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# Depressive symptoms predict callous-unemotional behavior in adjudicated adolescent males with conduct disorder

Brandi C. Fink

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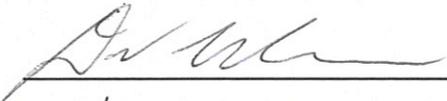
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**DEPRESSIVE SYMPTOMS PREDICT CALLOUS-  
UNEMOTIONAL BEHAVIOR IN ADJUDICATED  
ADOLESCENT MALES WITH  
CONDUCT DISORDER**

**BY**

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DISSERTATION

Submitted in Partial Fulfillment of the  
Requirements for the Degree of

**Doctor of Philosophy**

**Psychology**

The University of New Mexico  
Albuquerque, New Mexico

**May, 2010**

## **DEDICATION**

This is dedicated to my grandmother, Mary Fink, the most knowledgeable person I knew growing up. Through her stories of growing up on a homestead in Montana, always forthrightly answering my questions and explaining to me how things worked and were made without ever becoming impatient, she fostered my curiosity in the natural world and a desire to know how things really work.

## **ACKNOWLEDGMENTS**

This process would not have been possible without my husband, Derek Hamilton, and the support of both of us by my parents, Wayne and Lynnett Fink. Derek, I cannot begin to enumerate the ways I am grateful to you, so thank you for everything! Mom and Dad, thank you for making this process so much easier for Derek and me through everything you have done for us, including all of the “babysitting!”

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**ABSTRACT**

Depressive symptoms were examined in a sample of adjudicated adolescent males with conduct disorder and callous-unemotional behavior as measured by the Inventory of Callous-Unemotional Traits (ICU), the Antisocial Process Screening Device (APSD) and the Youth Psychopathy Inventory (YPI). Results indicate that contrary to previous findings, depressive symptoms, as measured by the Reynolds Adolescent Depression Scale – 2 (RADS-2) are, indeed, present in callous-unemotional youth and significantly predict callous-unemotional behavior in this sample of male adolescents. In addition, dysphoria was negatively associated with callous-unemotional behavior whereas somatic complaints were positively associated with it. These findings suggest that the restricted affective displays in youth with callous-unemotional behavior may, in part, be related to a depressive process. In addition, somatic complaints were significantly related to

impulsivity consistent with findings that depressive symptoms independently predict impulsivity in adolescents.

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## CHAPTER 1

### INTRODUCTION

The co-occurrence of depressive disorders and depressive symptoms has been shown to significantly complicate the course and clinical outcomes for youth with severe conduct problems and conduct disorder (Beyers & Loeber, 2003; Fombonne, Wostear, Cooper, Harrington & Rutter, 2001). Of the mental disorders manifest in childhood and adolescence, severe conduct problems and conduct disorder cause the most physical harm and property loss (Loeber, 1994). Depressive disorders and depressive symptoms co-occur with conduct problems at rates much higher than those expected by chance (Zoccolillo, 1992) and such a co-occurrence is more common than having either depressive or conduct problems alone (Zoccolillo, 1992). For instance, prevalence rates of depressive disorders in children and adolescents without a diagnosis of conduct disorder are two percent and three percent, respectively (Zoccolillo, 1992), but in children and adolescents with a diagnosis of conduct disorder the prevalence rates rise to a staggering 39 percent and 48 percent, respectively (Zoccolillo, 1992). In addition, co-occurring conduct problems and depressive symptoms put adolescents at a higher risk for poor clinical outcomes than either one problem alone (Beyers & Loeber, 2003; Fombonne, Wostear, Cooper, Harrington & Rutter, 2001), including a higher risk for the recurrence of depression after treatment (Rohde, Clarke, Lewinsohn, Seeley & Kaufman, 2001) and suicide attempts (Fombonne et al., 2001; Lewinsohn, Rohde & Seeley, 1995). In fact, co-occurring conduct problems and depressive symptoms have been found to be the most-significant predictor of suicidal ideation, above depression or conduct problems alone (Capaldi, 1992). Adolescent co-occurring conduct problems and depression in

males is also the most significant risk factor for the transition to future adult criminal behavior and adult substance abuse (Copeland, Miller-Johnson, Keeler, Angold & Costello, 2007; Robins & Price, 1991; Sourander et al., 2007; Zoccolillo, 1992).

It is known from the developmental psychopathology literature that the age and ordering of onset of conduct problems and depressive symptomatology is important when considering the severity of poor outcomes for these youth. Kovacs et al. (1988) reported that in children whose index diagnosis was a depressive disorder, the mean age of onset of depressive symptoms was 11.2 years (range, eight to 13.9 years) and that conduct problems appeared to develop mostly as a complication of depression, and appeared to be mostly episodic in nature (Kovacs et al. 1988). In addition, the occurrence of conduct problems did not affect the recovery from the index diagnosis of depression (Kovacs et al., 1988) nor did it complicate the course of the depressive episode (i.e., did not contribute to worsening depressive symptoms) (Kovacs et al., 1988).

Robins and Price (1991) found that for those individuals who went on to develop antisocial personality disorder, the average age of the first childhood symptom of conduct disorder was between eight and nine years (Robins & Price, 1991), much younger than those with an index diagnosis of depression. Longitudinal studies have also found that conduct problems in early adolescence predicted depressive symptomatology in these individuals two to seven years later (Capaldi, 1992; Lahey et al., 2002). In most cases conduct problems precede the onset of depressive symptomatology (Capaldi, 1992; Lahey et al., 2002; Loeber & Keenan, 1994) and for such youth the prognosis for adult outcomes is much poorer than for those with an index diagnosis of depression.

