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## Adolescents with Callous Unemotional Traits and their Roles in Group Crime

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Adolescents with Callous Unemotional Traits and their Roles in Group Crime

A Thesis

Submitted to the Graduate Faculty of the  
University of New Orleans  
in partial fulfillment of the  
requirements for the degree of

Master of Science  
in  
Psychology

by

Laura C. Thornton

B.S. Southwestern University, 2009

December, 2012

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## Abstract

The present study examined the relationship between callous-unemotional (CU) traits and self-reported leadership characteristics during group crimes among 614 first-time offenders participating in a large multi-site study. Resistance to peer influence (RPI) and self-esteem (SE) were hypothesized to mediate the relationship between CU traits and leadership during group crime. The results indicated that youth with CU traits were more likely to commit crimes with others. Further, although youth with CU traits reported they came up with the idea for crimes and were leaders during group crimes, these relationships were not mediated by RPI and SE. Future research on youth with CU traits characteristics during group crimes is recommended and implications for tailored treatments of this population are discussed.

Callous-unemotional traits, group crime, leadership, resistance to peer influence, self-esteem

## Adolescents with Callous Unemotional Traits and their Roles in Group Crime

Research on juvenile delinquency has consistently shown that adolescents tend to commit crime in groups (Puzzanchera, 2009; Warr, 2002; Zimring, 1981). The notion that adolescents commit crimes in groups was first demonstrated in Chicago in 1928 in which 81.8% of the juveniles brought to the Cook County courts committed their crimes in groups, and this finding has been replicated repeatedly over the ensuing decades (as cited in Zimring, 1981).

Importantly, this phenomenon of group offending is not a location specific trend. Aggregate data from the Office of Juvenile Justice and Delinquency Prevention (Puzzanchera, 2009) based on the Federal Bureau of Investigation (FBI) national crime statistics show that across the United States for the year 2008, the number of juvenile arrests is greater than the number of juvenile cases cleared, indicating that juveniles tend to commit crime in groups (Puzzanchera, 2009). Furthermore, this group crime trend is not limited to specific offenses, but for all of the offense categories examined (i.e., murder, forcible rape, robbery, aggravated assault, burglary, larceny-theft, motor vehicle theft, and arson), although some offenses tend to be more group-oriented (e.g., robbery and burglary) than others (e.g., forcible rape and aggravated assault; Puzzanchera, 2009).

Early research on group-oriented crime attempted to identify factors which distinguished between those adolescents who committed crimes in groups compared to those who only committed crimes alone (Quay, 1993). However, recent research has suggested that it is difficult to find antisocial adolescents who only commit crimes alone (Goldweber, Dmitrieva, Cauffman, Piquero, & Steinberg, 2011). Instead, research has identified two specific types of offending patterns across adolescence both of which include substantial involvement in crimes committed by the group but differ in the relative rate of crimes committed alone. First, there is an

increasingly solo offender, who primarily offends with others in early and mid-adolescence but begins to offend more alone as he or she ages. The second, and much smaller trajectory, includes adolescents who are more likely to commit crimes with others throughout adolescence compared to the increasingly solo-offenders (Goldweber et al., 2011). More research on these two trajectories is important. However, this research suggests that adolescent crime is largely a group process and, thus, research needs to focus on understanding the group dynamics that influence this process.

### *The Influence of Delinquent Peers*

Research on the group process involved in juvenile delinquency has also suggested that the influence of the peer group is not only important for understanding the causes of criminal behavior in youth, but is also related to the frequency and severity of the problem behavior. Research has consistently indicated that the rate of delinquent acts increases as youth enter gangs (Craig, Vitaro, Gagnon, & Tremblay, 2002; Farrington & Loeber, 2000) and decreases when the youth leave the gang (Gordon et al., 2004). Specifically this body of research finds significant increases in drug use and selling, as well as property and violent delinquency while youth are in gangs, which returns to pre-gang membership levels after exiting the gang (Gordon et al., 2004). Additionally, youth in gangs and their peers identify gang members as more aggressive than non-gang-involved youth and teachers report more fighting behaviors from gang members (Craig et al., 2002).

Even if an adolescent is not in a formal gang, an adolescent's association with other peers who commit crimes can have an important influence on his or her delinquent behavior as well, which has been the focus of numerous criminological theories (e.g., Warr, 2002) and psychological research (Goldweber et al., 2011; Lacourse, Nagin, Tremblay, Vitaro & Claes,



2003). In fact, affiliation with delinquent peers is one of the strongest and most consistent predictors of antisocial behavior (Warr, 2002). For example, boys demonstrated significant positive associations between the number of delinquent peers in 10<sup>th</sup> grade and the number of delinquent acts committed during the 11<sup>th</sup> grade (Piquero, Gover, MacDonald, & Piquero, 2005). Moreover, across four assessments from age 14 to 21, youth who increased their deviant peer associations consistently increased their involvement in violent and property crime (Fergusson, Swain-Campbell, & Horwood, 2002). Interestingly, as youth age the effect of delinquent peer associations decreases, such that the risks for violent crime associated with high delinquent peer associations dropped from over eight times as high at age 15 to below twice as high at age 21 (Fergusson et al., 2002).

Given the importance of deviant peers for understanding delinquency in adolescence, research has investigated the developmental processes that can lead to involvement with delinquent peers. Two major models have guided this research, the deviant peer selection model, and the deviant peer socialization model. The deviant peer selection model asserts that antisocial individuals are more likely to select deviant peers (Gordon et al., 2004; Thornberry, Krohn, Lizotte, & Chard-Wierschem, 1993). The general peer selection model suggests that youth tend to form new relationships selectively, that these relationships tend to be reciprocated, and that youth tend to select friends of their friends over time (Baerveldt, Völker, & Van Rossem, 2008; Kerr, Van Zalk, Stattin, 2012). A recent investigation indicated that over a period of five years, non-peers were more likely to become peers if they were similar on characteristics such as delinquency, as well as, age, gender, and impulsive-irresponsible traits (Kerr et al., 2012). Moreover, an analysis of peer networks in Dutch schools indicated that non-delinquent youth did not take peers' delinquency into consideration in their nomination of peers; that is, non-

delinquent youth were equally likely to report non-delinquent or delinquent peer nominations (Baerveldt et al., 2008). For delinquent youth, there was a 9.2% chance that they would name another delinquent youth as a peer compared to a non-delinquent peer (2.6%). Further evidence to support the peer selection model includes the finding that boys on a higher antisocial behavior trajectory are more likely to join gangs (Lahey, Gordon, Loeber, Southamer-Loeber, & Farrington, 1999) and that future gang members report more drug use and sales, aggression, as well as property and violent delinquency than boys that never join a gang (Gordon et al., 2004).

On the other hand, the deviant peer socialization model posits that deviant peer affiliation increases antisocial behavior through a social learning process (Gordon et al., 2004; Thornberry et al., 1993). Evidence for the socialization model focuses on increases in delinquent behavior when youth associate with other delinquent peers (e.g., gangs; Gordon et al., 2004). These socialization effects have been shown in various domains such as aggression, drug use and sales, as well as property and violent offending (Gordon et al. 2004). Further, Lacourse and colleagues (2003) reported that the increase in the degree of delinquent group involvement was associated with an increase in violent behavior (e.g., carrying and/or using weapons, attacking someone) and leaving the delinquent group was associated with a decrease in violent behavior (Lacourse et al., 2003). Moreover, a study including 16 different Dutch schools found socialization processes at each of the schools, such that friends' delinquency influenced individuals' delinquency (Baerveldt et al., 2008). On the other hand, only 4 of the 16 schools exhibited selection processes such that individuals' were selecting friends based on their degree of delinquency similarity, and the strength of these effects varied across the four schools (Baerveldt et al., 2008).

Importantly, these processes are seen as ongoing, reciprocal, and not mutually exclusive as suggested by criminological theory (Akers & Sellers, 2009) and supported by research

(Baerveldt et al., 2008). As demonstrated by the network analysis of Dutch schools, these processes are concurrent and can vary in their strength (Baerveldt et al., 2008). Social learning theory provides a conceptual framework for understanding these processes (Bandura, 1977). Specifically social learning theory proposes mechanisms which may underlie both selection and socialization processes that are particularly relevant for youths and peer influence (i.e., differential association, definitions, differential reinforcement, imitation; Akers & Sellers, 2009). This theory posits that youth experience differential association, which includes proximal and distal associations and interactions with others, as well as exposure of different norms and values through these associations (Akers & Sellers, 2009). Further, youth experience change in their definitions, their attitudes or meanings attached to behaviors, as well as experience changes in reinforcement (both punishment and reward) for behaviors over time (Akers & Sellers, 2009). The last mechanism, which is directly influenced by the work of Bandura (1977), youth learn about both prosocial and antisocial behavior through imitation of salient models (Akers & Sellers, 2009). These proposed mechanisms may play a role in youths' selection of delinquent peers as well as their ability to influence others delinquency.

