = .32, p < .001$, indicating that Non-Caucasians tended to have a higher number of disciplinary citations than Caucasians, and gender, $r = .14, p = .04$, indicating that females tended to have a greater amount of disciplinary citations than males. In light of the developmental implications of parental monitoring/supervision, follow-up analyses demonstrated that the APQ Poor Monitoring and Supervision scale was positively significantly correlated to callousness, $r = .35, p < .001$, uncaring, $r = .27, p < .001$, and unemotional traits, $r = .17, p = .009$.

Table 2

Correlations among Study Variables

	1	2	3	4	5	6	7	8	9	10	11
1. Delinquency	-	.19**	.33***	.36***	.12	.57***	-.25***	.58***	-.21**	-.01	-.08
2. Citations		-	.15*	.24***	.08	.16*	-.05	.06	.06	.26***	-.09
3. Callousness			-	.23***	.19**	.38***	-.18**	.34***	.03	.07	-.10
4. Uncaring				-	.12	.35***	-.27***	.25***	-.08	.05	-.16*
5. Unemotionality					-	.18**	-.25***	.15*	-.06	-.00	.02
6. DPA						-	-.29***	.36***	-.00	.02	-.09
7. PP							-	-.11	-.01	.09	.07
8. NP								-	-.07	.02	.03
9. Gender ^a									-	.00	-.15*
10. Ethnicity ^b										-	.12
11. Age											-

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aGender was coded as 0 for males and 1 for females.

^bEthnicity was coded as 0 for Caucasian and 1 for Non-Caucasian

Independent Samples *t*-tests of Gender Differences

Hypothesis 2 predicted that male adolescents would have a higher level of CU traits, delinquency, delinquent peer affiliations than female adolescents. This hypothesis was examined through independent samples *t*-tests. The results demonstrated that there were no significant differences in levels of callousness, $t(236) = -0.42, p = .67$, uncaring, $t(236) = 1.24, p = .22$, or unemotional traits, $t(236) = 0.94, p = .35$, between male and female participants. As noted above, males ($m = 13.54, sd = 7.35, n = 166$) had significantly higher levels of self-reported delinquency than their female counterparts ($m = 10.23, sd = 6.49, n = 72$), $t(236) = 3.31, p = .001$. However, male and female participants did not significantly differ in disciplinary citations, $t(221) = -.88, p = .38$. Additionally, the results demonstrated that males and females did not differ in reported delinquent peer affiliations, $t(236) = -.004, p = .98$. Therefore, Hypothesis 2 was partially supported. Hypothesis 3 predicted that female adolescents would have a higher level of parental supervision (i.e., lower levels of poor monitoring and supervision) than adolescent males. Differences in parental supervision were examined through an independent samples *t*-test, using the APQ Poor Monitoring and Supervision subscale. However, Hypothesis 3 was not supported, $t(236) = 1.65, p = .10$.

Table 3

Independent Samples t-Test

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>d</i>
Callousness	166 ^a	-.07	4.06	-0.42	236
	72 ^b	.17	4.04		
Uncaring	166 ^a	.26	4.75	1.24	236
	72 ^b	-.59	5.05		
Unemotionality	166 ^a	.11	2.76	0.94	236
	72 ^b	-.26	2.95		
Self-Reported Delinquency	166 ^a	12.54	7.35	3.31***	236
	72 ^b	10.23	6.49		

Table 3 (continued).

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>t</i>	<i>d</i>
Disciplinary Citations	160 ^a	0.27	0.36	-0.88	221
	63 ^b	0.31	0.30		
APQ Monitoring and Supervision Scale	166 ^a	21.35	7.71	1.65	236
	72 ^b	19.49	8.58		
Delinquent Peer Affiliations	166 ^a	19.52	13.79	-0.004	236
	72 ^b	19.53	14.92		

^aMales, ^bFemales

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations

A multiple regression analysis was conducted to examine the moderating effects of gender and delinquent peer affiliations on the association between dimensions of CU traits and delinquent behaviors (Hypothesis 4). Specifically, the first step of this model included gender, CU traits (i.e., callousness, uncaring, and unemotional), and delinquent peer affiliations as predictors. The second step added the two-way interaction terms for gender and each of the components of CU traits, gender and delinquent peer affiliations, and the individual facets of CU traits and delinquent peer affiliations. Lastly, the third step included the three-way interaction terms (i.e., each of the CU traits x gender x delinquent peer affiliations). Two separate multiple regression models were conducted for each of the delinquent behavior dependent variables (i.e., self-reported delinquency and disciplinary citations).

Table 4 displays the results examining the relation between CU traits and self-reported delinquent behavior. In the first step, significant main effects were found for gender, $\beta = -.20, p < .001$, delinquent peer affiliations, $\beta = .47, p < .001$, callousness, $\beta = .12, p = .03$, and uncaring, $\beta = .16, p = .01$, in the expected directions. Additionally, a

significant two-way interaction was found between gender and unemotionality, $\beta = .14, p = .04$, in the second step of the model. To further examine the interaction, a reduced regression model was conducted with gender and unemotionality as well as their interaction as predictors. Examination of the reduced model indicated that the interaction was marginally significant, $\beta = .15, p = .06$. Thus, the inclusion of delinquent peer affiliations, callousness, uncaring, and their corresponding interaction terms in the original model appeared to suppress irrelevant variance in the prediction of delinquency such that this suppressor effect was no longer evident in the reduced model.

Nevertheless, *post hoc* probing of the interaction was conducted using the method described by Holmbeck (2002), where significant interactions are examined by plotting simple regression lines for high and low values of the individual moderator variable. To probe the significant interaction, two new conditional moderator variables were created (i.e., male and female). Additionally, two new interaction terms (male x unemotional and female x unemotional) were computed, and then two separate regressions (i.e., one for males, another for females) were run including the new variables. The interaction is displayed in Figure 1. As shown in Figure 1, there was a significant difference in delinquency for females across levels of unemotionality with females with low unemotionality having the least amount of self-reported delinquent behavior and higher unemotionality increasing the likelihood of delinquency for females.