## Pathways Associated with the Development of Conduct Problems and Depressive Symptoms

Many prior studies have shown that poor parenting is associated with the development of conduct disorder problems and antisocial behavior in children (Dishion, French & Patterson, 1995; Farrington, 1995; Gardner, 1989, 1994; Patterson, 1997; Patterson, DeBaryshe & Ramsey, 1989; Patterson & Reid, 1984; Patterson, Reid & Dishion, 1992; Shaw & Bell, 1993). The process by which poor parenting leads to adult antisocial behavior has been termed the *coercive family process*, and its putative mechanisms of action are through negative reinforcement (Patterson, DeBaryshe & Ramsey, 1989; Patterson, Reid & Dishion, 1992). This coercion model posits that basic training in aggressive behavior occurs within the family. While parental antisocial behavior more strongly predicts the engagement of this process, it can begin simply with a temperament mismatch between a parent and child.

The second feature of this process is inept child management skills (Patterson, DeBaryshe & Ramsey, 1989; Patterson, Reid & Dishion, 1992). Parents who are inept at child management tend to be harsh and inconsistent in their discipline and use commands, demands and threats in response to their child's behavior (Patterson, 1986; Patterson, Reid & Dishion, 1992). They also tend to be noncontingent in their use of both positive reinforcement for prosocial behavior and punishment for deviant behavior (Patterson, 1986; Patterson, Reid & Dishion, 1992). For example, while some of the reinforcement for aversive or coercive child behavior is positive (laughing, attending, approving), the more important set of contingencies for coercive behavior is the process that consists of escape-conditioning. In the latter, the child uses aversive behavior, such

as whining, yelling and hitting, to terminate aversive intrusions from parents and other family members. Because child whining, yelling and hitting are aversive stimuli for parents they are more likely to drop their own demands or terminate their own aversive behavior when the child reciprocates. The child's coercive behavior increases as a result of such negative reinforcement. Soon, family members (parents and children) become caught in reinforcement traps whereby the parties will continue to emit their coercive behaviors toward each other in the future. There also tends to be an escalation of response intensity in this coercive process that comes to include hitting and physical attacks (Patterson et al., 1989).

In this escalation phase children will escalate their behaviors faster and to a higher level than the parent, which increases the probability that the parent will withdraw and give in before the child does (Patterson et al., 1989). In its worst form, family members become conditioned through this process to respond to even neutral stimuli from each other with perceived hostile intent (Pagani et al., 2004). The escalation into physical altercations between parents and children occurs most frequently between mothers and their children as mothers are usually responsible for enforcing rules, limit setting, etc. (Pagani et al., 2004). Not only does this process teach children how to control family members through coercive and deviant means, it also precludes training in prosocial behavior (Hawkins & Weis, 1985). In addition, observational studies of coercive families have shown that children's prosocial acts are often ignored or responded to inappropriately (Patterson et al., 1992), and that the aggressive behaviors learned at home are generalized to other settings, such as school (Ramsey, Patterson & Walker, 1990; Stoolmiller, Duncan & Patterson, 1995) where the child's aggressive and disruptive

behavior contribute to the experience of prosocial peer rejection and academic failure and where the child begins to associate with an equally failing, deviant peer group (Dishion, Patterson, Stoolmiller & Skinner, 1991; Stoolmiller, 1994).

Developmental theorists have described human development as an organizational process by which normal or successful development is the acquisition of a series of interwoven social, emotional and cognitive competencies (Cicchetti & Schneider-Rosen, 1986) and the concept of hierarchical integration as a process of successive adaptation and cumulative development (Cicchetti, 1990). Sroufe (1990) also posited that some developmental pathways represent adaptational failures that are associated with an increased likelihood of later failures. Capaldi (1999) argued that conduct problems are one such developmental pathway that increases the likelihood of later failure. Conduct problems disrupt the development of competencies, contributing to a developmental chain reaction of future failures for these individuals. Capaldi (1999) also argued that the combination of pervasive failures in adjustments and negative reactions from others that make individuals vulnerable to the development of depressive symptoms and that these experiences may be emotionally similar to loss events in adulthood that have been shown to trigger depression in adults (Garmezy, 1986). There is evidence for this process in the coercive family. It has been shown that the coercive family process contributes to several major family disruptions, including one where one or more family members, most often the deviant youth, become identified as a “problem” (i.e., deviant, a pain, brat, etc.) (Patterson et al., 1989). Such identification then contributes to the development of feelings of low self-worth, negative self-image (Patterson et al., 1989), related depressive

symptomatology and additional social failure (Capaldi, 1992; Capaldi & Stoolmiller, 1999).

There is also evidence that failure is a mediating factor between externalizing disorders and depression in adolescent boys (Biederman et al., 1995; Capaldi, 1991). Block, Gjerde and Block (1991) found that boys who subsequently developed depressive symptoms in adolescence exhibited more severely under-controlled and aggressive behavior as early as age seven. Higher levels of conduct problems have been associated with academic achievement failure, rejection in peer and parental relationships, association with delinquent peers, and substance use (Capaldi, 1991; Lahey, Miller, Gordon & Riley, 1999; Patterson & Stoolmiller, 1991). Subsequently, depressive symptoms increase for these youth between grades six and eight (Capaldi, 1992) related to the lack of normative successes, the social rejection and the reduced opportunities for reinforcement from school, prosocial peers and family that result from their disruptive behavior.

While the relationship between conduct problems and the subsequent development of depressive symptoms is clear, what has not been explicated in the literature is why anti-social behavior in these youth increases in severity. What needs to be considered is the establishing function that depressive symptoms serve for future anti-social behavior. Michael (1993) described two broad classes of establishing operations, unconditioned establishing operations and conditioned establishing operations. An establishing operation is any event, operation or stimulus condition that alters the reinforcing effects of a particular stimulus and an unconditioned establishing operation, of relevance here, is any event, operation or stimulus conditions whose reinforce-

establishing effects are unlearned. In the discussion of these anti-social youth, depressive symptoms would be an establishing operation that would make the effects of anti-social behavior, such as aggressiveness, delinquency, substance abuse, etc. more reinforcing.