Interestingly, there is some evidence to suggest that the importance of both selection and socialization processes may vary across development, such that peer selection appears to be more influential in mid-adolescence, whereas socialization influences antisocial behavior more in later adolescence (Monahan, Steinberg, & Cauffman, 2009). However, another possibility that has not been adequately addressed in research is whether the importance of the two explanatory models (i.e., deviant peer selection, deviant peer socialization) may vary depending on certain characteristics of the child. Further, these characteristics of the child may also influence the role that the adolescent may play in committing the group-based crime. One potentially important

individual difference is whether the adolescent displays significant levels of callous-unemotional (CU) traits.

### *Callous-Unemotional Traits*

Callous-Unemotional (CU) traits include some of the core features that Cleckley (1976) described for adult psychopathy, which typically include lack of guilt, lack of empathy and a callous use of others for gain (Barry et al., 2000). A significant amount of research has indicated that CU traits designate an important subgroup of antisocial individuals (Frick, 2009; Frick & Dickens, 2006; Frick & White, 2008). Specifically, CU traits have been consistently associated with current delinquency and aid in the prediction of future delinquency. A number of studies reported significant associations between CU traits and various types of delinquency such as overall delinquency (Lexcen, Vincent, & Grisso, 2004; Marsee, Silverthorn, & Frick, 2005), self-reported delinquency (Campbell, Porter, & Santor, 2004), as well as history of violent and nonviolent offenses (Murrie, Cornell, Kaplan, McConville, & Levy-Elkon, 2004; Salekin, Leistico, Neumann, DiCicco, & Duros, 2004). Moreover, research has demonstrated that the level of CU traits predicts future delinquency with follow-up periods ranging from one to seven years (Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick, Stickle, Dandreaux, Farrell, & Kimonis, 2005; Pardini, Obradovic, & Loeber, 2006; Piatrigorsky & Hinshaw, 2004).

Importantly, these reviews also suggest that youth with CU traits seem engage in more severe and violent antisocial behavior than their non-CU counterparts. Several studies report that across samples, youth with CU traits show more frequent, severe, and violent antisocial behavior and crimes (Andershed, Gustafson, Kerr, & Stattin, 2002; Brandt, Kennedy, Patrick, & Crutin, 1997; Kruh, Frick, & Clements, 2005). Similarly, research suggests that CU traits are associated with higher risk for general and violent recidivism (Forth, Hart, & Hare, 1990; Gretton, Hare, &

Catchpole, 2004; Salekin, Ziegler, Larrea, Anthony, & Bennet, 2003) as well as shorter times to both non-violent as well as violent recidivism (Brandt et al., 1997; Catchpole & Gretton, 2003; Lawing, Frick, & Cruise, 2010). The association with CU traits extends into sexual offending as well (Caputo, Frick, & Brodsky, 1999; Lawing et al., 2010). That is, adolescent sexual offenders high on CU traits have more sexual offense victims, are more violent with victims, and demonstrate more planning for sexual offenses than their low-CU counterparts demonstrate (Lawing et al., 2010). Taken together, this body of research suggests that individuals high on CU traits represent an important subgroup within antisocial youth, who show more delinquency, especially violent delinquency, than individuals without CU traits.

Despite this extensive evidence that antisocial individuals high on CU traits are committing more serious and more aggressive crimes, there is little information about with whom and how they are committing crime. Early theories suggested that these youth were “undersocialized”, without delinquent companions and tended to commit crimes alone (Quay, 1993). However, the available evidence does not support this view. That is, Muñoz and colleagues reported that adolescents with CU traits are able to have and maintain relatively stable friendships and their friends reciprocate these friendships (Muñoz, Kerr, & Besic, 2008). Also, adolescents with CU traits have been found to affiliate more with delinquent peers than other adolescents (Kimonis, Frick, & Barry, 2004). Moreover, research clearly suggests that adolescents with CU traits tend to commit crime in groups throughout adolescence and, in fact, may be *more* likely to commit crimes in groups than other adolescents (Goldweber et al., 2011).

Therefore, contrary to early theories, adolescents with CU traits do appear to largely commit crimes in groups. However, research has been quite limited in determining whether

these traits influence the group dynamics involved in adolescent crime. Although this possibility has not been addressed directly, there is some evidence to support this possibility.

### *Leadership in Group Crime*

Despite some evidence that clear role definitions and assignments are often lacking and unstable in many delinquent peer groups (Klein & Crawford, 1967; Stafford, 1984; Yablonsky, 1959), Warr (1996) demonstrated that there is frequently an identifiable “instigator” in a delinquent peer group. Warr operationally defines this leadership role as the person who suggests committing the crime and lists particular characteristics such as being older, male, more delinquent experience, and closeness to peers as common features of an instigator (Warr, 1996; Warr, 2002). Although Warr (2002) suggests that instigation may not be a direct consequence of an individual’s personality traits but a situational phenomenon, youth with CU traits demonstrate several characteristics that may make them more likely to assume and be more adept at leadership.

In support of this possibility, research on adults suggests that individuals with psychopathic traits are often described as having a desire for power and leadership, as seen in case studies of white-collar criminals (Babiak & Hare, 2006; Hare, 1993). Although the majority of work examining corporate psychopathy has been case studies (Babiak & Hare, 2006; Boddy, 2011; Boddy, Ladyschewsky, & Galvin, 2010), there is some empirical research that suggests that individuals with psychopathic traits achieve positions of leadership in business (Babiak, Neumann, & Hare, 2010). That is, in a sample of managers and executives, approximately 15% had scores at or above 30 on the Psychopathy Checklist – Revised (PCL-R), compared to less than 2% in the community sample (Babiak et al., 2010). Moreover, the Interpersonal factor on the PCL-R predicts increases of perceptions of charisma and presentation style, as well as

decreases in responsibility and performance (Babiak et al., 2010). Further, corporations' evaluations of individuals high on psychopathic traits reported perceptions of good communication, strategic thinking, and creativity, but also inadequate management, inability to act as a team player and poor performance (Babiak et al., 2010). This evidence suggests that individuals with psychopathic traits are able to attain high-level leadership positions, perhaps because of their perceived charisma, creativity, and ability to talk with others while not following the rules. Babiak and colleagues (2010) posit that, at high-levels of management, charm, creativity, presentation, and not following the rules may be seen as impressive.

Thus, it is possible that these characteristics could also lead to adolescents with CU traits to be highly influential in their peer groups. In support of this possibility, antisocial youths with CU traits, compared to other antisocial adolescents, show a number of characteristics that could make them more likely to manipulate other youths into committing crimes and lead to them taking more of a leadership role in group based crimes. That is, antisocial youths with CU traits tend to be of higher verbal ability (Loney, Frick, Ellis, & McCoy, 1998), they tend to be less distressed by the effect of their behavior on others (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999), and they tend to be more skilled at social manipulation (Grieve & Mahar, 2010). Further, within adolescents who have been arrested for sex offending, those high on CU traits show a higher level of planning in their crimes (Lawing et al., 2010). Thus, these traits could allow the adolescent with CU traits to be more skilled at planning crimes and, again allowing them to be more successful at manipulating their peers, especially vulnerable peers.

The most direct test of this possibility comes from a study by, Kerr, Van Zalk, and Stattin (2012) who used peer network analyses to test the effects of both the target adolescents' levels of CU traits and their peers' levels of CU traits on the association between antisocial peers and

delinquency in large ( $n = 847$ ) community sample of adolescents (beginning in 8<sup>th</sup> grade). They reported results suggesting that the delinquent behavior of the target child was less influenced by peer delinquency if he or she was high on CU traits. However, if an adolescent had friends high on CU traits, his or her delinquent behavior was more influenced by their peer delinquency. These findings raise the provocative possibility that the antisocial behavior of the adolescent with a CU presentation may be less likely to be influenced by deviant peers but that the adolescent with a CU presentation may be highly influential to the antisocial behavior of his or her peer group.

Based on this research it is possible that adolescents with CU traits may be more likely to take more of a leadership role in group crimes. That is, they may not only identify themselves as the leader of a group, but may exhibit other features of leadership, such as instigating the offense, showing more planning when committing offenses, or being older than their co-offenders (Warr, 2002). This research distinguishing between those antisocial adolescents high and low on CU traits also suggests some characteristics that could make those *low* on CU traits more vulnerable to the influence of peers high on CU traits. Two possible characteristics that could make those low on CU traits vulnerable to following a leader during group crimes would be low self-esteem and poor resistance to peer influence.