Table 4

Multiple Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations on Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.40***		.14***	
Ethnicity ^a		-		.25***
Gender		-.20***		.08
DPA		.47***		.05
Callousness		.12*		.06
Uncaring		.16**		.20**
Unemotionality		-.02		.04
Step 2	.03		.04	
Gender x Callousness		-.06		.10
Gender x Uncaring		-.07		-.05
Gender x Unemotionality		.14*		.00
Gender x DPA		-.13		.13
DPA x Callousness		.06		-.17
DPA x Uncaring		.10		-.10
DPA x Unemotionality		-.09		.24*
Step 3	.01		.01	
Gender x DPA x Callousness		-.15		-.02
Gender x DPA x Uncaring		.12		.24
Gender x DPA x Unemotionality		.12		-.16

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

DPA = Delinquent Peer Affiliations

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

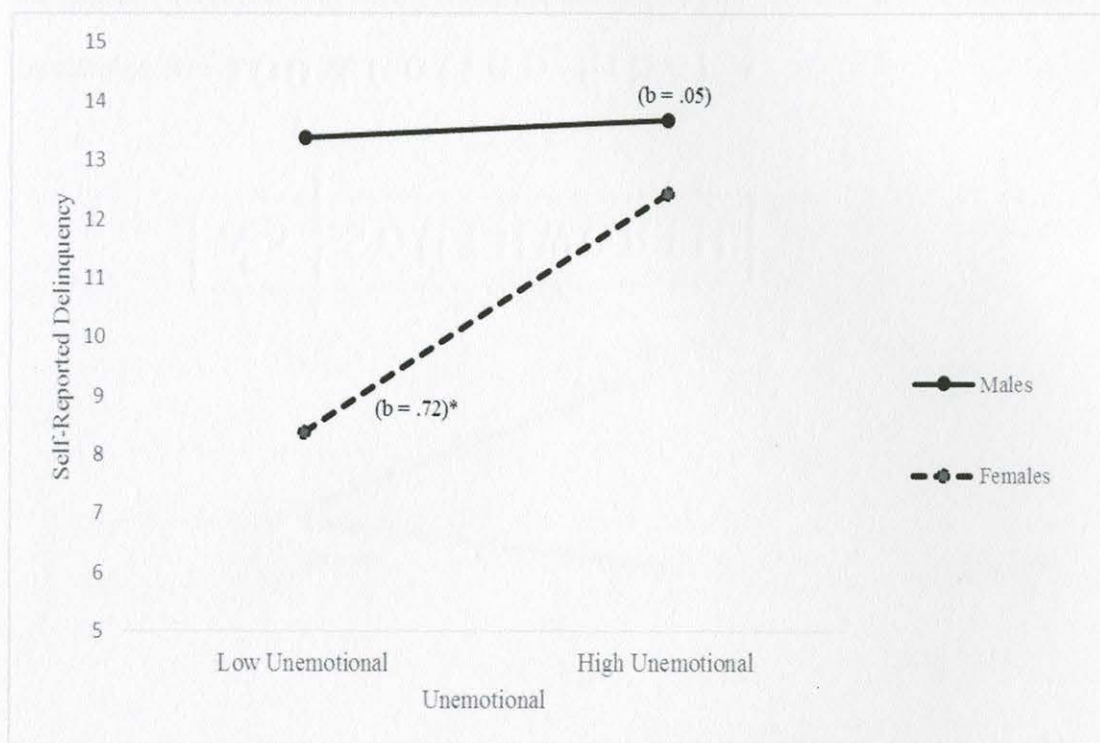


Figure 1. The Interaction between Gender and Unemotionality for Predicting Self-Reported Delinquency. Note: $p = .01^*$.

Table 4 also presents the results for the multiple regression examining the relation between CU traits and disciplinary citations. As ethnicity was significantly correlated with disciplinary citations, it was entered as a control variable in this model. Significant main effects were evident for ethnicity, $\beta = .25, p < .001$ and uncaring, $\beta = .20, p = .001$, in the first step. Additionally, a significant two-way interaction was found between unemotional and delinquent peer affiliations, $\beta = .24, p = .04$, in the second step of the model. To further examine the interaction, a reduced regression model was conducted with unemotional and delinquent peer affiliations as well as their interaction as predictors. Examination of the reduced model indicated that individuals with both high levels of delinquent peer affiliations and high unemotionality had the greatest amount of

disciplinary citations (Figure 2); however, the interaction was found to be no longer significant, $\beta = .19, p = .09$

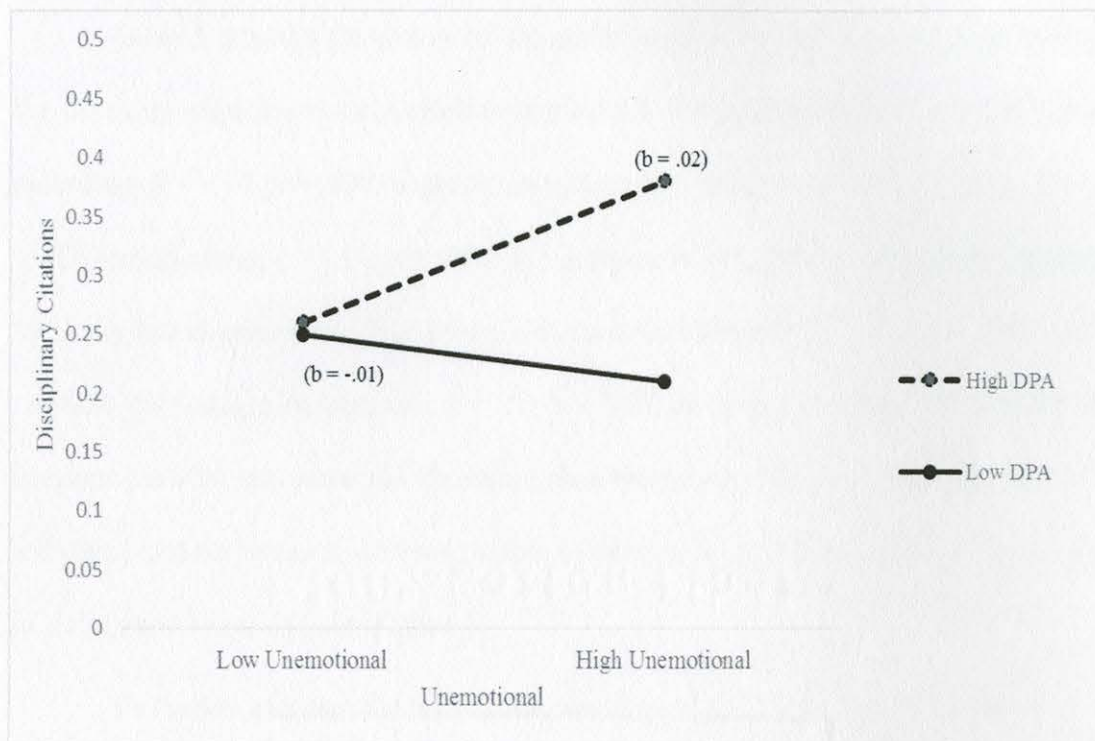


Figure 2. The Interaction of Unemotionality and Delinquent Peer Affiliations Predicting Disciplinary Citations.

Regression Analyses Examining Moderating Effects of Gender and Parenting Practices

Correspondingly, multiple regression analyses were used to examine Hypothesis 5, with parenting practices (i.e., negative and positive) replacing delinquent peer affiliations as a moderator. Therefore, the first step of this model included gender, the three CU scales, and the composites for negative and positive parenting as predictors. The second step added the two-way interaction terms for gender and each of the components of CU traits, gender and negative parenting, gender and positive parenting,

the individual facets of CU traits and negative parenting, and each of the CU traits and positive parenting. Lastly, the third step included the three-way interaction terms for the individual CU traits, gender, and parenting practices.