### Depressive Symptoms and Callous-Unemotional Behavior

While depressive symptoms have been well studied in adolescents with conduct problems, they have not been well studied in children and adolescents with conduct problems and callous-unemotional behavior. Callous-unemotional behavior, or the interpersonal and affective features of these problems, is thought to be the core feature of psychopathy and at the root of the violent and antisocial behavior (Hare, 1991; 1998). The lack of consideration of depressive symptoms is partly because some, such as Hare (1991), have argued that an inverse relationship should exist between callous-unemotional behavior and depression because psychopathic features or psychopathy is thought to reflect imperturbability. In addition, much of the characterization of callous-unemotional behavior in children and adolescents comes from downward extensions of the adult trait model of psychopathy which, unfortunately, ignores the learning history, variables and consequences associated with the development and maintenance of this behavior. Thirdly, when depressive symptoms have been considered, there have been methodological issues in the conceptualization and measurement of the depressive symptoms and in composition of these samples. For instance, two studies have used the Child Behavior Checklist (CBCL) Parent and Teacher versions (Achenbach, 1991; Achenbach & Edelbrock, 1983) to measure depressive symptoms in their samples of adolescents and have reported either no relationship or an inverse relationship between these symptoms and callous-unemotional behavior (Brandt, Kennedy, Patrick & Curtin,

1997; Lynam, 1997). In both of these studies, however, the authors combined depressive symptomatology with anxiety symptoms and somatic complaints and tested the relationship between this composite and callous-unemotional behavior. It is likely that the addition of anxiety and somatic symptoms to depressive symptoms to create the composite variable obscured the relationship between depressive symptoms and callous-unemotional behavior. Anxiety symptoms are not typically related to either conduct problems or callous-unemotional behavior (Schmitt & Newman, 1999), and the relationship between somatic complaints and callous-unemotional behavior is unknown.

Secondly, although the CBCL is a widely used, valid and reliable measure, it has been reported that using self-report measures to assess internal experiences in adolescents, such as depressive symptoms and antisocial attitudes and behaviors, is preferable to using parent or teacher reports as adolescents tend to have less adult supervision at this developmental stage (Jolliffe et al., 2003; Kamphaus & Frick, 2002). In addition, adolescents with severe conduct problems typically come from very dysfunctional families where there are histories of out-of-home placements and where the parents have not had enough recent contact with the adolescent to provide current ratings of their child's functioning or characteristics (Loney, Frick, Clements, Ellis & Kerlin, 2003). O'Neill, Lidz and Heilbrun (2003) also failed to find a relationship between callous-unemotional behavior and depressive symptoms. While this study used a developmentally appropriate self-report measure of depressive symptomatology (Reynolds Adolescent Depression Scale, Reynolds, 1987), the level of depressive symptoms in their sample was quite low with the mean depression score being 30 points below what is considered clinically significant using this measure. It is possible that the

restricted range of depressive symptoms reported in the sample obfuscated any correlation.

Findings such as these may inappropriately lend credence to the statements by researchers in the area of psychopathy, and dissuade other investigators from examining the relationship between depressive symptoms and callous-unemotional behavior. While callous-unemotional behavior is discussed in the psychopathy literature as being a unique phenomenon, it can be argued that this may be an artificial and unhelpful distinction and that many of the symptoms of depression and callous-unemotional behavior are similar or overlap and that at least a proportion of what is being measured by callous-unemotional behavior is depressive symptoms.

We know that depression in childhood and adolescence has similar symptom manifestation as depression in adulthood with some minor differences that are considered to be related to development (Carlson & Garber, 1986). Just as in adults, depression in children and adolescents is not manifest as a single symptom (e.g. sad mood), but as a cluster of symptoms that may include anhedonia, apathy, feelings of low self-worth, social withdrawal, irresponsible behavior including school tardiness and truancy, impaired academic performance, fatigue, episodes of crying, sleeping and eating disturbances, promiscuous sexual behavior, self-destructive impulses such as drug and alcohol use, suicidal ideation and behavior (Carlson & Cantwell, 1982; Poznanski & Mokros, 1994), and ineffective peer interactions (Shaw, 1988). In addition, depressive symptomatology in youth is often exhibited as a restricted range of affect or negative affect, and a diminished interest in pleasurable activities (Reynolds, 2002). The affective presentation of callous-unemotional youth is similar to that of depressed youth. They are

often described as being cold, uncaring (Forth, Kosson & Hare, 2003) and appear as if they experience only a restricted range of emotion, or if emotion is exhibited, it is often shallow and short-lived (Forth, Kosson & Hare, 2003). Observations of these youth's emotional behavior are consistent with the experiences reported by the youth, themselves, where they also report feeling that they are unable to experience strong emotions (Forth, Kosson & Hare, 2003).

In addition to symptom overlap, there have been two studies demonstrating a relationship between callous-unemotional behavior, and suicidal ideation and suicide attempts that further supports the assertion that at least a portion of what is being measured by callous-unemotional behavior is depressive symptoms. Douglas et al. (2006) examined the relationship between psychopathic traits and suicidal ideation and suicide attempts in several samples of adolescents and adults. In one sample of detained youth, the authors found a significant positive relationship between suicide attempts and antisocial and impulsive behavior as measured by the Antisocial Process Screening Device (ASPD, Frick & Hare, 2002), but a negative relationship between affective and interpersonal features of callous-unemotional behavior and suicidal ideation and attempts (Douglas et al., 2006). In another sample of detained youth, however, the authors found a significant positive relationship between suicidal ideation and the affective and interpersonal features of callous-unemotional behavior as measured by the Psychopathic Checklist: Youth version (PCL:YV, Forth, Kosson & Hare, 2003), but a negative relationship between antisocial and impulsive behavior and suicidal ideation (Douglas et al., 2006). Much like findings pertaining to depressive symptoms and callous-unemotional behavior, the authors concluded that the contrary findings were the result of

methodology, the measure used to assess callous-unemotional behavior, and sample composition. In a sample of non-referred adolescents evaluating the influence of CU behavior on suicidal ideation, Chabrol and Saint-Martin (2009) found that the Callous-Unemotional subscale (reflecting callousness and unemotionality) of the Youth Psychopathic traits Inventory (YPI, Andershed, Kerr, Stattin & Levandar, 2002) was an independent predictor of suicidal ideation. The authors hypothesized that shallow affect exhibited in CU behavior contributes to feelings of dullness and worthlessness and the subsequent suicidal ideation (Chabrol & Saint-Martin, 2009).