#### *Vulnerability Factors to being a Follower in Group Crime*

*Self-Esteem.* One possible factor that may encourage antisocial youth to follow a leader during group crime is self-esteem. There has been consistent evidence that low self-esteem is associated with antisocial behavior and delinquency. Youth with low self-esteem exhibit more antisocial or delinquent behaviors (Barry, Frick, & Killian, 2003; Barry, Grafeman, Adler, & Pickard, 2007), even when accounting for covariates such as supportive parenting and academic



achievement (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005). Further, Donnellan and colleagues (2005) provided opposing evidence for Baumeister's (Baumeister, Smart, & Boden, 1996) hypothesis that the link between low self-esteem and delinquency is mostly due to aggression, such that the effects of low self-esteem were significant for youth who committed either violent or non-violent acts. Further, the association between low self-esteem and delinquency appears to extend into adulthood, such that youth with lower self-esteem are more likely to be convicted of a crime in adulthood (Trzesniewski et al., 2006). It is important to note that this finding remains when accounting for gender, socioeconomic status, and adolescent depression (Trzesniewski et al., 2006).

One theory for how low self-esteem may relate to delinquency has been called the "self-enhancement hypothesis", which suggests that youth may become involved with delinquent peer groups in attempt to increase their self-esteem (Kaplan, 1980). There is varied evidence that suggests that adolescents may seek to improve their self-esteem either from delinquent peer associations or from delinquent acts. In partial support of this theory, Jang and Thornberry (1998) reported that delinquent peer associations had a self-enhancing effect for self-esteem over a one-year period, whereas delinquency demonstrated negative associations with self-esteem over the same period of time (Jang & Thornberry, 1998). In another study of the self-enhancement hypothesis, adolescent males who entered high school with low self-esteem initially had negative associations with measures of delinquency, such as theft and vandalism and delinquency at school, but this association became positive at a follow up two years later (Bynner, O'Malley, & Bachman, 1981). This change over time would be consistent with the suggestion that, for low self-esteem boys, delinquency engagement increased self-esteem. Interestingly, the association between self-esteem and delinquency remained negative over all

time points for adolescent boys with high self-esteem, suggesting that self-enhancement may be particularly important for adolescent boys with low self-esteem (Bynner et al., 1981). These findings provide at least partial support for the notion that youth may engage in delinquency and delinquent peer associations to improve self-esteem.

Taken together, this research suggests that associations with delinquent peers may function as an attempt to overcome low self-esteem (Jang & Thornberry, 1998). Importantly, whereas low self-esteem has been related to delinquency and antisocial behavior, it has not been significantly associated with CU traits, although it trends in the negative direction (Barry et al., 2003). Despite the inconsistent empirical evidence for the association between self-esteem and CU traits, theory suggests that youth with high levels of CU traits would demonstrate higher levels of self-esteem. Thus, this explanation is not likely to explain the antisocial behavior of those with high levels of these traits. Further, another explanation for why low self-esteem may lead to more peer delinquency in those low on CU traits is that it could make the adolescent more susceptible to peer influence.

*Resistance to Peer Influence.* Resistance to peer influence has traditionally been measured as a youth's susceptibility or resistance to antisocial behaviors and deviant peers (Steinberg & Silverberg, 1986; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). As such, there are a number of studies examining peer influence on antisocial behavior across adolescence. These studies generally suggest a curvilinear trend such that susceptibility to peer influence on antisocial behavior reaches its peak in mid-adolescence and then declines (Berndt, 1979; Steinberg & Silverberg, 1986). That is, Steinberg and Silverberg (1986) found that while both self-reliance and emotional autonomy generally increased from grade 5 to grade 9,

resistance to peer influence on antisocial behavior decreased until grade 9. In grade 9, resistance increased suggesting a curvilinear trend for specifically antisocial peer influence.

Importantly, Steinberg and colleagues (2007) have suggested that resistance to peer influence extends beyond whether or not an adolescent is susceptible to antisocial peers influence and should include all aspects of peer influence, such as encouragement to participate in neutral and prosocial behaviors (Steinberg & Monahan, 2007; Sumter et al., 2009). In general, adolescence is a period in which susceptibility to peer influence seems to be quite strong and influential to a person's behavior (Steinberg & Monahan, 2007).

However, there does appear to be some individual variation in the degree of susceptibility to peer influences and those who show higher degrees of susceptibility to peers appear to be more influenced by deviant peers (i.e., socialization effects; Monahan et al., 2009). Specifically, adolescents who show higher degrees of susceptibility to peers are influenced by peers for a longer period across development (Monahan et al., 2009). Further, this susceptibility may be influenced by the child's levels of CU traits. As noted previously, Kerr and colleagues (2012) reported that those low on CU traits were more susceptible to the influence of delinquent peers. The reasons for this greater influence of peers in those low on CU traits has not been directly tested. However, it is possible that adolescents with high levels of CU traits may show greater resistance to peer influence because of their interpersonal style that is described as callously using others for their own gain, being unconcerned about the emotions of others, and lacking empathy and guilt (Frick, 2009). As a result, their behavior may be less motivated by prosocial and affiliative motives (e.g., desire to be accepted by one's peers). In support of this possibility, the level of CU traits in adolescents are relatively unaffected by peers factors, such that exposure to delinquent or prosocial peers did not significantly change the level of CU traits in boys over a

seven-year period (Pardini & Loeber, 2008). However, these findings, while suggestive, do not directly test whether CU traits are associated (negatively) with susceptibility to peer influence.

### *Current Study*

To summarize, research suggests that adolescents are more likely to commit crimes in groups than as individuals. Consequently, understanding the group processes, which operate during juvenile crime, is an important area of study and these group processes may be influenced by an adolescents' interpersonal style. Despite some early suggestions to the contrary, adolescents with callous-unemotional (CU) traits have demonstrated more affiliation with delinquent peers than their non-CU counterparts and tend to commit crimes in groups rather than alone (Goldweber et al., 2011; Kimonis et al., 2004). Although it is known that adolescents with CU traits may be more likely to offend in groups, they may still differ from other adolescent offenders in the roles they play during group crimes.

One critical question is whether CU traits are associated with leadership roles during group crime. Although this has not been tested directly, those with CU traits show several characteristics that may make them more likely to take a leadership role, such as being more skilled at planning crimes and being more skilled at manipulating peers, especially vulnerable peers into committing crimes. Further, there are several factors which may make those without CU traits more vulnerable to this influence compared to those with CU traits (i.e., may mediate the relationship between CU traits and leadership in crimes), such as susceptibility to peer influence and low self-esteem. The mediation can be conceptualized in two ways. The first way is that individuals that are low on CU traits may show lower self-esteem and be more susceptible to peer pressure and influence, and therefore may play more of a follower role during group crime. The second way is that by having high levels of CU traits, these youth will be more likely

to lead during group crime because these youth will have higher self-esteem and be more resistant to peer influence compared to their low-CU trait peers. Unfortunately, the influence of CU traits on the roles that adolescents tend to take part in group crimes has not been tested directly.

Therefore, to advance this area of research, several hypotheses were tested in a large multi-site sample of adolescents who were arrested for crimes of moderate severity. First, it was hypothesized that the majority of youth's index offense crimes would be committed with others (i.e., group crimes). Second, it was hypothesized that CU traits would be associated with a tendency to have more of a leadership role in group crimes. This leadership role would include actually identifying oneself as the leader in the commission of crimes, as well as other aspects of the crime, such as instigating the offense, showing more planning in the offense, taking responsibility for the offense, and being the oldest offender in the group. Third, the association between CU traits and the various aspects of leadership was predicted to be mediated by self-esteem and resistance to peer influence. This mediational association is depicted in Figure 1. As illustrated in this figure CU traits were hypothesized to be positively correlated with the various aspects of leadership during the crime, as well as self-esteem and resistance to peer influence. Both self-esteem and resistance to peer influence were predicted to be positively correlated with leadership during group crime. Importantly, the association between CU traits and leadership during group crime was predicted to be mediated by self-esteem and resistance to peer influence.