Table 5 displays the results of the model predicting self-reported delinquency. In the first step, significant main effects were evident for gender, $\beta = -.17, p = .001$, positive parenting, $\beta = -.14, p = .008$, negative parenting, $\beta = .48, p < .001$, callousness, $\beta = .12, p = .03$, and uncaring, $\beta = .17, p = .002$, in the expected directions. Moreover, significant two-way interactions were found for gender x unemotionality, $\beta = .13, p = .046$, and negative parenting x callousness, $\beta = .47, p = .002$, in the second step. As noted above, in a reduced model, the pattern of the interaction between gender and unemotionality indicated that for females, differing levels of unemotionality predicted varying amounts of delinquent behavior (see Figure 1).

To further examine the significant two-way interaction between negative parenting and callousness, a reduced regression model was investigated. The first step of the regression model included callousness and the negative parenting composite as predictors. The second step added the two-way interaction term for callousness and negative parenting. The analysis demonstrated that after removing the other variables that comprised the full regression model, the variance accounted for by the interaction term continued to be significant, $\beta = .44, p = .005$. The interaction from the reduced model was plotted using *post hoc* probing (see Holmbeck, 2002). The reduced model for negative parenting and callousness demonstrated that individuals with high levels of both perceived negative parenting and callousness had the greatest levels of delinquent

behavior (Figure 3). Also evident from Figure 3 is the significant main effect for negative parenting in the prediction of delinquency.

Table 5

Multiple Regression Analyses Examining Moderating Effects of Gender and Parenting Practices on Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	B	ΔR^2	β
Step 1	.44***		.14***	
Ethnicity		-		.25***
Gender		-.17**		.08
PP		-.14**		.01
NP		.48***		-.03
Callousness		.12*		.08
Uncaring		.17**		.22**
Unemotionality		-.04		.05
Step 2	.06**		.04	
Gender x Callousness		-.04		.10
Gender x Uncaring		-.10		-.08
Gender x Unemotionality		.13*		-.01
Gender x PP		-.12		-.39*
Gender x NP		-.25		.11
PP x Callousness		.11		.07
PP x Uncaring		-.28		.01
PP x Unemotionality		-.01		-.26
NP x Callousness		.47**		-.13
NP x Uncaring		.07		-.04
NP x Unemotionality		.05		-.01
Step 3	.01		.01	
Gender x PP x Callousness		.16		.08
Gender x PP x Uncaring		-.24		-.14
Gender x PP x Unemotionality		-.29		.07
Gender x NP x Callousness		-.07		.07
Gender x NP x Uncaring		.07		.11
Gender x NP x Unemotionality		-.08		.16

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

PP= Positive Parenting and NP= Negative Parenting.

The predictors displayed in each step are those newly added per step.

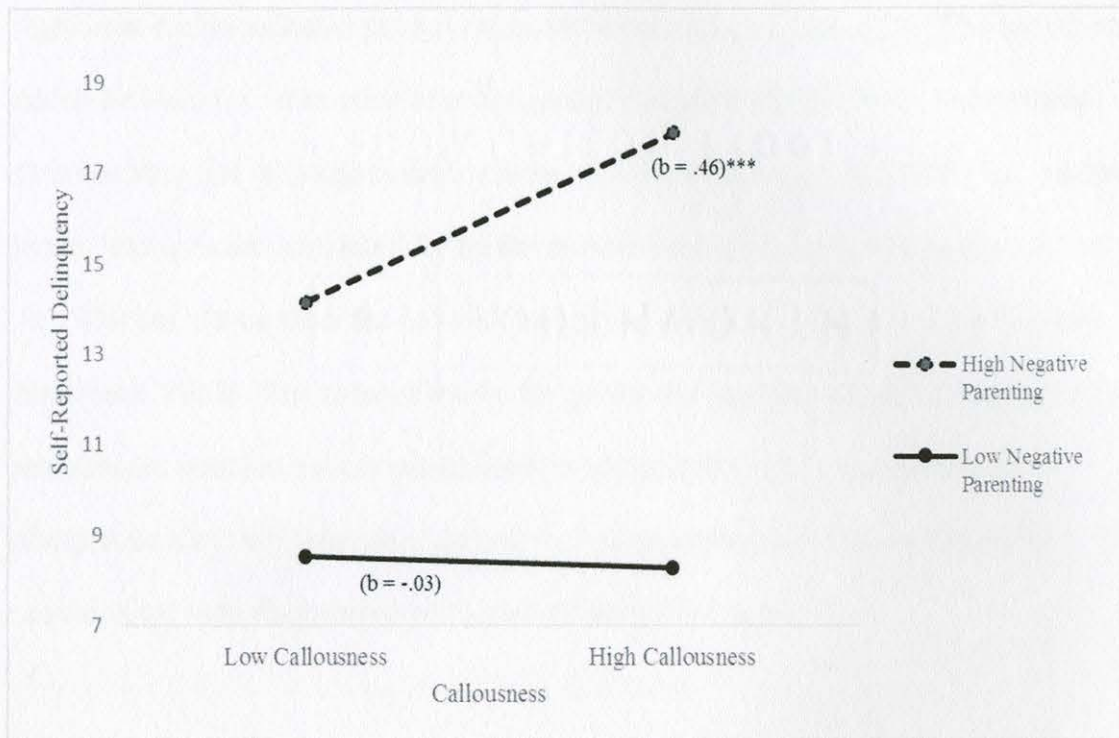


Figure 3. The Interaction of Callousness and Negative Parenting Predicting Self-Reported Delinquency. Note: $p < .001^{***}$.

Table 5 also displays the results of the multiple regression model examining possible moderating effects of gender and parenting practices on the association between CU traits and disciplinary citations. As stated previously, ethnicity was significantly correlated with disciplinary citations; therefore, ethnicity was added to this multiple regression analysis as a control variable. Significant main effects were found for ethnicity, $\beta = .25, p < .001$ and uncaring, $\beta = .22, p = .001$, such that disciplinary citations were associated with being an ethnic minority (i.e., Non-Caucasian) and with having relatively high levels of uncaring characteristics. Moreover, a marginally significant two-way interaction was gender x positive parenting, $\beta = -.39, p = .051$, in the second step. To further explore the marginally significant two-way interaction between gender and positive parenting, a reduced regression model was investigated. The first step of the

regression model included gender and positive parenting as predictors. The second step added the two-way interaction term for gender and positive parenting. The analysis demonstrated that after removing the other variables that comprised the full regression model, the variance accounted for by the interaction term was significant, $\beta = -.45$, $p = .02$. The interaction from the reduced model was plotted using *post hoc* probing (see Holmbeck, 2002). The reduced model for gender and positive parenting demonstrated that females with low perceived positive parenting had the greatest number of disciplinary citations, whereas a relative lack of positive parenting was generally unassociated with disciplinary citations for males (see Figure 4).

