An examination of the treatment of callous-unemotional traits in children

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The current paper reviews research regarding the presence and treatment of Callous-Unemotional (CU) traits. CU traits identify a distinctly severe and stable subgroup of individuals with psychopathy. In this paper, the construct of psychopathy and CU traits will be examined. Many of the current assessment devices that measure psychopathy and CU traits in children will be evaluated to provide a better description of them. The treatment of affective and behavioral problems in children with CU traits will also be explored.

Degree Type
Thesis

Degree Name
Master of Science in Clinical Psychology (MSCP)

Committee Chair

Subject Categories
Psychiatry and Psychology

Comments
Library Use: LIH

This thesis is available at CommonKnowledge: https://commons.pacificu.edu/spp/1109
AN EXAMINATION OF THE TREATMENT OF CALLOUS-UNEMOTIONAL TRAITS IN CHILDREN

A THESIS

SUBMITTED TO THE FACULTY

OF

SCHOOL OF PROFESSIONAL PSYCHOLOGY

PACIFIC UNIVERSITY

HILLSBORO, OREGON

BY

ALEXANDER SMITH

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

MASTER OF SCIENCE IN CLINICAL PSYCHOLOGY

JULY 26, 2013
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Abstract

The current paper reviews research regarding the presence and treatment of Callous-Unemotional (CU) traits. CU traits identify a distinctly severe and stable subgroup of individuals with psychopathy. In this paper, the construct of psychopathy and CU traits will be examined. Many of the current assessment devices that measure psychopathy and CU traits in children will be evaluated to provide a better description of them. The treatment of affective and behavioral problems in children with CU traits will also be explored.
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Introduction

Callous-unemotional (CU) traits characterize a distinct subgroup of psychopathic individuals with particularly severe symptoms. They are most often used to identify this subgroup in children who are more likely to have severe psychopathic symptoms into adulthood. CU traits have been somewhat popularized by media lately. In a recent New York Times article (Kahn, 2012), a child with CU traits who had some severe behavioral problems was discussed. Even with some of the recent attention, there are still questions that people have about the subject. Some of these questions include the following: what are CU traits and what can be done about a child who has these traits? This paper will address these questions by reviewing the literature on CU traits. In this paper, the constructs of psychopathy and CU traits in children and the theories behind them will be examined. It will begin with the examination of many of the assessment devices used to measure psychopathy and CU traits in children. Because of the complex nature of these constructs, they have been defined primarily through these assessments, which must be understood before the construct is further understood. Next, the descriptions and theories of the constructs will be discussed. Finally, the treatments regarding CU traits in children will be examined.

There is a lot of controversy in the field about the existence of psychopathy and CU traits in children and whether it should be a diagnosable disorder. The most recent conceptualizations of psychopathy are relatively new. Many researchers have attempted to apply this construct as defined in adults to children and adolescents, as evidenced by the number of assessment devices available that measure this construct. There are many benefits to being able to diagnose psychopathy at an early age. Early detection leads to early intervention and early treatment. Since the construct is so tied into personality and is considered to be a lifetime disorder, targeting
it early can aid in not just the long term treatment, but in early risk prediction as well (Frick & Marsee, 2006; Kotler & McMahon, 2010). It has also been argued that having an accurate diagnosis that can inform clinicians on how best to intervene is much better than attempting many interventions that aren't working until the children can get the diagnosis in adulthood (Frick & White, 2008).

There are, however, some risks involved in early diagnosis that have some researchers discouraged by the idea of labeling children with psychopathy or CU traits (Edens, Skeem, Cruise, & Cauffman, 2001; Kotler & McMahon, 2010; Murrie, Boccaccini, McCoy, & Cornell, 2007; Seagrave & Grisso, 2002). Kotler and McMahon (2010) identified three major issues surrounding the debate: 1) whether labeling a youth as having psychopathic or CU traits is developmentally appropriate given the malleability of personality in children, 2) the question of the stability of psychopathic or CU traits from youth to adulthood, and 3) the concern about the social and legal implications of using the "psychopathy" label. One of the most argued concerns is that the label may be very stigmatizing if placed on adolescent offenders, resulting in harsher punishments and an unwillingness of the juvenile justice system to make use of rehabilitative options (Edens et al., 2001; Murrie et al., 2007; Seagrave & Grisso, 2002).