In addition, there are behavioral similarities between youth with conduct problems and depressive symptoms and youth with conduct problems and callous-unemotional behavior also reflect a possible relationship. Much like conduct problems and depressive symptoms, children and adolescents who exhibit callous-unemotional behavior have been found to exhibit more severe and aggressive antisocial behavior than individuals with only conduct problems (Christian, Frick, Hill, Tyler & Frazer, 1997; Frick, Cornell, Barry, Bodin & Dane, 2003) in adjudicated (Vincent, Vitacco, Grisso & Corrado, 2003) and nonadjudicated adolescents (Frick, Stickle, Dandreaux, Farrell & Kimonis, 2005). They have also been shown to exhibit higher rates of delinquent behavior such as property offenses, status offenses (e.g., taking a vehicle for a ride without permission) and aggressive behavior than adolescents with only conduct disorder at a one-year follow-up (Frick, Cornell, Barry, Bodin & Dane, 2003) and are more likely to transition to adult anti-social behavior and substance abuse. While failure as a mediator between conduct problems and depressive symptoms has not been investigated in this population of disruptive youth, it is conceivable that they are experiencing similar

failures given the highly disruptive nature of their conduct problems to normative successes in academic achievement and peer and parental relationships and the associated sources of reinforcement.

### Current Study

The current study sought to explore the relationship between depressive symptoms and callous-unemotional behavior in a sample of incarcerated adolescent males while addressing some of the limitations of prior studies by using developmentally appropriate self-report measures of callous-unemotional behavior and depression. Prior epidemiological and developmental psychopathology studies have demonstrated that there is a high co-occurrence between severe conduct problems and depressive symptoms and that the development of depressive symptoms is mediated by the failures in parental and peer relationship and academic achievement experienced by these youth. These studies have also shown that these youth experience much poorer outcomes than youth with either problem alone, including the transition to adult criminal behavior and adult substance abuse.

Anti-social behavior in youth is also studied from the psychopathic trait model perspective. Despite these anti-social youth experiencing similar behavioral trajectories and outcomes as those studied from the developmental psychopathology perspective and the similarity between depressive symptoms and callous-unemotional behavior, this perspective argues that depressive symptoms should not be present in this group of anti-social youth. Instead it is argued that callous-unemotional behavior is at the root of these youth's anti-social behavior. This study sought to demonstrate that depressive symptoms are, indeed, present in this group of youth and that at least a proportion of the behavior

assessed by measures of callous-unemotional behavior are actually depressive symptoms and by doing so, suggest that these youth are not a categorically different group, but are reflective of the conduct disordered youth with depressive symptoms discussed in the developmental psychopathology literature.

## CHAPTER 2

### METHODOLOGY

#### Participants

Participants were 105 adolescent males incarcerated at the Bernalillo County Juvenile Detention Center in Albuquerque, New Mexico and are a part of a larger study investigating the neurocognition of callous conduct disordered youth. The mean age of the sample participants was 17 (SD = 1.00, range 15 - 19) years of age at the time of assessment. Sample participants were 8% American Indian, 5% Black or African American, 11% Caucasian and 76% Hispanic.

#### Clinical diagnoses

Clinical diagnoses were obtained by trained research assistants using the Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime version (K-SADS-PL; Kaufman, Birmaher, Brent, Rao & Ryan, 1997) at the initial assessment time. Only two participants of the sample did not meet DSM-IV-TR (APA, 2000) diagnostic criteria for conduct disorder. Twenty percent of the study participants met diagnostic criteria for Attention Deficit Hyperactivity Disorder (ADHD) and sixteen percent met diagnostic criteria for Major Depressive Disorder or Depressive Disorder. Diagnostic data was missing for three participants.

#### Ethical considerations

Initial contact with potential study participants at the facility was made through announcements by research staff. When individuals expressed interest, their guardians were contacted by phone. For guardians able to come to the facility, the informed consent and minor assent were obtained during a meeting with the guardian and the

adolescent. For guardians unable to come to the facility, study information and the consent form were mailed to them and a research assistant conducted the informed consent via telephone. Consenting guardians then mailed the signed consent form back to researchers and minor assent was obtained from the adolescent participant at the facility. For minors who were wards of the state, the legal guardian at the facility provided consent for study participation and minor assent was obtained from the adolescent participant.

Participants are given the opportunity to decline participation after the study is described in person and are informed of their right to discontinue participation at any point during the course of the study. The nature of the research study made it much less likely to involve coercion or undue influence. Participants were apprised that there is no direct benefit to them and that the only benefit is for other people exhibiting this behavior. Participants were also informed that their participation was in no way associated with their status at the facility or their probation status.

#### Assessment Materials

##### Reynolds Adolescent Depression Scale – Second Edition

Depressive symptoms were assessed using the Reynolds Adolescent Depression Scale – Second Edition (RADS-2; Reynolds, 2002). The RADS-2 is a 30-item, Likert-scale, self-report instrument designed to evaluate four domains of the depression severity construct: Dysphoric Mood (eight items), Anhedonia/Negative Affect (seven items), Negative Self-Evaluation (eight items), and Somatic Complaints (seven items). The RADS-2 also yields a Depression Total scale score. Each item is rated on a four-point scale ranging from one (*almost never*) to four (*most of the time*). A total RADS-2 score

(range 30 – 120) is computed to derive severity of depressive symptoms with higher scores suggesting greater depressive symptomatology. For the total RADS-2 Depression Total score, the recommended raw cutoff score, suggestive of risk for major depressive symptoms, is 76 (Reynolds, 2002). In addition, the RADS-2 shows strong convergent validity between affective components of depression such as helplessness, hopelessness, loneliness and suicidal ideation (Reynolds, 2002). It also shows strong convergent validity to other measures of psychological distress such as those assessing self-esteem, anxiety, hopelessness and suicidal behaviors (Reynolds, 2002).