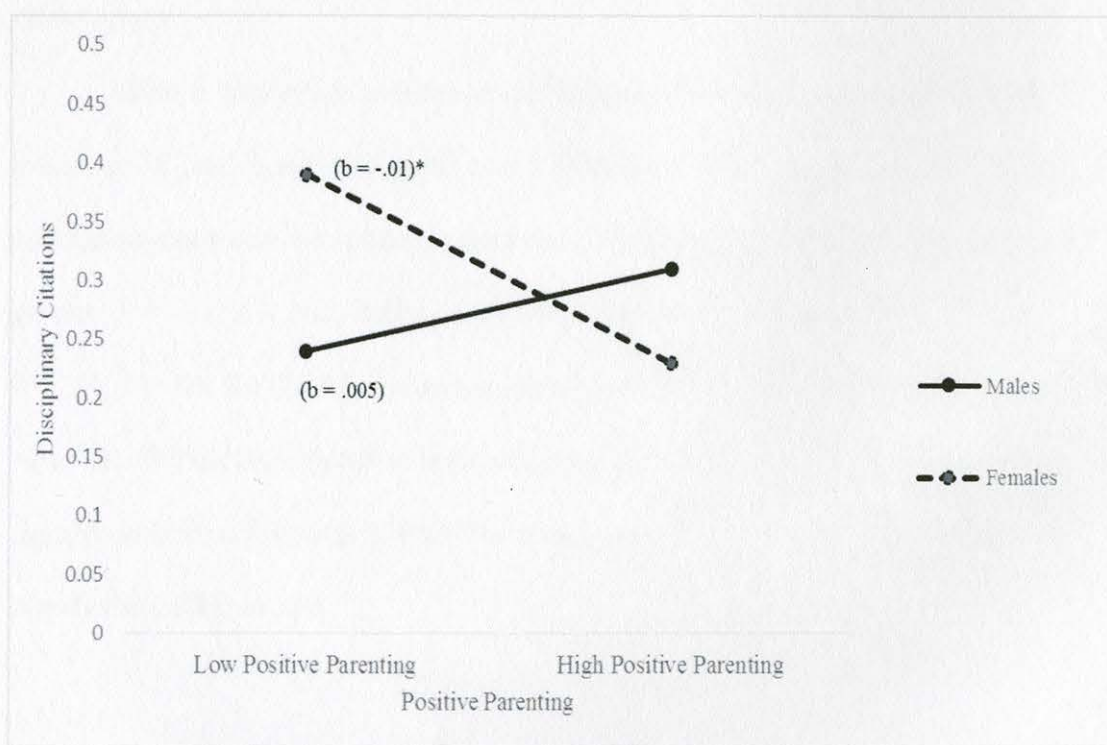


Figure 4. The Interaction between Gender and Positive Parenting in Predicting Disciplinary Citations. Note: * $p = .02$.

Follow-up Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations

To further investigate the role of the specific dimensions of CU traits in the hypothesized models, follow-up analyses were conducted. Specifically, separate multiple regression models were conducted for each CU dimension. For instance, the first step of one of the follow-up models included gender, callousness, and delinquent peer affiliations as predictors. The second step added the two-way interaction terms for gender x callousness, gender x delinquent peer affiliations, and callousness x delinquent peer affiliations. Lastly, the third step included the three-way interaction term (i.e., callousness x gender x delinquent peer affiliations).

Callousness

Table 6 displays the results of multiple regression analyses examining the influence of gender and delinquent peer affiliations on the relation between callousness and delinquency and disciplinary citations. Significant main effects were evident for gender, $\beta = -.21, p < .001$, delinquent peer affiliations, $\beta = .51, p < .001$, and callousness, $\beta = .14, p = .01$, for the regression examining self-reported delinquency as the outcome variable. Within the regression using disciplinary citations as the outcome variable, a significant main effect was found for ethnicity, $\beta = .25$. No interaction terms were significant in this model.

Table 6

Multiple Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations on the Relation between Callousness and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.38***		.10***	
Ethnicity ^a		-		.25***
Gender		-.21***		.06
DPA		.51***		.12
Callousness		.14**		.08
Step 2	.01		.03	
Gender x Callousness		-.03		.11
Gender x DPA		-.11		.13
DPA x Callousness		.02		-.17
Step 3	.00		.00	
Gender x DPA x Callousness		.02		.07

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Uncaring

Table 7 presents the results of the same multiple regression analyses using uncaring instead of callousness as a predictor. Significant main effects were found for gender, $\beta = -.20$, $p < .001$, delinquent peer affiliations, $\beta = .51$, $p < .001$, and uncaring, $\beta = .17$, $p = .002$, for the regression examining self-reported delinquency as the dependent variable. For disciplinary citations, significant main effects were found for ethnicity, $\beta = .25$, $p < .001$, and uncaring, $\beta = .21$, $p = .002$. No interaction terms were significant in this model.

Table 7

Multiple Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations on the Relation between Uncaring and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	B	ΔR^2	β
Step 1	.39***		.13***	
Ethnicity ^a		-		.25***
Gender		-.20***		.08
DPA		.51***		.08
Uncaring		.17**		.21**
Step 2	.01		.01	
Gender x Uncaring		-.06		-.03
Gender x DPA		-.14		.19
DPA x Uncaring		.09		-.06
Step 3	.00		.01	
Gender x DPA x Uncaring		.11		.18

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Unemotionality

Table 8 shows the results of the models using unemotionality as a predictor. Significant main effects were evident for gender, $\beta = -.21$, $p < .001$, and delinquent peer affiliations, $\beta = .57$, $p < .001$, for the model predicting self-reported delinquency. In addition, the significant two-way interaction between gender and unemotionality, $\beta = .13$, $p = .04$, was evident. This interaction is discussed above and is depicted in Figure 1. For the model predicting disciplinary citations, significant main effects were demonstrated for delinquent peer affiliations, $\beta = .15$, $p = .03$, and ethnicity, $\beta = .25$, $p < .001$, with Non-Caucasian participants having more reported citations than Caucasian participants.

Table 8

Multiple Regression Analyses Examining Moderating Effects of Gender and Delinquent Peer Affiliations on the Relation between Unemotionality and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.37***		.10***	
Ethnicity ^a		-		.25***
Gender		-.21***		.07
DPA		.57***		.15**
Unemotionality		.00		.06
Step 2	.02		.02	
Gender x Unemotionality		.13**		.02
Gender x DPA		-.17		.15
DPA x Unemotionality		-.05		.18
Step 3	.00		.00	
Gender x DPA x Unemotionality		.10		-.08

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Follow-up Regression Analyses Examining Moderating Effects of Gender and Negative Parenting Practices

Follow-up regressions were also conducted with parenting practices replacing delinquent peer affiliations as a moderator in the regression models. To provide further clarity within the models, separate regression analyses were conducted for negative and positive parenting practices.