The first issue involves whether the measures assessing psychopathy in children are developmentally appropriate for them. Seagrave and Grisso (2002) pointed out that children's personalities are too fluid and parallel to the construct of psychopathy to assess for any real differences. Seagrave and Grisso (2002) argued that many of the definitions of psychopathy parallel characteristics of children that are seen normally during development, such as impulsivity, irresponsibility, and egocentricity. Clinicians see traits of psychopathy in children; these traits may be an indication of true psychopathic-like traits, or they may just be a product of
the child's unique development. Some of the interpersonal, affective, unstable, and antisocial lifestyle issues that are commonly seen may be due to some specific developmental characteristics such as biological mood swings, sensation seeking, egocentricity, identity, and peer influences (Seagrave & Grisso, 2002). Hart, Watt, and Vincent (2002) even went as far as to say that juvenile psychopathy may not even exist. They suggested that juvenile psychopathy measures assess something, but it's impossible to know for sure what it is they measure (Hart et al., 2002). The assessments measuring psychopathy and CU traits in children and their effectiveness will be discussed later in this paper.

The second issue addresses a concern that psychopathic traits in children may not be relevant because they aren't stable enough to transverse into adulthood. If psychopathy traits in children are not stable and persistent into adulthood, there is no benefit of identifying these children (Murrie et al., 2007). CU traits, a subgroup of psychopathy, have been identified as being a stable, long lasting construct (Frick & White, 2008). More research on the stability and the extent to which CU traits in children translates to adulthood will be discussed later in this paper.

Another one of the issues debated upon is the social and legal implications of labeling a child as a psychopath. The term is often seen as a "highly pejorative label that implies a biologically based and untreatable condition" (Frick & Marsee, 2006, p. 367). Giving children this label can have a potentially negative impact on them. It can be used to make important decisions for the child such as their responsiveness to treatment or what type of rehabilitative services are provided (Frick & Marsee, 2006). This is a valid argument because judges tend to have most of the power in determining guilt or innocence in juvenile court hearings (Murrie et al., 2007). Their decisions have been found to be swayed in part by clinically relevant factors in
children such as their potential for rehabilitation and whether they show remorse (Sanborn, 1996, as cited in Murrie et al., 2007). For example, Hoge, Andrews, and Leschied (1995) found that youth who had behavior and personality problems, such as callousness, aggression, and inflated self-esteem, were given harsher dispositions (as cited in Murrie et al., 2007). In another example, Lloyd, Clark, and Forth (2010) used the transcripts of 137 court hearings in Canada over a 5-year period to determine if labeling an individual with psychopathy based on the Hare Psychopathy Checklist-Revised (PCL-R; Hare, 2003) scores would influence judges' judgments during sentencing. They found that the cases involving high PCL-R scores were correlated with expert witnesses' rating of treatment effectiveness, which, in turn, affected judges' sentencing. This study shows that psychopathy may have a negative impact on individuals in the justice system (Lloyd et al., 2010).

Even though labels on children and adolescents may influence how people think about a case, it has been argued that there actually may not be any legal consequences to these labels. For example, Murrie et al. (2007) examined the impact that labeling a child as a psychopath had on judges' decision making in legal settings. They looked at the specific labeling effects for a diagnosis of psychopathy versus describing a youth offender as having psychopathic characteristics. They utilized a sample of 273 juvenile and family court judges. All participants were given 1 of 12 vignettes, varying in history of antisocial behavior (minimal vs. substantial), presence of psychopathic characteristics (present vs. absent), and diagnostic label (psychopathy vs. conduct disorder vs. no diagnosis). After being given a mock vignette, each judge filled out a questionnaire regarding his/her likely disposition for the child. The researchers found that judges had little response to diagnostic labels. In most cases, the psychopathy label had the same effect on the child as the conduct disorder label, with no negative effects occurring as a result of it at all
This study shows that despite the concern for the implications of labeling a child as a psychopath, there may not be any actual legal ramifications of it. There have been a few studies (Edens, Colwell, Desforges, & Fernandez, 2005; Murrie, Cornell, & McCoy, 1995; Murrie et al., 2007) discussing potential legal implications of using the label "psychopathy" in court. There have also been studies (Hoge, Andrews, & Leschied, 1995; Sanborn, 1996) discussing the implications that the factors of callousness and remorse have in the courtroom. The literature is still mixed on whether this label may have any legal ramifications. However, the label should still be used with extreme caution, if at all, in the legal system.