In internal reliability consistency studies with a total sample of 9052 adolescents, the internal consistency reliability coefficients for the Depression Total scale and subscales for the total sample of adolescents were acceptably high. The Depression Total scale demonstrated a strong internal consistency reliability coefficient of .93 (Reynolds, 2002). The internal consistency reliability reported for the RADS-2 subscales ranged from .80 to .87, with a median reliability of .86 (Reynolds, 2002). In the current study, the Cronbach alpha for the Depression Total scale was .89, .83 for the Dysphoric subscale, .72 for the Anhedonia-Negative Affect subscale, .80 for the Negative Self-Evaluation subscale and .78 for the Somatic subscale. All inter-item correlations and item-total correlations were within acceptable ranges.

Measures of callous-unemotional behavior

Inventory of Callous-Unemotional Traits (ICU)

The ICU (Frick, 2004) is a 24-item self-report measure developed from the Callous-Unemotional scale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001). The ICU was developed to overcome the limitations of this scale of the

APSD which has demonstrated only moderate internal consistency reliability largely due to the scale consisting of only a small number of items and a three point rating system (Munoz & Frick, 2007). The six items that encompass the Callous-Unemotional scale of the APSD were expanded to the 24-items of the ICU and put on a four-point Likert type scale from 0 (not at all true) to 3 (definitely true). Factor analyses reveal three factors: Callousness, Uncaring and Unemotional (Kimonis et al., 2008). The ICU has demonstrated an adequate internal consistency reliability of .73 in a sample of incarcerated adolescents (Kimonis, Frick, Munoz & Aucoin, 2008). In the current study, the Cronbach alpha coefficient for the Total score was .83, .82 for the Callousness subscale, .78 for the Uncaring subscale, but only .57 for the Unemotional subscale. Inter-item correlations and item-total correlations for the Callousness and Uncaring subscales were within acceptable ranges. Inter-item correlations and corrected item-total correlations for the Unemotional subscale were somewhat low.

#### Antisocial Process Screening Device (APSD)

The APSD (Hare & Frick, 2001) is a 20 – item rating scale developed to assess behavior similar to the adult construct of psychopathy and those assessed by the Psychopathic Checklist – Revised (PCL-R; Hare, 1991). Each item is scored either 0 (not at all), 1 (sometimes true) or 2 (definitely true). Factor analyses reveal three dimensions: a seven-item Narcissism dimension, a five-item Impulsivity dimension and a six-item Callous-Unemotional dimension (Frick, Bodin & Barry, 2000). Studies have shown that the APSD is effective at differentiating groups of adolescents who engage in more severe, chronic and aggressive antisocial behavior (Frick et al., 1999; Frick et al., 2003; Kruh, Frick & Clements, 2005) from adolescents whose behavior is less severe. Total ASPD

showed an adequate internal consistency reliability of .78 - .81, however, the internal consistency reliability for the subscales was more moderate, ranging from .50 to .68 (Munoz & Frick, 2007). In the current study, the Cronbach alpha for the Total scale was .76, .70 for the Narcissism subscale, .61 for the Impulsivity subscale, but only .35 for the Callous-Unemotional. Inter-item correlations and corrected item-total correlations for the Narcissism and Impulsivity subscales were generally within acceptable ranges, but these correlations for the Callous-Unemotional subscales were largely within unacceptable ranges.

#### Youth Psychopathic Traits Inventory (YPI)

The YPI (Andershed, Kerr, Stattin & Levander, 2002) is a 50-item self-report measure designed to measure core features of psychopathy in adolescents. The YPI consists of ten subscales, each containing five questions, with factor analyses showing these subscales form three factors (Andershed et al., 2002). The factors are Grandiose-Manipulative (including dishonest charm, grandiosity, lying and manipulation), Callous-Unemotional (including remorselessness, unemotionality and callousness) and Impulsive-Irresponsible (including thrill-seeking, impulsivity and irresponsibility). The YPI has shown good convergent validity with other measures of antisocial and callous-unemotional behavior (Andershed et al., 2002; Dolan & Rennie, 2006; Skeem & Cauffman, 2003). The test-retest reliability has also indicated good stability at .73 (Skeem & Cauffman, 2003). In the current study, the Cronbach alpha was .92 for the Total score, .90 for the Grandiose-Manipulative subscale, .84 for the Impulsive-Irresponsible subscale and .81 for the Callous-Unemotional subscale with inter-item correlations ranging from -.03 to .56 for this subscale. Corrected item-total correlations

for the Callous-Unemotional subscale were also low. Inter-item correlations and item-total correlations for the Grandiose-Manipulative and the Impulsive-Irresponsible subscales were within acceptable ranges.