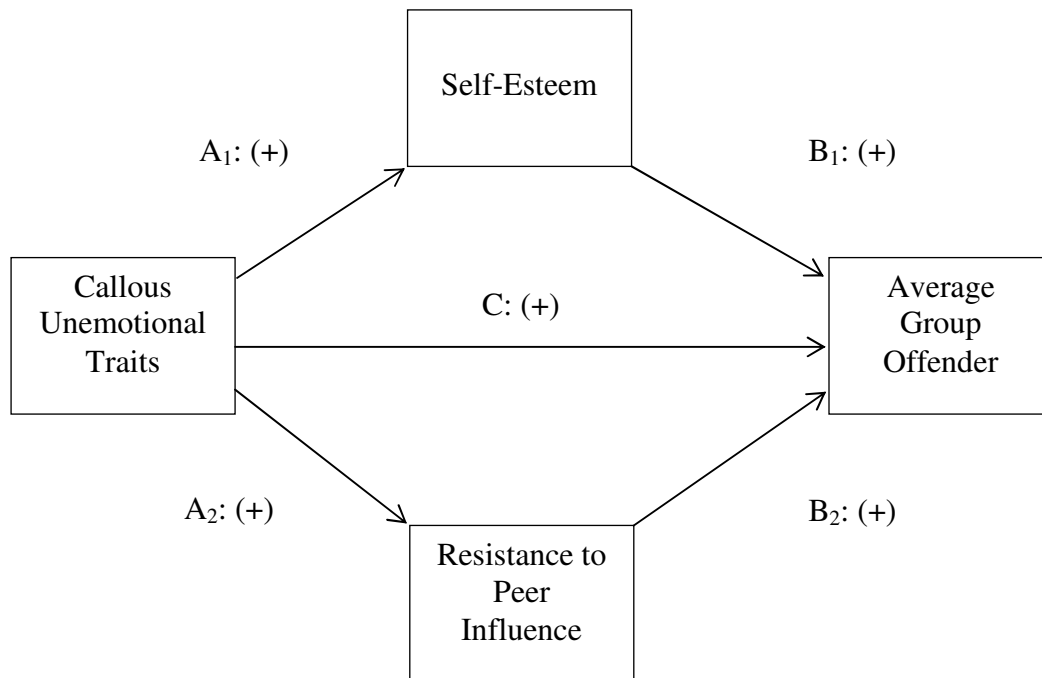


Figure 1. Theoretical model of the present study, the relationship between CU traits and Leadership during group crime is mediated by Resistance to Peer Influence and Self-Esteem.

## Methods

### *Participants*

The current sample were the first 614 participants in the Crossroads Study, which draws from the juvenile justice systems of Philadelphia, PA; Orange County, CA; and Jefferson Parish, LA. To be eligible for the Crossroads Study, juveniles have to be first time male offenders, be English speakers between the ages of 13 to 16 at the time of arrest, and have an eligible offense. The primary goal of the Crossroads Study is to examine the effects of informal versus formal processing for charges that show a substantial probability of being processed either way. Therefore, to determine the eligible charges for the study, data were aggregated from each site's juvenile court system for the previous four years and analyzed to determine the proportion of youths with each charge who were formally processed. Eligible charges were mid-range

offenses, such that the charges were relatively likely to be processed either formally or informally and not exclusively processed through one route. Further, charges were excluded if they were differentially processed for youth at different ages (e.g., formally processing 16 year olds over 80% of the time but not for other ages). Due to the differences in crimes and practices for processing at each site, there are separate eligible charge lists for each site. The eligible charges for all three sites are provided in Table 1. Some commonalities exist between sites, such that a variant of theft was included at each site (theft and theft of goods in Jefferson Parish; petty theft in Orange County; and theft in Philadelphia).

Table 1.

*Eligible charges for Jefferson Parish, Orange County, and Philadelphia Crossroads Study sites*

Description: Jefferson Parish Charges	Description: Orange County Charges	Description: Philadelphia Charges
Criminal Mischief	Assault	Aggravated Assault
Disturbing the Peace	Battery	Burglary
Hit and Run Driving	Burglary	Criminal Mischief
Illegal Possession of Stolen Things	Drug Possession	Indecent Assault
Possession of a CDS Schedule I	Obstruction of Public Officer	Marijuana – Personal Use
Simple Battery	Petty Theft	Table 1 continued
Simple Criminal Damage to Property	Possession of Switchblade Knife	Possession Instrument of Crime
Theft	Public Fighting	Possession w/Intent to Deliver Controlled Substance
Theft of Goods	Vandalism	Possession of Controlled Substance
		Possession of Marijuana
		Robbery
		Simple Assault
		Terroristic Threats
		Theft
		Weapon on School Property

Across all three sites, formal processing is defined as when a youth is given a petition for delinquency by the court and the charges are not dismissed or not found guilty. There are various outcomes at each of the sites that fall under the branch of formal processing such as an Informal Adjustment Agreement (IAA), a Deferred Disposition Agreement (DDA), or Adjudication. Figure 2 presents the juvenile justice system in Jefferson Parish, which begins at the District Attorney's (DA) office, in which the office initially decides whether to accept or reject a charge for a youth. Once the charge is accepted, the DA's office then decides whether to divert the youth into diversion programming (i.e. informal processing) or pursue one of the formal processing options.

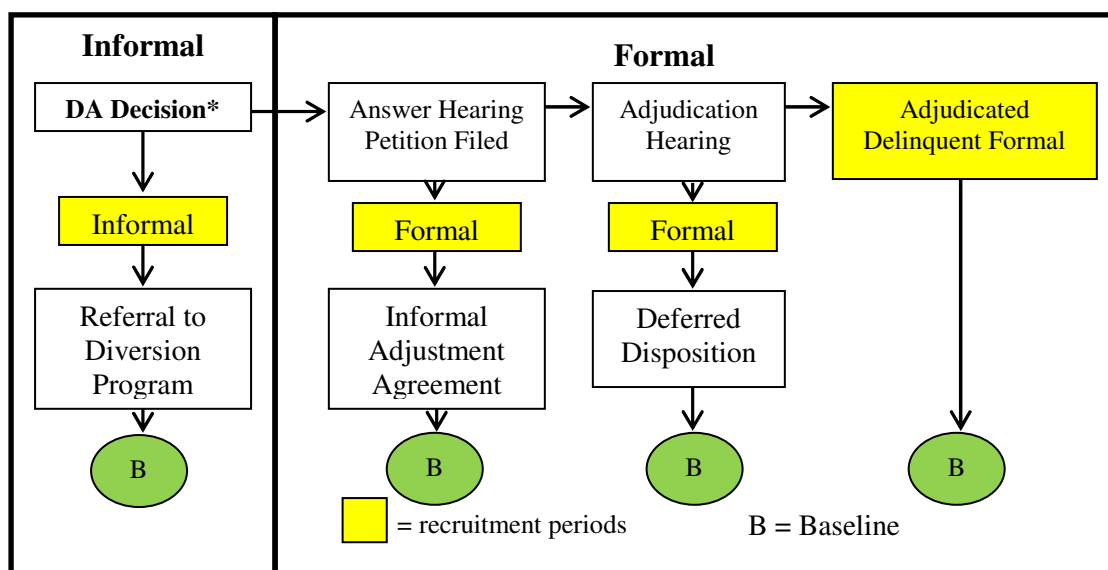


Figure 2. The juvenile justice system and recruitment process for the Crossroads study at the Jefferson Parish site.

Participants mean age was 15.27 (SD = 1.31), 77 participants were age 13 (12.5%), 97 were age 14 (15.8%), 160 were age 15 (26.1%), 147 were age 16, 132 were age 17 (21.5%), and 1 participant (.1%) was age 18 at the first interview. Based on all three locations, 71.65% of individuals eligible to participate enrolled in the study. The sample is predominately



Hispanic/Latino (44.3%) and African American (41.0%), followed by Caucasian/Non-Hispanic (12.9%), Other/Non-Hispanic (1.5%), and Native American/Non-Hispanic (.3%). Participants average Wechsler Abbreviated Scale of Intelligence (WASI-II; Wechsler, 1999) Full-Scale Intelligence Quotient (FSIQ) as estimated by two sub-tests (Vocabulary and Matrix Reasoning) was 88.85 (SD = 12.40).

### *Measures*

*Inventory of Callous-Unemotional Traits* (ICU; Kimonis et al., 2008). The ICU is a 24-item instrument derived from the Antisocial Process Screening Device (APSD; Frick & Hare, 2001), which is rating scale commonly used to assess callous-unemotional traits in children and adolescents (Frick & Hare, 2001). The APSD items utilized for the ICU consistently loaded most highly on the CU factor across samples and for each item three positively- and three negatively-worded items were created (Kimonis et al., 2008). Respondents utilize a four-point Likert scale, which includes “0” (Not at all true), “1” (Somewhat True), “2” (Very True), and “3” (Definitely True). Scores are calculated by reverse scoring the positively worded items and summing the items for a total score. The ICU demonstrates a three-bifactor structure, meaning there are three relatively independent factors and that these three factors relate to a more general callous-unemotional factor (Essau, Sasagawa, & Frick, 2006; Fanti, Frick, & Georgiou, 2009; Kimonis et al., 2008; Roose, Bijttbier, Decoene, Claes, & Frick, 2010). The three factors that comprise the ICU are Uncaring which includes items such as, “I work hard on everything I do” (reverse coded), Callousness which includes items such as, “I do not care who I hurt to get what I want”, and Unemotional which includes items such as “It is easy for others to tell how I am feeling” (reverse coded). This factor structure has been found in adolescent offenders in the United States (Kimonis et al., 2008) as well as in non-referred samples of adolescents in

Germany (Essau et al., 2006), Belgium, (Roose et al., 2010), and Greek Cyprus (Fanti et al., 2009).