Callousness

The first step of one of the models included gender, callousness, and negative parenting as predictors. The second step added the two-way interaction terms for gender x callousness, gender x negative parenting, and callousness x negative parenting. Lastly,

the third step included the three-way interaction term (i.e., callousness x gender x negative parenting). The results of the models involving callousness and negative parenting are shown in Table 9. Significant main effects were found for gender, $\beta = -.18$, $p = .001$, negative parenting, $\beta = .51$, $p < .001$, and callousness, $\beta = .16$, $p = .004$, in the first step of the regression predicting self-reported delinquency. Moreover, there was a significant two-way interaction between negative parenting and callousness, $\beta = .40$, $p = .01$. This interaction is described above and is depicted in Figure 3. For the model predicting disciplinary citations, significant main effects were found for ethnicity, $\beta = .25$, $p < .001$.

Table 9

Multiple Regression Analyses Examining Moderating Effects of Gender and Negative Parenting Practices on the Relation between Callousness and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.39***		.09**	
Ethnicity ^a		-		.25***
Gender		-.18**		.06
NP		.51***		.01
Callousness		.16**		.13
Step 2	.03**		.02	
Gender x Callousness		.02		.14
Gender x NP		-.24		.15
NP x Callousness		.40**		-.12
Step 3	.00		.00	
Gender x NP x Callousness		.07		.19

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Uncaring

Table 10 displays the model examining the moderating effects of gender and negative parenting on the association between uncaring and delinquency as well as disciplinary citations. Significant main effects were found for gender, $\beta = -.16, p = .002$, negative parenting, $\beta = .51, p < .001$, and uncaring, $\beta = .22, p < .001$, in the prediction of self-reported delinquency. For the model predicting disciplinary citations, significant main effects were found for ethnicity, $\beta = .25, p < .001$, and uncaring, $\beta = .24, p < .001$, consistent with those noted above when delinquent peer affiliations were included in the model instead of negative parenting.

Table 10

Multiple Regression Analyses Examining Moderating Effects of Gender and Negative Parenting Practices on the Relation between Uncaring and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.41***		.13***	
Ethnicity ^a		-		.25***
Gender		-.16**		.09
NP		.51***		.00
Uncaring		.22***		.24***
Step 2	.02*		.00	
Gender x Uncaring		-.04		.01
Gender x NP		-.26		.17
NP x Uncaring		.23		-.05
Step 3	.00		.00	
Gender x NP x Uncaring		.16		.18

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Unemotionality

Table 11 presents the regression analyses examining the moderating effects of gender and negative parenting on the relation between unemotionality and delinquent

behavior. Significant main effects were found for gender, $\beta = -.17, p = .001$, and negative parenting, $\beta = .56, p < .001$, for the model predicting self-reported delinquency. Additionally, the significant two-way interaction between gender and unemotionality, $\beta = .15, p = .03$, was again evident in this model (see Figure 1). In this model, there was also a significant interaction between gender and negative parenting, $\beta = -.35, p = .02$. It should be noted that in a reduced model including only gender and negative parenting, as well as their interaction as predictors of self-reported delinquency, the interaction was no longer significant, $\beta = -.26, p = .07$. *Post hoc* probing of the interaction was conducted according to the procedures outlined by Holmbeck (2002). Although non-significant in the reduced model, the interaction appeared to follow a pattern whereby males with high levels of perceived negative parenting (i.e., inconsistent discipline and low monitoring/supervision) reported the highest levels of delinquency (see Figure 5). Figure 5 also demonstrated the main effect of perceived negative parenting on self-reported delinquency independent of gender, as the slopes of the lines for both males and females were significant. It should be further noted that this negative parenting by gender interaction was not evident in the regression models involving callousness or uncaring. In the model predicting disciplinary citations, a significant main effect was again evident for ethnicity, $\beta = .26, p < .001$.

Table 11

Multiple Regression Analyses Examining Moderating Effects of Gender and Negative Parenting Practices on the Relation between Unemotionality and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.37***		.08**	
Ethnicity ^a		-		.26***
Gender		-.17**		.07
NP		.56***		.04
Unemotionality		.02		.08
Step 2	.02**		.01	
Gender x Unemotionality		.15**		.05
Gender x NP		-.35**		.17
NP x Unemotionality		.12		.02
Step 3	.00		.01	
Gender x NP x Unemotionality		.11		.24

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

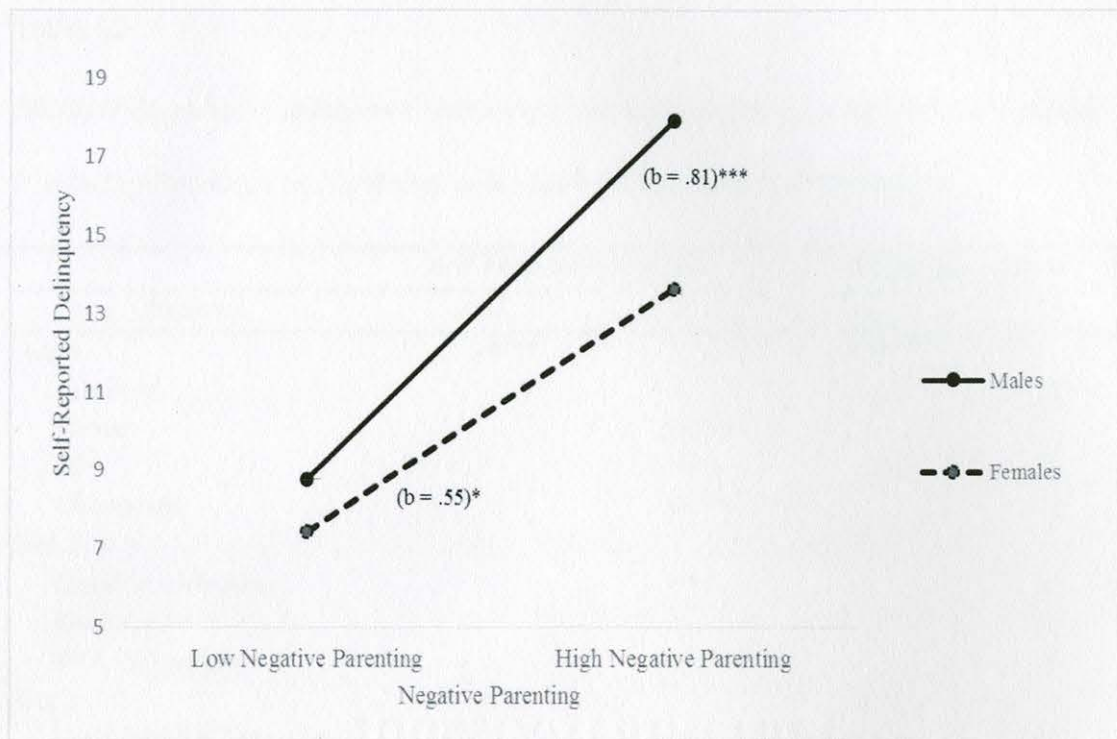


Figure 5. The Interaction between Gender and Negative Parenting in Predicting Self-Reported Delinquency. Note: *** $p < .001$.