## CHAPTER 3

### RESULTS

Statistical Package for the Social Sciences 16.0 (SPSS) was used to perform the statistical analyses of the data for this study. The means and standard deviations for the RADS-2, ICU, APSD and YPI and their subsequent subscales are listed in Table 1. The mean depression score for the sample was 59, placing the sample in the 59<sup>th</sup> percentile compared to RADS-2 age and gender standardized norms for depressive symptoms. The cut-off score for consideration for a major depressive episode using this measure is 76 and 10% of the sample scored 76 or higher. For the RADS-2 subscales, the participants aged 15-16 years and 17-19 years ranked in the 83<sup>rd</sup> percentile and 85<sup>th</sup> percentile, respectively, for Anhedonia/Negative Affect; 74<sup>th</sup> percentile and 61<sup>st</sup> percentile, respectively, for Somatic Complaints; 64<sup>th</sup> percentile and 65<sup>th</sup> percentile, respectively, for Negative Self-Evaluation, and 53<sup>rd</sup> and 44<sup>th</sup> percentile for Dysphoric Mood. Given the high depression scores reported for this sample and the fact that they are an incarcerated sample, analyses were conducted to determine if depressive symptoms were a factor of length of incarceration. To assess this relationship, days incarcerated was calculated from the date the participant entered the facility to the date that the participant completed the RADS-2 depression measure. Days incarcerated were calculated for 59 participants, but 46 participants did not have the date they entered the facility available for this calculation. Pearson product-moment correlations were conducted to explore the relationship between the number of days incarcerated and the total depression scores for those who had this information available. The relationship between the number of days incarcerated and depressive symptoms was not significant ( $r = .06, p = .31$ ). An

independent-samples t-test was conducted to compare the depression scores for participants for whom the number of days incarcerated was available to those for which this information was not available. There was no significant difference in depressive symptoms scores for participants with this information available ( $M = 68.25, SD = 11.86$ ) and those without it,  $M = 67.23, SD = 11.36; t(105) = -.44, p = .66$  (two-tailed).

The relationship between callous-unemotional behavior and depressive symptoms was investigated in several ways. First, Pearson product-moment correlations were conducted between the RADS-2 total score and the total scores of the ICU, APSD and YPI. None of these correlations reached statistical significance (ICU,  $r = .10, p = .15$ ; APSD,  $r = .14, p = .09$ ; YPI,  $r = -.02, p = .42$ ). Because depression is manifest through different clusters of symptoms and not just sad mood, Pearson product-moment correlations were conducted to explore the relationship between callous-unemotional behavior (as measured by the subscales of the ICU, APSD and YPI) and depressive symptoms (as measured by the subscales of the RADS-2). These correlations can be found in Table 2.

Subsequently, multiple regression was used to test the hypothesis that depressive symptoms (as assessed by the RADS-2) are able to predict callous-unemotional behavior (as assessed by the ICU, APSD and YPI) and account for a significant proportion of the variance in this behavior. Preliminary analyses were performed to ensure that there were no violations in the assumptions of normality, linearity and homoscedasticity. Separate regressions were performed with the RADS-2 subscales as the predictor variables. The variables Anhedonia/Negative Affectivity, Negative Self-Evaluation, Dysphoria and Somatic Complaints were entered into the models simultaneous with the total scores of

the ICU, APSD and YPI as the criterion variables. For the ICU, the total variance explained by the model was 23.3%,  $F(4, 100) = 7.58, p < .0005$ . For the APSD, the total variance explained by the model was 9.5%,  $F(4, 95) = 2.50, p < .048$ . For the YPI, the total explained by the model was 13.7%,  $F(4, 79) = 3.14, p < .019$ . Please see Table 3 for standard errors (*SE B*), the standardized regression coefficients (*b*) and the proportion of variance accounted for ( $R^2$ ).

Because the ICU, APSD and YPI measure narcissistic, impulsive and anti-social acts in addition to callous-unemotional behavior, subsequent multiple regression analyses were conducted with, again, the RADS-2 subscales as the predictor variables. Again, the variables Anhedonia/Negative Affectivity, Negative Self-Evaluation, Dysphoria and Somatic Complaints were entered into the models simultaneous with each subscale of the callous-unemotional behavior measures (ICU, APSD and YPI) as the criterion variables. This step of the analyses was conducted to determine if depressive symptoms were better predictors of callous-unemotional behavior than predictors of the other behavior measured by these scales. Preliminary analyses were performed to ensure that there were no violations in the assumptions of normality, linearity and homoscedasticity. For the Unemotional subscale of the ICU, the total variance explained by the model was 20.4%,  $F(4, 100) = 6.4, p < .0005$ . For the Callous subscale of the ICU, the total variance explained by the model was 12%,  $F(4, 100) = 3.37, p < .01$ . For the Uncaring subscale of the ICU, the total variance explained by the model was 12%,  $F(4, 100) = 3.49, p < .01$ . Please see Table 4 for standard errors (*SE B*), the standardized regression coefficients (*b*) and the proportion of variance accounted for ( $R^2$ ) associated with these analyses.

For the Narcissism subscale of the APSD, the model did not account for a significant proportion of the variance in this subscale,  $F(4, 96) = 1.46, p = .22$ . For the Callous-Unemotional subscale of the APSD, the total variance explained by the model was 21%,  $F(4, 96) = 6.37, p < .0005$ . For the Impulsivity subscale of the APSD, the total variance explained by the model was 15.9%,  $F(4, 96) = 4.49, p < .002$ . Please see Table 5 for standard errors ( $SE B$ ), the standardized regression coefficients ( $b$ ) and the proportion of variance accounted for ( $R^2$ ) associated with these analyses.

For the Grandiose-Manipulative subscale of the YPI, the total variance accounted for by the model was 10.6%,  $F(4, 90) = 2.66, p < .04$ . For the Callous-Unemotional subscale of the YPI, the total variance accounted for by the model was 17.7%,  $F(4, 89) = 4.78, p < .002$ . For the Impulsive-Irresponsible subscale of the YPI, the total variance accounted for by the model was 19%,  $F(4, 93) = 5.45, p < .001$ . Please see Table 6 for standard errors ( $SE B$ ), the standardized regression coefficients ( $b$ ) and the proportion of variance accounted for ( $R^2$ ) associated with these analyses.

To test the convergent validity among the measures of callous-unemotional behavior, Pearson product moment correlations were conducted. All the measures showed good convergent validity with each other. The relationship between the ICU and the APSD was significant ( $r = .64, p < .01$ ) as was the relationship between the ICU and the YPI ( $r = .63, p < .01$ ) and the APSD and the YPI ( $r = .66, p < .01$ ).