Reliability for the self-report ICU as measured by internal consistency has been in the “adequate” to “good” range on the individual subscales as well as the total score (e.g., Callousness  $\alpha = .79$ , Uncaring  $\alpha = .77$ , Unemotional  $\alpha = .73$ , Total Score  $\alpha = .83$ ; Roose et al., 2010). The ICU correlates positively with antisocial behavior and negatively associated with prosocial behavior (Essau et al., 2006; Fanti et al., 2009; Kimonis et al., 2008; Roose et al., 2010). Within the current sample, internal consistency for the total scores was acceptable ( $\alpha = .77$ ), with a mean and standard deviation similar to that found in other studies of justice-involved youth (e.g., Kimonis et al., 2008;  $M = 26.19$ ;  $SD = 8.26$ ).

*Leadership during Group Crime.* A set of questions was developed to assess the participants role in the index offense (i.e., the offense for which he was arrested and which led to his inclusion in the study), as well as his self-reported role in past crimes as well. Because participants had to be first-time offenders to be included in the study, past crimes were acts which did not come to the attention of the juvenile justice system. Participants were asked nine questions about their index offense and general criminal behavior. From the nine questions, eight variables were created to represent participation in group crimes, leadership in the index offense, and leadership in all offenses.

Group crime variables include whether the participant’s index offense was committed with others and whether the participant’s general criminal style was to commit crimes in groups. Specifically, to assess participants’ general criminal style they were asked whether they “Lead – I tend to be the leader of a group when I commit crimes”, “Follow – I tend to do what the other people in my group are doing when I commit crimes”, “NA – Never committed crimes with

others”). Those youth who responded that they generally assumed either a leader or follower role during group crimes were coded as engaging in group offending and their general tendency to be a leader or follower in these crimes was coded based on this response.

Index offense leadership variables included whether the index offense was the participant’s idea, whether the participant knew the offense was going to occur ahead of time, and whether the participant admitted to “being responsible for what happened”. If the participant’s index offense was committed with others, he was asked to provide information about each of his co-offenders. Two variables were derived from the co-offender ages, one determined whether the participant was the same age or older than all other co-offenders and one variable denoted whether any of the participant’s co-offenders were age 21 or older.

#### *Potential Mediators*

*Resistance to Peer Influence* (RPI; Steinberg & Monahan, 2007). The RPI was designed to assess the amount individuals’ act autonomously during peer interactions (Monahan et al., 2009; Steinberg & Monahan, 2007). Participants read two conflicting scenarios (e.g., “Some people say things they don’t really believe because they think it will make their friends respect them more”, versus “Other people would not say things they didn’t really believe just to get their friends to respect them more”). Participants then select which scenario is more like them, and whether it is “sort of true of me” or “really true of me”. There are ten scenario pairs for the participant to answer and these assess different areas of influence (e.g., doing something the individual knows is wrong, fitting in with friends). Higher scores indicate more resistance (less susceptibility) to peer influence (Monahan et al., 2009; Steinberg & Monahan, 2007). The RPI requires a minimum of eight responses to the ten items to create a mean score. The mean within the current sample ( $M = 3.01$ ,  $SD = .57$ ) is similar to the means found utilizing the same age

range in other studies (Steinberg & Monahan, 2007). Reliability, as assessed by internal consistency, has shown to be adequate in previous samples ( $\alpha = .73$ ; Monahan et al., 2009) as well as in the current sample ( $\alpha = .72$ ). The PRI has demonstrated significant negative associations with measures of impulsivity and antisocial risk taking (Steinberg & Monahan, 2007).

*The Rosenberg Self-Esteem Scale* (RSE; Rosenberg, 1989). The Rosenberg Self-Esteem Scale is one of the most widely used measures of global self-esteem. The RSE consists of 10 items, five of which are reverse coded, that assess feelings of positive self-evaluation, self-acceptance, and self-respect and includes items such as, “I am able to do things as well as most other people” and “All in all, I am inclined to feel that I am a failure” (reverse coded). The participant provides ratings for items on a 4-point Likert scale, “0” (Strongly Disagree), “1” (Disagree), “2” (Agree), and “3” (Strongly Agree). Reliability, as assessed by internal consistency, has shown to be adequate to excellent in a variety of samples in a New Zealand birth cohort ( $\alpha = .64$ ), American early adolescents from the community ( $\alpha = .81$ ), and American undergraduate students ( $\alpha = .90$ ; Donnellan et al., 2005). In the current sample, the mean was 31.33 ( $SD = 4.67$ ) with good internal consistency ( $\alpha = .84$ ). Self-esteem as measured by the RSE generally demonstrates negative associations with a variety of behaviors such as aggression ( $r = -.30$ ) and delinquency ( $r = -.35$ ), and is positively associated with narcissism ( $r = .32$ ; Donnellan et al., 2005).

### *Procedures*

Institutional Review Board approval was obtained before data collection started. Youth that were considered to be formally processed (e.g., adjudicated) are recruited after their adjudication hearing information was entered into the case-management database maintained by

the Jefferson Parish Juvenile Court. Police reports were provided by the Jefferson Parish District Attorney's (DA) office on all diverted youth, from which eligible youth were contacted and recruited. Both eligible youth and his parent or legal guardian were contacted by the Project Coordinator or Lead Interviewer and provided a description of the study. The parent was then asked to give informed consent and, as part of the consent procedures, they were told the incentives for participation (i.e., \$50.00), and told that participation in the study would in no way influence the youth's treatment by the juvenile court or the DA's office. Also, the parent and youth were informed that the research project had obtained a Certificate of Confidentiality from the Department of Justice, which allowed the research information to be protected from being subpoenaed for use in legal proceedings. Once parental or guardian consent was obtained, and interview time with the youth was scheduled. Youth assent was obtained at the initial interview.

Interviews were conducted at a location convenient to the youth, which ranged from his home, a place in the community, or the University of New Orleans. Interviews were conducted by trained interviewers utilizing an interviewing program on laptop computers and lasted approximately 2 ½ to 3 hours. Interviewers received extensive training which included learning the general goals and design of the study, safety procedures, recruitment and tracking of participants, obtaining consent/assent, issues relevant to maintaining and breaking confidentiality, administration of the interview, as well as administration of intelligence testing and other behavioral tasks. Before administering an interview with a participant, interviewers were required to pass a classroom-based test, as well as exhibit proficiency in administration techniques, participate as a secondary interviewer on two interviews with participants, and pass a check-out interview. In addition, the Lead Interviewer would periodically accompany each

interviewer on and interview and provide feedback to ensure standardization across all interviewers.

The interview was administered from a laptop with an interviewing program that included all of the items and measures for convenience and standardized administration. To control for reading ability, interviewers read out loud all items to the participant. Prompts indicated the appropriate time to administer the WASI. The participants were then thanked for their participation and paid \$50 in cash and later sent a letter thanking them for their participation.

## Results

### *Preliminary Analyses.*

The distribution of study variables are provided in Table 2. The distribution of the main predictors of offending behavior (i.e., callous-unemotional traits, self-esteem, resistance to peer pressure) were examined for extreme skew and kurtosis that would prevent the use of parametric analyses and no significant deviations from normality were found. Percentages are provided for dichotomous variables. Although the majority of the youth 60.1% reported committing the index offense with a group (Group Offense), which supports the first hypothesis, the amount that reported committing the crime alone was greater than expected (39.9%). Further, 32.2% of participants responded that the index offense was their idea (Offense Idea). Of those participants that stated they committed the offense charged with ( $n = 450$ ), 23.6% stated they knew ahead of time that the offense was going to occur (Foreknowledge). The majority of participants responded that they were responsible for the offense that occurred (65.9%). Few participants responded that they had a co-offender aged 21 or older (3.1%). However, for participants that did commit crimes with others ( $n = 369$ ), 48.2% reported that they were older or the same age as

their co-offenders. Forty-two percent of participants stated that they typically committed delinquent behaviors in a group (General Group Offenders). Of those who said that they have committed crime in groups (n = 258), 46.5% stated that they typically were leaders (General Lead Offenders).

Table 2.