Follow-up Regression Analyses Examining Moderating Effects of Gender and Positive Parenting Practices

Callousness

Table 12 shows results of the regression analyses including gender, positive parenting, and callousness as predictors. In the model predicting self-reported delinquency, significant main effects were found for gender, $\beta = -.22, p < .001$, positive parenting, $\beta = -.19, p = .001$, and callousness, $\beta = .30, p < .001$. The effect for positive parenting was negative, indicating an inverse relation between self-reported delinquency and perceptions of parental involvement and positive reinforcement. For the model predicting disciplinary citations, a significant main effect was again found for ethnicity, $\beta = .25, p < .001$. No significant interactions were found for this model.

Table 12

Multiple Regression Analyses Examining Moderating Effects of Gender and Positive Parenting Practices on the Relation between Callousness and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.19***		.09***	
Ethnicity ^a		-		.25***
Gender		-.22***		.06
PP		-.19**		-.06
Callousness		.30***		.12
Step 2	.01		.03	
Gender x Callousness		-.09		.13
Gender x PP		-.21		-.34
PP x Callousness		.09		-.04
Step 3	.00		.00	
Gender x PP x Callousness		-.14		-.06

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Uncaring

The results of regression analyses involving uncaring and positive parenting are shown in Table 13. Significant main effects were found for gender, $\beta = -.19$, $p = .002$, positive parenting, $\beta = -.17$, $p = .007$, and uncaring, $\beta = .30$, $p < .001$, in the prediction of self-reported delinquency. For the model examining disciplinary citations, significant main effects were found for ethnicity, $\beta = .25$, $p < .001$, and uncaring, $\beta = .24$, $p < .001$. Furthermore, a significant two-way interaction was found between gender and positive parenting, $\beta = -.40$, $p = .03$. To further examine the interaction, a reduced model was conducted with the first step of the model including gender and positive parenting as predictors and the second step adding the two-way interaction term for gender and positive parenting predicting disciplinary citations. As noted previously, the reduced

regression model indicated that this interaction remained significant, $\beta = -.45, p = .02$.

Figure 4 depicts the reduced regression model for this interaction according the method recommended by Holmbeck (2002). As shown in Figure 4, disciplinary citations were particularly high for females with low levels of perceived positive parenting. Perceived positive parenting did not seem to have a significant association with disciplinary citations for males.

Table 13

Multiple Regression Analyses Examining Moderating Effects of Gender and Positive Parenting Practices on the Relation between Uncaring and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.19***		.13***	
Ethnicity ^a		-		.25***
Gender		-.19**		.09
PP		-.17**		-.02
Uncaring		.30***		.24***
Step 2	.01		.02	
Gender x Uncaring		-.10		-.03
Gender x PP		-.21		-.40*
PP x Uncaring		-.22		-.06
Step 3	.00		.00	
Gender x PP x Uncaring		-.12		-.18

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

Unemotionality

The results of the final regression analyses examining the moderating effects of gender and positive parenting on the association between unemotionality and delinquent behavior are displayed in Table 14. For self-reported delinquency, significant main effects were evident for gender, $\beta = -.21, p = .001$, and positive parenting, $\beta = -.24, p <$

.001. There was also a significant three-way interaction between gender, positive parenting, and unemotionality, $\beta = -.42, p = .03$, in the prediction of self-reported delinquency. To further examine the significant three-way interaction, separate regression models were conducted for each gender. Positive parenting and unemotionality were predictors in the first step of the reduced model, and the second step added the two-way interaction term for positive parenting and unemotionality predicting self-reported delinquency. After the separate male and female reduced regression models were conducted, *post hoc* probing of each gender's interaction was conducted according to the procedures outlined by Holmbeck (2002). The interaction between positive parenting and unemotionality in predicting delinquency in males is shown in the left panel of Figure 6. For males, those with low unemotionality and low perceived positive parenting had the highest levels of self-reported delinquency. The interaction between positive parenting and unemotional traits for females is displayed in the right panel of Figure 6. As shown in the female graph, the pattern was different for females in that the highest levels of delinquency were apparent for females with high unemotionality and low perceived positive parenting. Lower levels of unemotionality were associated with reduced risk of delinquency for females who reported limited positive parenting.

Lastly, the regression model predicting disciplinary citations again demonstrated a significant main effect for ethnicity, $\beta = .26, p < .001$. Additionally, a significant two-way interaction was found for gender and positive parenting, $\beta = -.38, p = .05$. As demonstrated above, the reduced model for gender and positive parenting was still significant, $\beta = -.45, p = .02$ (see Figure 4).

Table 14

Multiple Regression Analyses Examining Moderating Effects of Gender and Negative Parenting Practices on the Relation between Unemotionality and Delinquency

Predictor	Self-Reported Delinquency		Disciplinary Citations	
	ΔR^2	β	ΔR^2	β
Step 1	.11***		.08**	
Ethnicity ^a		-		.26***
Gender		-.21**		.07
PP		-.24***		-.06
Unemotionality		.05		.07
Step 2	.02		.03	
Gender x Unemotionality		.15		.02
Gender x PP		-.10		-.38*
PP x Unemotionality		.07		-.18
Step 3	.02**		.00	
Gender x PP x Unemotionality		-.42**		-.06

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

^aEthnicity was used as a control variable within the regression with disciplinary citations as the outcome variable.

The predictors introduced in each step are displayed.