## CHAPTER 4

### DISCUSSION

The current study sought to examine the presence of depressive symptoms within a sample of incarcerated adolescent males with conduct disorder and callous-unemotional behavior. The overall study findings support the hypothesis that depressive symptoms are, indeed, present in this population and that these symptoms do not appear to be related to the experience of being incarcerated. The findings also support the hypothesis that depressive symptoms account for a significant proportion of the variance in callous-unemotional behavior as measured by the Inventory of Callous-Unemotional Traits (ICU; Frick, 2004), the Antisocial Process Screening Device (APSD; Frick & Hare, 2001) and the Youth Psychopathic Traits Inventory (YPI; Andershed, Kerr, Stattin & Levander, 2002). In addition, the findings were fairly consistent across all of the subscales of these measures. While depressive symptoms accounted for a significant proportion of the variance in all of the subscales except the Narcissism subscale of the Antisocial Process Screening Device (Hare & Frick, 2001), they accounted for the greatest proportion of variance in the scales that reflected unemotional behavior suggesting that these measures are, in part, measuring depressive symptoms and not exclusively callous-unemotional behavior. These findings also suggest that this population is not categorically different from the population described by the developmental psychopathology literature and that it is through the co-occurrence of these problems (conduct problems and depressive symptoms) that these youth are beginning to experience poor outcomes, as evidenced by their current incarceration.

The evaluation of the independent variables of the models tested also reveals interesting patterns. For instance, bivariate correlations reveal that dysphoria was either not related or negatively related to the both total scores and the subscales scores of the measures. In addition, nearly uniformly, dysphoria, while contributing significantly to the variance accounted for by the model, had a significant negative relationship with the criterion variable of interest. It is possible that when researchers have argued against depression being related to callous-unemotional behavior that only dysphoria or sad mood was considered and not the other features of depressive symptomatology.

An additional nearly uniform finding pertains to the relationship of somatic complaints to the criterion variables. Bivariate correlations revealed that somatic complaints were significantly related to the unemotional behavior. An evaluation of the independent variables of the model also reveals that somatic complaints were a significant predictor of unemotional behavior. These findings suggest several things. First, that the shallow, short-lived and restricted range of emotion described in callous-unemotional youth (Forth, Kosson & Hare, 2003) and measured by the Unemotional subscales may reflect, in fact, the flat affect that results from a depressive process rather than being more of an immutable trait as argued by the psychopathy literature. Secondly, as discussed previously, it has been argued that callous-unemotional behavior or traits are at the root of the anti-social acts (Hare, 2001) committed by these youth. Part of this argument comes from studies that have found callous-unemotional behavior present in young children (Silverthorn, Frick & Reynolds, 2001) as measured by parent report. What is unclear is what, exactly, was being measured in these studies. Was it callous-unemotional behavior or simply difficult temperament? Recall that a temperament

mismatch between parent and child is sufficient to begin the coercive parenting process. Furthermore, the more that parents find their children's behavior unmanageable, the more likely the parents are to resort to coercive tactics in their parenting (Eddy, Leve & Fagot, 2001). As discussed previously, through this process the child begins to experience failures in normally achieved developmental benchmarks setting the stage for the onset of depressive symptoms. It is also possible that as the measurement of callous-unemotional behavior transitions from parent-report to self-report that different processes are being measured.

Bivariate correlations also revealed that somatic complaints were significantly related to impulsive behavior. An evaluation of the independent variables of the model also reveals that somatic complaints were a significant predictor of impulsive behavior. Impulsivity has been defined as "a predisposition toward rapid, unplanned reactions to internal or external stimuli without regard to the negative consequences of these reactions to themselves or others" (Moeller et al., 2001; p.1784). While this type of behavior is a common characteristic of adolescent development, depression, through affective lability, has been shown to be a unique contributor to impulsive behavior (Mann et al., 1999), which possibly explains the relationship seen in this study. This relationship also likely existed because many of the items that measure impulsivity reflect proneness to boredom and items measuring somatic complaints also measure boredom.

Additional points that must be mentioned are the ethnic and racial composition of this study's sample, how this may have influenced the depressive symptoms reported, and the possible relationship of this composition and the measures of callous-unemotional behavior. Recall that 76% of the sample identified themselves as Hispanic, and an

additional 13% identified themselves as Black or African American or American Indian. All three of these ethnic groups tend to experience depression with more somatic complaints than any other type of depressive symptom (Canino, Rubio-Stipec, Canino & Escobar, 1992; Coyne, Schwent & Fechner-Bates, 1995; Iwata & Buka, 2002). While complaints of anhedonia and negative affect were most frequently reported by this sample, somatic complaints were the next most common depressive symptom reported. It is possible that the sample composition influenced the findings of the study through the manner in which this sample experiences depression. Future studies should compare ethnic and racial differences with respect to the ability of depression to account for callous-unemotional behavior. It is conceivable that different patterns of result would emerge. An alternative explanation would be that the type of depressive symptoms shown by this population has been shaped over the course of their lives. For example, given the nature of the family interactions of these youth, they have likely not come from families who recognized demonstrations of sadness or if recognized responded harshly. In addition, it has been shown that the delinquent peer groups of these youth punish prosocial behavior and reinforce anti-social behavior. To show sadness within these groups would likely result in the punishing of such behavior by quite severe name-calling, belittling and physically attacking the dysphoric youth.

As previously discussed, for studies where callous-unemotional behavior predicted suicide ideation and attempts, the scales that predicted such behavior varied widely based upon the sample composition and the measurement of callous-unemotional behavior used. Some of these samples were predominantly African American and Hispanic while others were predominantly Caucasian or Canadian (Douglas et al., 2006).

It is possible that the varied findings reported by Douglas et al. were the result of differential depressive symptoms experienced by these diverse samples and the subsequent influence that these symptoms had on the measures of callous-unemotional behavior.