*Distribution and Psychometric Properties of Study Variables*

	Valid N	M/%	SD	Min - Max	$\alpha$	Skew	Kurtosis
<b>Demographics</b>							
Age	614	15.27	1.31	13 – 18	-	-.24	.10
Hispanic	614	44.3 %	-	0 – 1	-	-	-
African American	614	44.1 %	-	0 – 1	-	-	-
FSIQ	614	88.85	12.40	55 – 128	-	.04	.21
Verbal T Score	614	40.92	10.10	20 – 69	-	.12	-.36
Reasoning T Score	614	43.96	10.00	20 – 66	-	-.57	-.14
<b>Predictors of Offending</b>							
ICU	614	26.19	8.26	0 – 52	.77	-.04	-.17
RPI	612	3.01	.57	1 – 4	.72	-.52	-.17
SE	614	31.33	4.67	13 – 40	.84	-.16	.09
<b>Group Offending</b>							
Group Offense	614	60.1 %	-	0 – 1	-	-	-
General Group Offender	614	42.0 %	-	0 – 1	-	-	-
<b>Index Offense Leadership</b>							
Offense Idea	612	32.2 %	-	0 – 1	-	-	-
Foreknowledge	450	23.6 %	-	0 – 1	-	-	-
Responsibility	613	65.9 %	-	0 – 1	-	-	-
Oldest Offender	369	48.2 %	-	0 – 1	-	-	-
Co-offender $\geq$ 21	614	3.1 %	-	0 – 1	-	-	-
<b>Lifespan Leadership</b>							
General Lead Offender	258	46.5 %	-	0 – 1	-	-	-

Note. FSIQ = Full-scale Intelligence Quotient, ICU = Inventory of Callous-Unemotional Traits, RPI = Resistance to Peer Influence, SE = Self-Esteem. The variation in sample size for RPI scale is due to participants not answering a minimum of seven items. Offense Idea and Responsibility sample size variations are from either refusal or “don’t know” responses. Foreknowledge sample size excluded participants who answered they did not commit the crime. Oldest Offender excluded participants who committed the crime alone (Alone Offense). General Lead Offender excluded participants who were designated general alone offenders (General Group Offender).

Next, correlations between the main variables of interest and key demographic variables were examined to determine if any demographic variable should be controlled in subsequent analyses. These correlations are provided in Table 3. Participants' age was only associated with one of the main study variables, self-esteem, but showed several associations with index offense leadership variables. Specifically, age was positively associated with developing the offense idea ( $r = .12, p < .01$ ), having knowledge of the crime ahead of time ( $r = .11, p < .05$ ), taking responsibility for the offense ( $r = .13, p < .01$ ), and having a co-offender age 21 or older ( $r = .11, p < .01$ ). On the other hand, self-identifying as Hispanic was associated with more CU traits ( $r = .20, p < .001$ ), less RPI ( $r = -.15, p < .001$ ), lower SE ( $r = -.23, p < .001$ ), committing the offense in a group ( $r = .16, p < .001$ ), being an general group offender ( $r = .10, p < .05$ ), and not taking responsibility for the charged offense ( $r = -.12, p < .01$ ). Similarly, intelligence was associated with three of the main study variables, and the association appeared to be driven by the verbal intelligence t-score. That is, overall intelligence was negatively associated with CU traits ( $r = -.09, p < .05$ ), and positively associated with both RPI ( $r = .13, p < .01$ ), SE ( $r = .17, p < .001$ ), taking responsibility for the offense ( $r = .09, p < .05$ ), and being the oldest offender in a group crime ( $r = .12, p < .05$ ). Therefore, the self-identifying as Hispanic and the verbal t-score were treated as covariates in all subsequent analyses.



Table 3.

*Zero-Order Correlations between Main Study Variables and Demographic Variables.*

	Age	Hispanic	FSIQ	Verbal T Score	Reasoning T Score
<b>Predictors of Offending</b>					
ICU	-.02	.20***	-.09*	-.10*	-.04
RPI	.07	-.15***	.13**	.09*	.11**
SE	.09*	-.23***	.17***	.18***	.10*
<b>Group Offending</b>					
Group Offense	.07	.16***	.06	.01	.08*
General Group Offender	-.00	.10*	.01	.01	-.00
<b>Index Offense Leadership</b>					
Offense Idea	.12**	-.05	-.08	-.06	-.08
Foreknowledge	.11*	.01	-.02	-.00	-.05
Responsibility	.13**	-.12**	.09*	.14**	.01
Oldest Offender	.10	.09	.12*	.08	.09
Co-offender $\geq 21$	.11**	.01	-.02	-.03	-.00
<b>Lifespan Leadership</b>					
General Lead Offender	.07	-.08	-.05	-.07	-.03

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ , all other values not significant.

#### *Predictors of Group Offending*

Partial correlations were conducted among all study variables controlling for Hispanic ethnicity and verbal intelligence and these are provided in Table 4. First, committing the index offense in a group was not associated with CU traits, RPI, or SE. However, general group offending was positively associated with CU traits ( $r = .17, p < .001$ ) and negatively associated with RPI ( $r = -.09, p < .05$ ), and SE ( $r = -.11, p < .001$ ). Thus, those who reported that they typically are leaders when committing delinquent acts were higher in CU traits, as predicted. However, contrary to predictions, they were less resistant to peer pressure and showed lower levels of self-esteem.

Table 4.

*Partial Correlations among Main Study Variables Controlling for Hispanic Ethnicity and Verbal Intelligence.*

	1	2	3	4	5	6	7	8	9	10	11
<b>Predictors of Offending</b>											
1. ICU	-	<b>-.16</b>	<b>-.30</b>	-.02	<b>.17</b>	<b>.08</b>	.03	.04	-.01	-.05	<b>.16</b>
2. RPI		-	<b>.18</b>	-.02	<b>-.09</b>	.03	.05	-.03	.03	.03	<b>.13</b>
3. SE			-	.06	<b>-.11</b>	.02	.03	-.01	.05	-.06	<b>.13</b>
<b>Group Offending</b>											
4. Group Offense				-	.07	<b>-.25</b>	-.05	<b>-.18</b>	a	<b>.15</b>	<b>-.17</b>
5. General Group Offender					-	.07	-.03	.07	-.00	-.06	b
<b>Index Offense Leadership</b>											
6. Offense Idea						-	<b>.13</b>	<b>.39</b>	-.03	.02	<b>.24</b>
7. Foreknowledge							-	.07	.09	.03	-.01
8. Responsibility								-	.00	.07	<b>.23</b>
9. Oldest Offender									-	<b>-.23</b>	-.03
10. Co-offender $\geq 21$										-	.04
<b>Lifespan Leadership</b>											
11. General Lead Offender											-

Note. ICU = Inventory of Callous-Unemotional Traits, RPI = Resistance to Peer Influence, SE = Self-Esteem. Bold correlations were significant at the  $p \leq .05$  level, all other correlations were not significant. a. Correlation not applicable because participants who answered they committed the offense by themselves (Group Offense=0) did not have co-offenders. b. Correlation not applicable because participants who answered they were general lone offenders (General Group Offender=0) were not included in General Lead Offender.

#### *Predictors of Leadership in Offending*

CU traits were generally not significantly associated with the index leadership offense variables. That is, CU traits were associated with only one of the five index offense leadership variables tested. Specifically, those higher on CU traits were somewhat more likely to state that the offense was his idea (Offense Idea,  $r = .08$ ,  $p < .05$ ), but not more likely to admit to knowing the offense was going to take place, for taking responsibility for the crime, to being the oldest offender, or to having a co-offender age 21 or older. However, CU traits were positively associated with taking the lead when committing a group offense ( $r = .16$ ,  $p < .01$ ) when offenses were not limited to the index offense.

Similar results were found for both of the proposed mediators: resistance to peer pressure and self-esteem. That is, both proposed mediators were not significantly associated with any of the index offense leadership characteristics but they were significantly associated with the general offense styles. Both the RPI and SE were positively associated with being a general lead offender ( $r = .13, p < .05$  and  $r = .13, p < .05$ , respectively), but negatively associated with being a group offender ( $r = -.09, p < .05$  and  $r = -.11, p < .05$ , respectively). Further, CU traits were significantly associated with the proposed mediators, RPI ( $r = -.16, p < .001$ ) and SE ( $r = -.30, p < .001$ ), although the associations were in the opposite directions from what was hypothesized. That is, higher levels of CU traits were associated with less resistance to peer pressure and lower self-esteem.