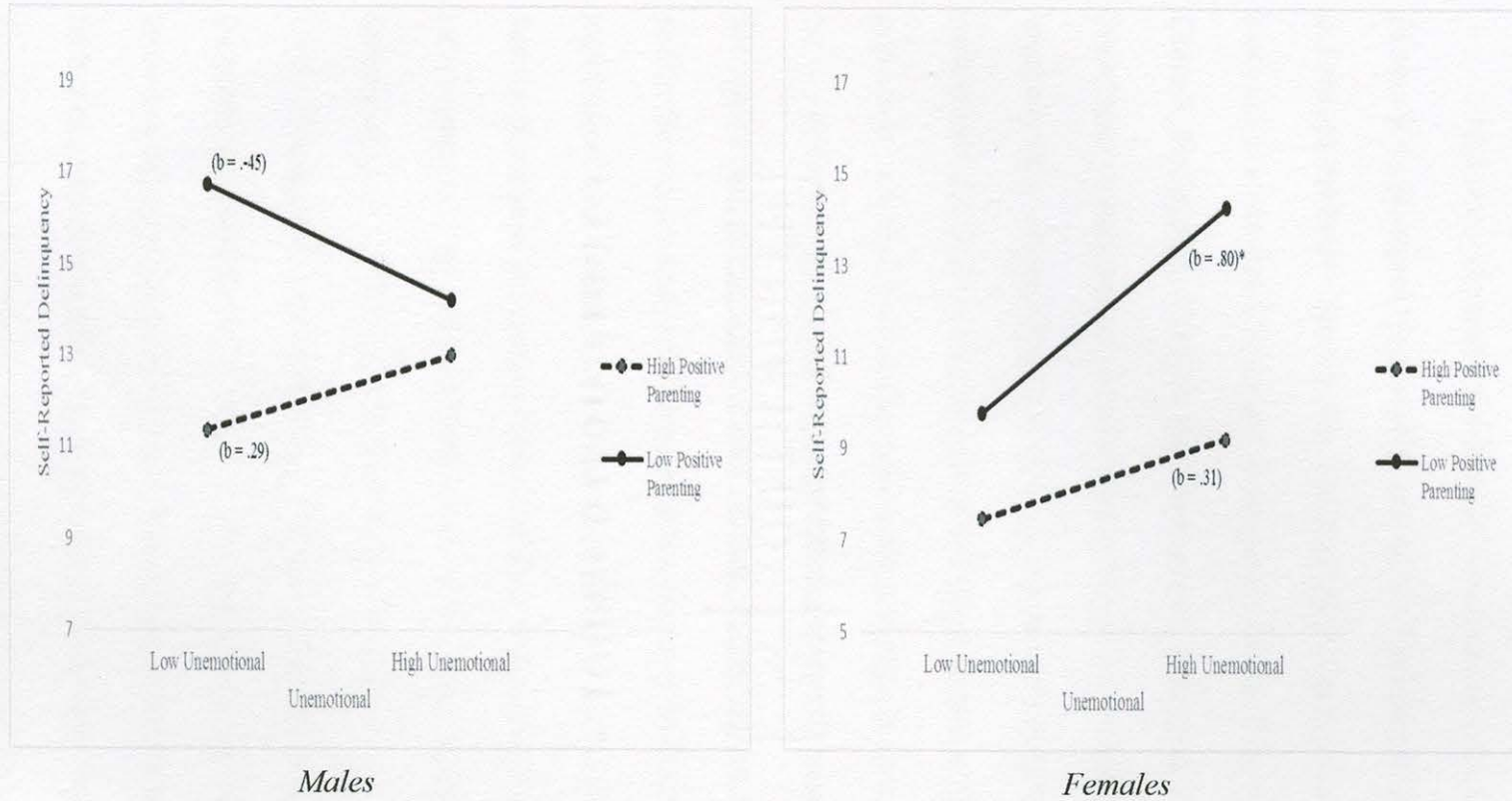


Figure 6. The Interaction between Positive Parenting and Unemotionality for Predicting Self-Reported Delinquency. Note: * $p = .006$.

CHAPTER VII

SUMMARY

This study examined the interplay between adolescent CU traits, contextual factors (i.e., delinquent peer affiliations and ineffective parenting), and gender in delinquent behavior. Specifically, the study investigated whether the recognized association between CU traits and delinquency (Frick, Cornell, Barry et al., 2003; Frick, Cornell, Bodin et al., 2003) differs when gender, parenting, and peer affiliations are introduced as moderators. As expected, given previous research, callousness and uncaring traits were associated with self-reported delinquency, disciplinary citations, and delinquent peer affiliations, suggesting that these aspects of CU traits are particularly important for understanding risk factors for, and engagement in, delinquent behavior.

However, the proposed gender differences in CU traits, parenting practices, and delinquent peer affiliations were not evident. Moreover, the lack of gender differences within the present study on CU traits, delinquent peer affiliations, and parental supervision may indicate that this sample of female adolescents is atypical. The finding that the females in this sample resembled their male counterparts on CU traits may also help explain why they did not differ from males in this sample on other variables such as delinquent peer affiliations and parental supervision.

The hypothesized interaction between delinquent peer affiliations and CU traits for predicting delinquency in males was not supported. In fact, only one interaction involving delinquent peer affiliations was evident in the present study. However, after further examination and *post hoc* probing, the interaction was no longer significant. These results indicate that in the present sample, delinquent peer affiliations, although

related to delinquency, did not play a significant role in the relation between CU traits and delinquency. Research has been mixed on the idea that individuals with psychopathic traits become involved with delinquent peers (see Kimonis et al., 2004; Muñoz, Kerr, & Bešić, 2008; Quay, 1993). Recent research has suggested that youth high on CU and grandiose-manipulative traits affiliate with delinquent peers but are insensitive to the influence of said peers (Kerr, Van Zalk, & Stattin, 2012). Therefore, despite the association between delinquent peer affiliations and CU traits, the lack of interaction between delinquent peer affiliations and CU traits predicting delinquency may have stemmed from the relative lack of influence of peers on the delinquency associated with CU traits.

Previous research has shown that ineffective parenting increases the likelihood of conduct problems in youth and that hostile childhood behavior is often followed by reduction in monitoring, supervision, and discipline (Lytton, 1990). This cycle of influence on antisocial behavior has recently been examined in youth with CU traits. Research has demonstrated that the presence of CU traits in children may influence how their caregivers parent them (Muñoz, Pakalniskiene, & Frick, 2011). Specifically, Muñoz and colleagues (2011) found that parents of youth with high CU traits reduced their level of monitoring/supervision over time and were less consistent in their use of supervision than parents of children with low CU traits. Indeed, follow-up analyses in the present study revealed that poor monitoring and supervision were associated with each dimension of CU traits. One possible explanation for such an association is if parents feel that their rules have little to no effect on their children's behavior, they may reduce their efforts to provide monitoring, supervision, or positive reinforcement. Additionally, as

manipulativeness is encompassed within CU traits, children with these traits may influence their parents into affording them more freedom and fewer restrictions.

Therefore, as the females in the sample had similar levels of CU traits as the males, they may have experienced less parental supervision than is typically thought to be the case for adolescent females (Fagan et al., 2011; Hill & Atkinson, 1988). Moreover, as noted in the present study, negative parenting practices such as poor monitoring and supervision and inconsistent discipline may not clearly exert a differential influence on delinquency as a function of CU traits. These strategies seemed to be a risk factor for participants in the present study independent of CU traits (see Figure 5).

Although many of the hypotheses were not supported, the results indicated that gender and parenting practices could have some impact on the relation between CU traits and delinquency. Often, research focuses on the connection between negative parenting and delinquent behaviors (Edens et al., 2008; Oxford, Cavell, & Hughes, 2003), yet in the present study, a perceived lack of positive parenting appeared to significantly affect the association between delinquent behavior as a function of CU traits. The manner in which this occurred appeared to differ for males and females. In particular, there was a significant three-way interaction between unemotionality, gender, and positive parenting practices in predicting self-reported delinquency. For males, it appeared that low positive parenting increased the risk for delinquent behavior when the male had low levels of unemotionality (i.e., high emotionality). Interestingly, among females, the highest levels of delinquency were for those who reported high levels of unemotionality along with low levels of perceived positive parenting.