**Assessment of Psychopathy and Callous-Unemotional Traits**

The constructs of psychopathy and CU traits are both complex and are still under heavy debate on how to define them within the psychological community. Before these constructs can be defined, there must be an understanding of the assessments that are used to measure them. Psychopathy and CU traits are complex constructs that have been defined and redefined a number of times over the years to get at different aspects of it. Many of the definitions use specific assessments to describe them; therefore, these assessments must be understood first before the constructs could be clearly defined.

**Antisocial Process Screening Device** (Frick & Hare, 2001)

*Description.* The Antisocial Process Screening Device (APSD) is a juvenile psychopathy screening measure created by Frick and Hare in 2001 (as cited in Kotler & McMahon, 2010). The APSD was the first test to measure CU traits in children. Compared to the Hare Psychopathy Checklist: Youth Version (PCL-YV), the APSD is much more easily applicable to both clinical and nonclinical samples (Roose, Bijttebier, Decoene, Claes, & Frick, 2010).
The APSD is designed to detect antisocial processes in children ages 6 to 13. However, it has been used with youth from 4 to 18 years old (Kotler & McMahon, 2010). It is a 20-item questionnaire scored on a 3-point scale. There are three forms that were originally published: a parent form (APSD-P), a teacher form (APSD-T), and a combined form (APSD-C) for the integration of both parent and teacher informants (Muñoz & Frick, 2007). A self-report form (APSD-Y) was later developed for use older children and adolescents because there is evidence that the reliability and validity of child report increases with age while the validity of parent or teacher report decreases (Muñoz & Frick, 2007). The self-report form from the APSD has been the most used form on adolescent populations in different studies (Muñoz & Frick, 2007). Factor analyses have consistently revealed three dimensions, or factors, present in the APSD: a Narcissism dimension (7 items), an Impulsivity dimension (5 items), and a Callous-Unemotional dimension (6 items; Roose et al., 2010).

Reliability/Validity. In a sample of 1,136 children (mean age of 10.7) the properties of the parent report and the child self-report of the APSD were examined (Muñoz & Frick, 2007). For the parent report, the internal consistency of the total APSD score ranged from .85-.88, the CU factor was .72-.76, the Narcissism factor was .79-.82, and the Impulsivity factor was .65-.75. For the child self-report, the internal consistency of the total score ranged from .78-.81, the CU factor was .50-.63, the Narcissism factor was .56-.63, and the Impulsivity factor was .64-.68 (Muñoz & Frick, 2007). The authors also measured the stability of the parent and self-report over a two-year period. For the child self-report, they found the total ranging from .64-.72 and .77-.83 for the parent report (Muñoz & Frick, 2007). The ability of the APSD to predict antisocial behaviors after a 2-year period was also measured. They found .32 and .30 correlations for the
child report and parent report respectively, after controlling for initial levels of antisocial behaviors (Muñoz & Frick, 2007).

Another study using a sample of 77 adolescents (mean age of 15.21) found similar reliability estimates (Vitacco, Rogers, & Neumann, 2003). They also assessed the criterion validity of the APSD as compared to the PCL-YV. They found correlations to range between .47 and .62 for the APSD total score and its subscales. In their study, they also found that the CU and narcissism scales were able to differentiate between maximum security and local detention populations. Using a cutoff score of 15, they were able to achieve high effectiveness scores for the APSD in terms of sensitivity (proportion of adolescents on the APSD who meet criteria for psychopathy based on the PCL-YV), specificity (proportion of adolescents who do not meet criteria for psychopathy based on the PCL-YV), positive predictive power (likelihood that an adolescent who scores above the cutoff on the APSD has psychopathy), and negative predictive power (likelihood that an adolescent who scores below the cutoff on the APSD does not have psychopathy; Vitacco et al., 2003).