#### *Tests of Mediation.*

Only two variables met each of the prerequisites for mediation testing as outlined by Holmbeck (2002): general group offender and general lead offender. First, CU traits were associated with both variables. Second, CU traits were associated with the proposed mediators, RPI and SE, although in the opposite direction from what was predicted. Third, the RPI and SE were negatively related to being a general group offender, but positively related to being a general lead offender. Thus, further exploration of the potential mediating role of resistance to peer influence and self-esteem were conducted using partial correlations (see Figure 3).

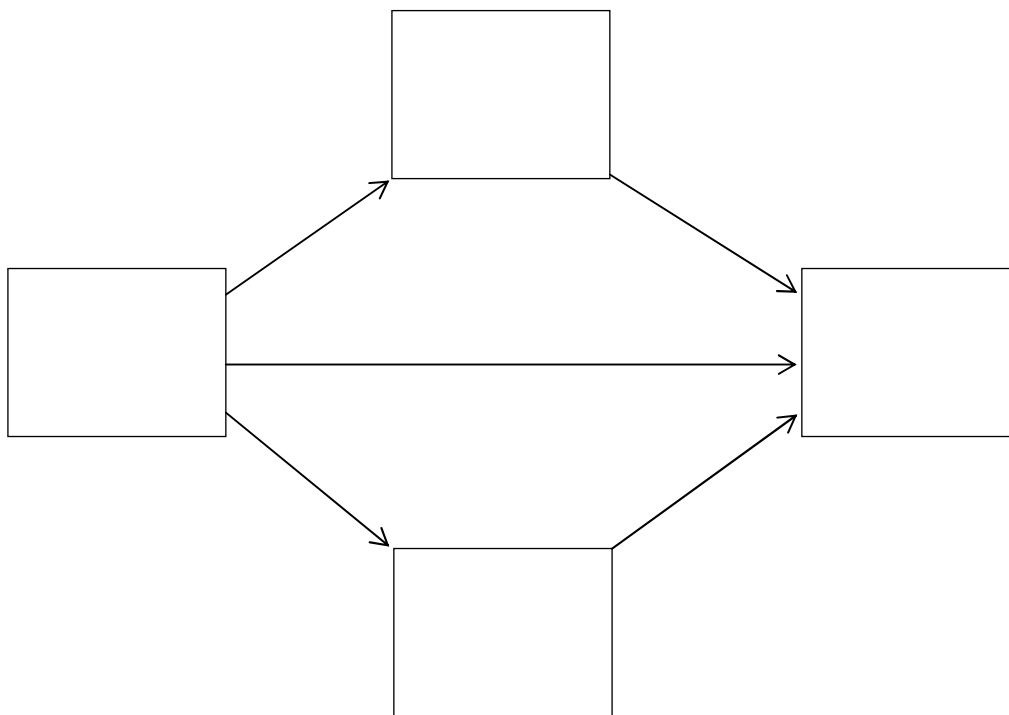


Figure 3. The mediation model tested. The relationship between CU traits and General Group Offender, when controlling for self-esteem and resistance to peer influence is in parentheses.

Contrary to what would be predicted for mediation, the correlation between CU traits and lead offender ( $r = .16, p < .01$ ) increased when controlling for RPI and SE ( $r = .23, p < .001$ ). On the other hand, the association between CU traits and being a general group offender ( $r = .17, p < .001$ ) was reduced somewhat ( $r = .14, p = .001$ ) when controlling for RPI and SE, although it remained significant. The bootstrapping method recommended by Preacher (2008) was utilized to test whether the change was sufficient to be considered partial mediation. For the bootstrapping procedure developed by Preacher and Hayes (2008), CU traits were entered as the independent variable; general group offender as the dependent variable; RPI and SE as mediators; and Hispanic ethnicity and verbal intelligence as controls. The bootstrapping procedure sampled 5000 times from the initial sample of 612 participants who had values for each of the variables (two participants did not have values for RPI as they did not answer at least eight items) to produce coefficients for each pathway, as well as point estimates and confidence

intervals for indirect effects of the proposed model. Based on these analyses, CU traits were negatively associated with RPI (coefficient =  $-.01$ ,  $t = -4.10$ ,  $p < .001$ ) and SE (coefficient =  $-.17$ ,  $t = -7.77$ ,  $p < .001$ ). However, RPI (coefficient =  $-.23$ ,  $Z = -1.48$ , Wald =  $2.19$ ,  $p = .14$ ) and SE (coefficient =  $-.02$ ,  $Z = -1.25$ , Wald =  $1.56$ ,  $p = .21$ ) demonstrated no direct effects on general group offending. On the other hand, CU traits initial total effect (coefficient =  $.04$ ,  $Z = 4.14$ , Wald =  $17.14$ ,  $p < .001$ ) and direct effect taking the mediators in to account (coefficient =  $.04$ ,  $Z = 3.36$ , Wald =  $11.29$ ,  $p < .001$ ) on general group offender were significant. Most importantly, the indirect effects (Total indirect effect point estimate =  $.007$ ; Point estimate RPI =  $.003$ , Point estimate SE =  $.004$ ) and the associated confidence intervals indicate (Bias Corrected CIs: Total =  $-.001$  to  $.015$ ; RPI =  $-.003$  to  $.012$ ; SE =  $-.001$  to  $.007$ ) did not support mediation. Specifically, the confidence intervals includes zero which indicates that the indirect effects of RPI and SE cannot be distinguished from zero.

## Discussion

The current results indicate that the majority of youth do indeed commit crime in groups, although a significantly minority (39.9 %) indicated that they generally commit delinquent behaviors with others. Further, as predicted, CU traits were associated with committing crimes in a group and with reporting being a leader in these group crimes. However, contrary to predictions, CU traits were associated with less resistance to peer pressure and lower self-esteem. Further, these variables did not account for the association between CU traits and taking a leadership role in group crimes. The implications of these key findings are discussed below.

First, although the current findings support past research suggesting that adolescents tend to commit crime in groups (Puzzanchera, 2009; Warr 2002), the proportion who reported committing crimes alone was higher than what has been found in past samples (Goldweber et al.,

2011). There are two possibilities for the current findings of relatively high rates of solely offending. First, based on Goldweber and colleagues (2011) findings, one would predict that youth may be more likely to exhibit delinquency with others early in adolescence but become more likely to offend alone over time. Given that the sample was overrepresented by youth at older ages, this may have led to higher rates of solely offending in the current sample. However, age was not associated with reduced likelihood being a group offender in this sample. Second, it may be that the type of sample affected our results. That is, the current sample consisted solely of first time offenders with crimes of moderate severity (e.g., burglary, possession of marijuana) and, it may be that group offending is less prevalent for these types of crime.

Interestingly, although youth with high levels of CU traits were more likely to report a tendency to commit offenses in groups when considering all their past offending behaviors, this was not found for their index offense. This finding supports previous research showing that youth with high levels of CU traits are highly likely to have deviant peers (Kimonis et al., 2004) and are more likely to commit crimes in groups (Goldweber et al., 2011). However, this finding also suggests that it is important to consider an adolescent's entire history offending behavior, even behavior that may not have come to the attention of the juvenile justice system.

This issue of considering the adolescent's entire history of offending behavior is also evident in our test of whether CU traits were associated with taking a leadership role in group crimes. That is, this association was found considering the adolescent's history of all offending behavior but it was not consistently associated with characteristics of the child's index offense. The one exception was that youth with CU traits were more likely to state that they came up with the idea to commit the index offense. However, other features of taking a leadership role in the crime, as suggested by Warr's (2002) definition of taking an "instigator role", such as being

older than other co-offenders, having foreknowledge of a crime, or taking responsibility for the crime were not associated with CU traits. One potential explanation for these findings is that because youth with CU traits may suggest the idea for committing crimes, this may lead them to perceive themselves as being the “leader”, irrespective of other aspects of the group offense.

Taken together, these results do provide some support for the role of CU traits in the group process involved in adolescent crimes committed with peers. That is, those higher on CU traits are more likely to consider themselves as leaders in committing group delinquent acts. However, the hypothesized mediational role of resistance to peer influence and self-esteem was not supported. That is, contrary to predictions, CU traits were negatively associated with both self-esteem and resistance to peer pressure, which is inconsistent with past research. One explanation for these findings relates to differences in methodology. That is, Kerr and colleagues (2012) utilized both the self-report of peer influence and their peers’ report of their influence, which may have led to the differences in findings. Another possibility is that the inclusion of other forms of influence (i.e., prosocial, neutral) might change the overall associations between CU traits and resistance to peer influence. That is, previous research has generally focused only on antisocial influences (Kerr et al., 2012; Sumter et al., 2009), whereas the current measure of resistance to peer influence included prosocial, neutral, and antisocial influence from peers. To test this possible explanation, the association between CU traits and peer influence in the current sample was tested separating out the antisocial and non-antisocial items and similar relationships with CU traits were found ( $r = -.16, p < .001$ ,  $r = -.14, p = .001$ , respectively). Thus, at least in the current sample, youth with CU traits were less resistant to peer influence regardless of the context of the influence.