#### Limitations and Future Directions

There were several limitations to the current study. The first being that the length of incarceration was not available for a portion of the participants, which required that the depression scores for this portion to be compared to the portion for which this information was available. A second limitation was that pharmacotherapeutic status was not available for the study participants. One possible implication of this is that variability in pharmacotherapeutic status may have actually weakened the relationships between the variables studied. Future work where pharmacotherapeutic status is controlled may reveal even stronger relationships between these variables. The most significant limitation of the study is the lack of generalizability of the findings to other groups, as this sample was male and largely Hispanic. It is possible that the ethnic composition of the sample influenced the pattern of depressive symptoms witnessed and their relationship to the variables of interest. Future studies should attempt to recruit a more ethnically and racially representative samples to determine if the pattern of findings persists.

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Table 1

*Means and Standard Deviations for total scores on the RADS-2, ICU, APSD and YPI*

Measure	<i>M</i>	<i>SD</i>
1. RADS-2	59.42	12.83
a. RADS-2 Dysphoria	16.16	4.56
b. RADS-2 Anhedonia/Negative Affect	13.16	3.41
c. RADS-2 Negative Self-Evaluation	14.15	4.50
d. RADS-2 Somatic Complaints	15.57	4.24
2. ICU	29.35	8.35
a. ICU Unemotional	9.11	2.71
b. ICU Callous	8.75	5.36
c. ICU Uncaring	11.49	3.58
3. APSD	14.57	4.59
a. APSD Narcissism	4.49	2.66
b. APSD Callous-Unemotional	4.79	1.90
c. APSD Impulsivity	5.31	1.85
4. YPI	116.33	20.97
a. YPI Grandiosity/Manipulative	39.43	10.02
b. YPI Callous-Unemotional	35.80	7.91
c. YPI Impulsive	40.74	7.37

Table 2

Summary Intercorrelations for Scores on the RADS- and ICU, APSD and YPI

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. RADS-2 Dysphoric													
2. RADS-2 Anhedonia/Neg. Affect.													
3. RADS-2 Neg. Self-Evaluation													
4. RAD2-2 Somatic Complaints													
5. ICU Unemotional	-.03	.14	.15	.28**									
6. ICU Callous	-.14	.08	.13	.07									
7. ICU Uncaring	-.14	.24**	.07	.02									
8. APSD Narcissism	.10	-.13	.10	.19**									
9. APSD Callous-Unemotional	-.26**	.30**	-.05	-.06									
10. APSD Impulsive	.18*	-.08	.23*	.37**									
11. YPI Grandiose/Manipulative	.13	-.19*	.12	.23*									
12. YPI Callous-Unemotional	-.31*	-.07	-.09	-.01									
13. YPI Impulsivity	.08	-.14	.23*	.31**									

\*  $p < .05$ , \*\*  $p < .01$

Table 3

*Regression Analysis Summary for RADS-2 Subscales Predicting ICU Total Score and Subscales*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
ICU Total			
Dysphoria	-1.15	.24	-.63**
Anhedonia/Negative Affect	.41	.23	.17
Negative Self-Evaluation	.42	.23	.23
Somatic Complaints	.86	.26	.44*
ICU Unemotional			
Dysphoria	-.29	.08	-.49***
Anhedonia/Negative Affect	.11	.07	.14
Negative Self-Evaluation	.03	.08	.06
Somatic Complaints	.37	.09	.58***
ICU Callous			
Dysphoria	-.59	.17	-.47***
Anhedonia/Negative Affect	.06	.16	.04
Negative Self-Evaluation	.31	.16	.26
Somatic Complaints	.31	.18	.25
ICU Uncaring			
Dysphoria	-.30	.11	-.37**
Anhedonia/Negative Affect	.25	.10	.24*
Negative Self-Evaluation	.08	.10	.10
Somatic Complaints	.18	.12	.21

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 4

*Regression Analysis Summary for RADS-2 Subscales Predicting APSD Total Score and Subscales*

Variable	<i>B</i>	<i>SE B</i>	$\beta$
APSD Total			
Dysphoria	-.30	.15	-.30*
Anhedonia/Negative Affect	.03	.14	.02
Negative Self-Evaluation	.04	.14	.04
Somatic Complaints	.47	.17	.42**
APSD Narcissism			
Dysphoria	-.04	.09	-.07
Anhedonia/Negative Affect	-.12	.08	-.15
Negative Self-Evaluation	.03	.09	.05
Somatic Complaints	.14	.10	.21
APSD Callous-Unemotional			
Dysphoria	-.19	.06	-.46**
Anhedonia/Negative Affect	.20	.05	.35
Negative Self-Evaluation	-.02	.06	-.05
Somatic Complaints	.13	.07	.28*
APSD Impulsivity			
Dysphoria	-.07	.06	-.18
Anhedonia/Negative Affect	-.06	.05	-.11
Negative Self-Evaluation	.03	.07	.08
Somatic Complaints	.20	.07	.45**

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

Table 5

*Regression Analysis Summary for RADS-2 Subscales Predicting YPI Total Score and Subscales*

Variable	<i>B</i>	<i>SE B</i>	$\eta^2$
YPI Total			
Dysphoria	-1.15	.24	-.63*
Anhedonia/Negative Affect	.41	.23	.17
Negative Self-Evaluation	.42	.23	.23
Somatic Complaints	.86	.26	.44*
YPI Grandiose/Manipulative			
Dysphoria	-.21	.33	-.09
Anhedonia/Negative Affect	-.71	.32	-.24*
Negative Self-Evaluation	.17	.31	.08
Somatic Complaints	.66	.36	.27
YPI Callous-Unemotional			
Dysphoria	-1.02	.24	-.58***
Anhedonia/Negative Affect	-.12	.23	-.05
Negative Self-Evaluation	.12	.24	.07
Somatic Complaints	.67	.27	.34*
YPI Impulsive			
Dysphoria	-.55	.22	-.34*
Anhedonia/Negative Affect	-.46	.22	-.22*
Negative Self-Evaluation	.44	.23	.26
Somatic Complaints	.70	.24	.41**

\* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$