An explanation for this pattern may be based on the items on the Unemotionality scale of the ICU itself. First, it is important to note that the internal consistency of the Unemotionality subscale of the ICU was .54, indicating a modest relation among the items. This poor internal consistency is in line with the internal consistency of the ICU Unemotionality scale from previous research (Kimonis et al., 2008). Based on item content, Unemotionality from the ICU seems to capture an individual's emotional expressiveness. That is, low levels of unemotionality imply that one tends to openly express his/her emotions. Lack of emotional reactivity (i.e., shallow affect), particularly in response to another's distress has been linked to psychopathic traits (Patrick, Bradley, & Lang, 1993; Sharp, van Goozen, & Goodyer, 2006). However, research has also demonstrated that difficulties with self-regulation of emotions and behaviors are related to delinquent behavior (Gottfredson & Hirschi, 1990), yet there may be gender differences in emotion regulation and emotional reactivity (Cole, Zahn-Waxler, & Smith, 1994; Sharp et al., 2006). At-risk female youth have been found to minimize and suppress negative emotion, whereas at-risk males tend to display negative emotion in the presence of disappointment both of which were, in turn, associated with conduct problems (Cole et al., 1994). Therefore, previous theory and some evidence support the current findings that females who are more emotionally constrained (i.e., high unemotionality) would display higher delinquent behaviors than females who tend to express their emotions. Moreover, although social mores support the expression of negative emotion in males (Malatesta & Haviland, 1982), males who have difficulty modifying the display of negative emotion (i.e., low unemotional) may exhibit particularly high levels of delinquency (Sharp et al., 2006). Therefore, males who have

lower levels of parental involvement, support, and reinforcement may not have the guidance provided by their parents to aid them in learning how to regulate their emotions which may then leave them vulnerable to involvement in delinquent activity.

Furthermore, present findings suggest that parenting practices, specifically the relative absence of positive parenting, can exacerbate the relation between lack of emotional expression and delinquency for females. Previous research has demonstrated that positive parenting practices can be particularly impactful for females (Bowman et al., 2007), a finding that was mirrored in the present study by the influence of perceived lack of positive parenting on the disciplinary citations received for females (see Figure 4). In addition, for females with the predisposition to display less emotion, the absence of positive parenting may encourage these females to engage in delinquent acts.

In essence, higher perceived positive parenting appeared to be a protective factor against delinquency for both males and females. Research has shown that greater parental involvement is related to less delinquent behavior in adolescents (Griffin, Botvin, Scheier, Diaz, & Miller, 2000). The current findings also expand upon previous research, as they indicate that in an at-risk adolescent population, positive parenting impacts antisocial behaviors as a function of emotionality/unemotionality. Therefore, positive parenting practices may be influential in regards to the behaviors associated with unemotionality but in different ways for males and females. Previous research has shown connections among callousness, uncaring, and delinquent behavior, sensation seeking, and impulsivity (Essau et al., 2006a; Marini & Stickle, 2010). However, the present results may begin to shed light as to how or under what conditions unemotionality may relate to adolescent delinquency.

Further examination of the sample found an unanticipated association between disciplinary citations and ethnicity, with Non-Caucasian participants tending to receive more disciplinary citations. At the extreme high end of the sample distribution (i.e., three standard deviations above the mean), there was a mix of Caucasians and Non-Caucasians receiving 27 or more disciplinary citations in that a third of those participants, 2 out of 6, were Caucasian. Therefore, although Non-Caucasians tended to have more citations overall, Caucasians were represented in participants with particularly high numbers of disciplinary citations. However, it is important to note that although there were Caucasians in the higher end of the distribution, there was an overrepresentation of Non-Caucasians in the extreme end of the distribution. As disciplinary citations encompass a variety of delinquent behavior (i.e., insubordination to staff, arguments/fights with peers, disruptions in class, and not caring for personal belongings) it is difficult to reason as to why Non-Caucasians tended to have more infractions than Caucasians. Nevertheless, past research suggests that minority status over and above being an at-risk youth is related to increased levels of delinquent behavior and conflict with authority (Spivack, Marcus, & Swift, 1986; Swickard & Spilka, 1961); therefore, one possible explanation is that Non-Caucasians may have had more difficulty conforming to authority figures within the residential setting leading to higher rates of disciplinary citations or that authority figures perceived this to be the case. A connection between self-reported delinquency and ethnicity was not observed, indicating that when asked to describe their own behavior both Caucasians and Non-Caucasians were equally apt to divulge previous delinquent acts.

Limitations

One limitation of the present study was that the majority of the instruments were self-report in nature. As all of the predictors and one of the outcome variables relied on the perception of the participants, shared source variance may explain some of the findings. Additionally, as the sample was mainly composed of males, the relatively limited number of females could have reduced statistical power in this study as well as its generalizability to the general adolescent population. The number of available female participants was slightly lower than that deemed necessary from an *a priori* power analysis for detecting a moderate effect. Therefore, having more females could have allowed for sufficient power to detect moderate effects as significant. Nevertheless, given the number of regression models analyzed in this study, a conservative approach to discussing effects as significant appears warranted. Additionally, much of the research demonstrating gender differences in parenting focuses on a younger population. Therefore, the age range of the present study (16-19) could be considered a possible limitation in this regard, even though adolescents' perceptions of their parents' parenting strategies was of interest in this study. Moreover, the use of disciplinary citations as an indicator of delinquency presents a potential conceptual issue given that there is considerable variability in the types of behaviors that could result in a citation in the residential program (e.g., from insubordination to authority to altercations with others). Furthermore, participants came from a voluntary residential facility for youth who had dropped out of school which may limit the present study's generalizability to other adolescents.

Future Directions

To expand upon the present study, future research should examine these questions in a sample with a wider age range to examine whether age may affect how parenting practices and delinquent peer affiliations moderate the relation between CU traits and delinquency. Further research should also continue to explore other possible moderators of the relation between CU traits and delinquency, such as familial factors like parental psychopathology and familial offending. Additionally, it would be of interest to observe whether the results are specific to an at-risk sample; therefore, future research should examine these moderators in community, clinical, and offender samples. The application of investigations of moderators in the connection between CU traits and problem behaviors to multiple samples may have direct implications for intervention efforts. For example, further research in the examination of parenting practices may allow for knowledge as to which particular positive or negative parenting practices affect the association between CU traits and delinquency. Understanding also that particular dimensions of CU traits may be differentially influenced by parenting practices can allow for interventions targeting both improvement of parenting and, as this study suggests, regulation of emotional expression to decrease risk of delinquent behavior.

APPENDIX

INSTITUTIONAL REVIEW BOARD NOTICE OF COMMITTEE ACTION


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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: **C24111802**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: **N/A**IRB COMMITTEE ACTION: **Expedited Review Approval**PERIOD OF PROJECT APPROVAL: **09/13/2011 to 09/12/2012**

Lawrence A. Hosman

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

9-14-2011

DATE

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