Critique. The APSD is a good measure because it is short and easy to administer to screen for child psychopathy through multiple informants (Kotler & McMahon, 2010). It seems to have good reliability and validity for the parent and teacher report forms, but it may be somewhat questionable as a self-report scale. It wasn't originally designed to be a self-report measure and the items on that scale can easily be influenced by response bias (Kotler & McMahon, 2010; Muñoz & Frick, 2007; Vitacco et al., 2003). It is correlated to other psychopathy measures such as the PCL-R and the PCL:YV (Kotler & McMahon, 2010; Muñoz & Frick, 2007; Vitacco et al., 2003).
The limited number of response items for each question may restrict the range of scores on the measure (Roose et al., 2010). While lot of the psychometric research done with the APSD has been done on institutionalized adolescents, there has not been much information on the psychometric properties of the non-referred samples (Muñoz & Frick, 2007). Response bias can greatly affect the self-report form. The APSD was not developed with the self-report in mind, so the items may not be the best and may be introducing response bias (Kotler & McMahon, 2010). Researchers have not been able to clearly identify a stable factor structure with adequate internal consistency for all factors (Kotler & McMahon, 2010).

**Hare Psychopathy Checklist - Revised** (Hare, 2003)

**Description.** The Hare Psychopathy Checklist-Revised (PCL-R) is a 20-item interview assessment tool designed to measure behaviors and inferred personality traits that are fundamental to the construct of psychopathy (Hare, Hart, & Harpur, 1991). The PCL-R is the 2nd edition of a revised version of the PCL, which was a 22-item clinical rating scale designed to assess the traditional view of the construct of psychopathy, based on Cleckley's (1988) conceptualization (Hare et al., 1991). Each item of the PCL-R is scored on a 3-point scale by a clinician with information gathered from a semi-structured interview and institutional files (Hare et al., 1991). The PCL-R consists of two stable factors. Factor 1 consists of interpersonal and affective characteristics such as lack of remorse and callousness. Factor 2 consists of the aspects of psychopathy that are related to an impulsive, antisocial, and unstable personality. Factor 2 is more closely associated with the diagnosis of APD and criminal behaviors (Hare et al., 1991). Within this two-factor system, there are four facets that can also be measured. Facet 1, a measure of interpersonal traits, and Facet 2, a measure of affective traits, both fall within Factor 1. Facet
3, a measure of lifestyle, and Facet 4, a measure of antisocial behavior, both fall within Factor 2 (Patrick, Fowles, & Krueger, 2009).

**Reliability/Validity.** Since the previous edition of the PCL-R along with the PCL were both very well-established measures in terms of validity and reliability, a brief description of the standardization sample that improved upon this will be provided (Hare et al., 1991; Kotler & McMahon, 2010; Patrick et al., 2009). The standardization sample included 5,408 North American male offenders, 1,246 North American male forensic psychiatry patients, 1,218 North American female offenders, and 1,363 English male offenders. Intraclass correlations for the total score and both of the Factor scores were found to be .73 or higher. The content, concurrent, convergent, and discriminatory validity for the Total score and the Factor scores are well-established (Patrick et al., 2009)

**Critique.** The PCL-R is a great and necessary tool for assessing psychopathy in an adult forensic population. It is considered the standard assessment tool for this population (Kotler & McMahon, 2010; Patrick et al., 2009). Limitations include its lack of standardization outside of forensic settings, its lack of response style and validity scales, and its limits on who can use it (Hare et al., 1991; Patrick et al., 2009). Hare et al. (1991) suggested that some training should be done before administration because clinical judgment and inference is required in the scoring. This means that only psychologists with forensic experience can administer this test effectively.

**Hare Psychopathy Checklist: Youth Version** (Forth, Kosson, & Hare, 1994)

**Description.** The Hare Psychopathy Checklist: Youth Version (PCL-YV) is a version of the PCL-R that was created for adolescents ages 13 and older. It was designed to be a full-scale
assessment tool, not just a screening instrument like many of the other measures I'm covering (Kotler & McMahon, 2010).

The PCL-YV combines a review of a client’s institutional chart with a 60-90 minute semi-structured interview (Roose et al., 2010). The raters then score the PCL-YV based on its item definitions and the interview and record data (Skeem & Cauffman, 2003). Results also require a thorough record review to complete (Kotler & McMahon, 2010). The rater then completes a 20 item rating scale scored on a 3-point rating scale (Kotler & McMahon, 2010). There are 4 items on the PCL-YV that particularly target CU traits.