In terms of CU traits, the proposed link between CU traits and higher levels of self-esteem was based largely on past studies showing significant correlations with measures of narcissism and there may be important differences between high self-esteem and narcissism (Barry et al., 2003). That is, there are two types of narcissism, adaptive and maladaptive. Adaptive narcissism is considered to be derived from viewing oneself as having authority and being self-sufficient, whereas maladaptive narcissism focuses on exploiting others, desire for attention from others, and feelings of entitlement (Barry et al., 2003; Barry, Frick, Adler, & Grafeman, 2007). As such, adaptive narcissism, which is likely to correspond more closely to self-esteem, has not demonstrated an association with CU traits, whereas maladaptive narcissism has been positively correlated with CU traits ( $r = .28, p < .01$ ; Barry et al., 2003). Thus, it may be that the association between CU traits and maladaptive narcissism which may influence youth with CU traits to claim leadership during group crimes. That is, the desire to be the center of attention and willingness to exploit others may lead the youth to take a leadership role in group crime or at least claim leadership.

The possibility that youth with high levels of CU traits may just be claiming to take on a leadership role regardless of how they behaved during the crime is one of the current study's limitations. Because the nature of the study is entirely self-report, it is not possible to distinguish youth that claim they act as leaders during group crime from youth that both claim and actually demonstrate leadership during group crimes, or any of the other outcomes examined. That is, the association between CU traits and leadership during group crime may be entirely driven by these youth's desire to claim leadership and not based on actions performed (Babiak & Hare, 2006). In addition to this limitation, several factors limit the generalizability of the findings from the current sample to other populations. Specifically, the current sample is rather unique because it



is limited to certain mid-level offenses for each location, and thus does not include offenses that are very minor (e.g., ticketable offenses such as littering) or exceptionally serious and violent (e.g., murder). As previously mentioned, the sample is very ethnically diverse, such that more than 85% of the sample identified as either African American or Hispanic/Latino. Further, the sample is restricted to males who are experiencing contact with the juvenile justice system for the first time. As such, it is unknown whether these findings would generalize to youth with more serious offenses, other ethnicities, girls, or the general community.

Another limitation of the current study is its correlational nature. For example, the current study cannot distinguish whether it is CU traits that lead to taking a leadership role in crime or whether repeated instances of leading others in antisocial acts leads an adolescent to have a more cold and callous attitudes towards others. Further, it is important to note that while CU traits were significantly associated with being a group offender, with coming up with the idea to commit the offense, and identifying oneself as a lead offender during group crime, these associations were relatively small ( $r$ 's range from .08 to .17). Therefore, the amount of variance in these measures accounted for by CU traits was quite small.

Despite these limitations, the current study has several implications for future research. Most importantly, future research needs to further investigate the mechanisms which account for the association between CU traits and offending characteristics, such as taking or reporting that they take a leadership role in group crimes. As noted above, one possible direction of this research is to consider the role of narcissism. Further, it is important for future research to consider whether the co-offenders of youth high on CU traits would corroborate their report that they indeed develop the ideas for crimes and act as leaders during crime. Finally, it would be important for longitudinal research to consider whether the presence of CU traits predict later

group offending or taking a leadership role in group offending, to determine which characteristic precedes the other.

Further, as youth with high levels of CU traits view themselves as developing the ideas for crimes and taking a leadership role during group crimes, effective treatments for these youth in the juvenile justice system is imperative. Importantly, there is emerging evidence that youth with a CU presentation do respond to individually tailored and intensive treatments.

Specifically, children (age 6 to 11) with Conduct Disorder (CD) and CU traits that received a modular intervention which focused on interventions at multiple levels (e.g., medication management, cognitive-behavioral therapy, parent training, school consultation, peers, crisis management) demonstrated similar improvements as other children with CD without a CU presentation (Kolko & Pardini, 2010). Moreover, Caldwell and colleagues demonstrated that interventions designed for the unique characteristics of youth with CU traits are can be effective within the juvenile justice system (Caldwell, Skeem, Salekin, & VanRybroek, 2006). That is, adolescent offenders with CU traits responded positively to an intensive treatment program in a secure facility that focused on the self-interests of the adolescent using reward-oriented approaches in addition to teaching empathy skills (Caldwell et al., 2006). Importantly, youth that received this intensive intervention tailored for individuals with CU traits were less likely to recidivate in the following two years than other adolescent offenders with CU traits that received a standard intervention. Given their potential leadership role in crimes, such a reduction in recidivism for those high on CU traits could have disproportionately greater influences on reducing juvenile offending by reducing their willingness to involve other adolescents in crimes as well.

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Appendix

***University Committee for the Protection  
of Human Subjects in Research  
University of New Orleans***

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*Campus Correspondence*

Principal Investigator: Paul Frick

Date: December 22, 2010

Protocol Title: “Crossroads: Formal versus informal processing in the juvenile justice system”

IRB#: 02DEC10

Your proposal was reviewed by the full IRB. The group voted to approve your proposal pending that you adequately address several issues. Your responses to those issues have been received and you have adequately addressed all of the issues raised by the committee. Your project is now in compliance with UNO and Federal regulations and you may begin conducting your research.

Please remember that approval is only valid for one year from the approval date. Any changes to the procedures or protocols must be reviewed and approved by the IRB prior to implementation. Use the IRB number listed on this letter in all future correspondence regarding this proposal.

If an adverse, unforeseen event occurs (e.g., physical, social, or emotional harm), you are required to inform the IRB as soon as possible after the event.

Best of luck with your project!  
Sincerely,

Robert Laird, Ph.D., Chair  
Committee for the Protection of Human Subjects in Research

# Project Report and Continuation Application

(Complete and return to IRB, GP 2001. Direct questions to IRB administrator Jessica Grande 280-5013 or IRB Chairman Bobby Laird at 280-5454)



THE UNIVERSITY of  
NEW ORLEANS

Committee for the Protection of  
Human Subjects in Research  
GP 2006  
Phone: 504-280-6013  
Fax: 504-280-6049  
humansubjects.uno.edu

IRB # 02Dec10 Current approval expires on: Jan 3, 2012

Review Type: Full Risk Factor: Minimal

PI: Paul Frick Department: Psychology Phone: 504-280-6012

Co-Investigators:

Project Title: Crossroads: Formal vs. Informal Processing in the Juvenile Justice System

Please read the entire application. Missing information will delay approval!

I. PROJECT FUNDED BY: John D. and Catherine T. MacArthur Foundation UNO Proposal #

II. PROJECT STATUS: Check the appropriate box and complete the following:

- ☒ 1. Active, subject enrollment continuing; # of subjects enrolled: 44
- ☐ 2. Active, subject enrollment complete; work with subjects continues.
- ☐ 3. Active, work with subjects complete; data analysis in progress.
- ☐ 4. Project stat postponed. New start date:
- ☐ 5. Project complete. end date:
- ☐ 6. Project cancelled. No human subjects used.

III. PROTOCOL: Check one.

- ☒ Protocol continues as previously approved
- ☐ Changes are requested\* List (on separate sheet) any changes to the approved protocol.

IV. UNEXPECTED PROBLEMS: (did anything occur that increased risks to participants?)

Number of events since study inception: 0 since last report: 0

Have there been any previously unreported events? Y?N No

If such events occurred, describe them (on a separate sheet) and how they affect risks in your study.

V. CONSENT FORM AND BENEFIT RATIO

Does new knowledge or adverse events change the risk/benefit ratio? Y?N N

Is a corresponding change in the consent form needed? Y/N N

VI. ATTACH A BRIEF, FACTUAL SUMMARY of project progress/results to show continued participation of subjects is justified; or to provide a final report on project findings.

VII. ATTACH CURRENT CONSENT FORM (only if subject enrollment is continuing); and check the appropriate blank:

- ☒ Form is unchanged since last approved
- ☐ Approval of revision requested herewith; (identify changes)

(Electronic) Signature of Principal Investigator Paul J. Frick Date Jan 20, 2012

IRB Action:	<input checked="" type="checkbox"/> Continuation approved. Approval Expires: 1/20/13
	<input type="checkbox"/> Continuation disapproved
	<input type="checkbox"/> File closed
Signed: [Signature]	Date: 1/20/12

Submit by Email

Print Form

## Vita

The author was born in Tampa, Florida and raised in Texas. She obtained her Bachelors of Science degree in Psychology from Southwestern University in 2009. She joined the Applied Developmental Psychology Doctoral program in 2010 with Dr. Paul Frick's Developmental Psychopathology lab.