**Reliability.** Skeem and Cauffman (2003) assessed the reliability and the validity of the PCL-YV using a sample of 160 incarcerated male offenders ages 14 to 17. They assessed both the traditional two-factor model of the PCL-YV and Cooke and Michie's revised three-factor model (Skeem & Cauffman, 2003). In regards to the internal consistency of the traditional model, they found the alphas to be .73 for the total score, .64 for Factor 1, and .45 for Factor 2. For the internal consistency of the three factor model, they found the alphas to be .66 for the total score, .57 for the interpersonal factor, .56 for the affective factor, and .22 for the lifestyle factor (Skeem & Cauffman, 2003). In a different sample of 115 adolescent males ages 12 to 16 (mean = 14.5) were used to assess the reliability of the PCL-YV (Kosson, Cyterski, Steuerwald, Neumann, & Walker-Matthews, 2002). Eight interviewers were used along with eight raters to conduct the PCL-YV on participants. The internal consistency of the PCL-YV was found to be high (a = .88).

The test-retest reliability was assessed with a 1-month follow up of 114 of the participants (Skeem & Cauffman, 2003). The intraclass correlation coefficients (ICCs) of the
traditional model were .66 for the total score, .51 for Factor 1, and .74 for Factor 2, indicating fair to good reliability (Skeem & Cauffman, 2003). The ICCs of the revised, three-factor model were .58 for the total score, .55 for the interpersonal factor, .44 for the affective factor, and .45 for the lifestyle factor, indicating just fair reliability estimates (Skeem & Cauffman, 2003).

The inter-rater reliability of the PCL-YV was assessed in two studies. The first used six raters’ scores based upon three videotaped cases (Skeem & Cauffman, 2003). Using ICCs, the authors found an excellent rate of agreement for the Total (ICC = .98) and the Factor 2 (ICC = .95) scores. They found good agreement for the Factor 1 (ICC = .75) scores (Skeem & Cauffman, 2003). The second study measured the correlations between its interviewers and the observers to be a total average of $a = 0.89$, which is also high (Kosson et al., 2002).

**Validity.** Skeem and Cauffman (2003) assessed the divergent validity of the PCL-YV against anxiety and psychosocial maturity. To assess for anxiety, the PCL-YV was correlated with the Revised Children Manifest Anxiety Scale (RCMAS). They found that anxiety was unrelated to the Total score ($r = -0.04$), Factor 1 ($r = 0.05$), and Factor 2 ($r = -0.01$) of the traditional two factor model. They found that it was unrelated to the Total score ($r = -0.02$), Interpersonal scale ($r = 0.05$), Affective scale ($r = -0.01$), and Lifestyle scale ($r = 0.02$) of the three factor model as well (Skeem & Cauffman, 2003).

To assess the divergent validity against psychosocial maturity, several maturity scales were condensed into a block to compare with the psychopathy measures: the Psychosocial Maturity Inventory (PSMI), Future Outlook Inventory (FOI), Weinberger Adjustment Inventory (WAI), Resistance to Peer Pressure Inventory (RPP) (Skeem & Cauffman, 2003). Both the two-factor model of the PCL-YV ($R = 0.37, p < 0.01$) and the three-factor model of the PCL-YV (R
were found to be significantly correlated with the maturity measures (Skeem & Cauffman, 2003).

Kosson et al. (2002) also assessed PCL-YV divergent validity compared to a number of constructs. To assess its correlation in antisocial behaviors, they compared PCL-YV scores to number of nonviolent charges, number of violent charges, total number of charges, and number of different offense types, whether they ever used a weapon, number of different weapon types, age of their first antisocial behavior, and age of first trouble with the law. All factors except for the age of the first antisocial behavior and the age of first trouble with the law were found to be significant (p < .01; Kosson et al., 2002).

They correlated the PCL-YV with various aspects of psychopathology as well. The PCL-YV was found to have a small correlations with the number of oppositional defiant disorder and attention deficit/hyperactivity disorder symptoms as seen in the DSM-III-R (r = .21, r = .22, respectively, p < .05; Kosson et al., 2002). There was a large correlation between the PCL-YV and the number of conduct disorder symptoms (r = .46, p < .001). Using the subscales from the Child Behavior Checklist (CBCL; Achenbach, 1991), the PCL-YV scores appeared to be significantly correlated with the delinquent and aggressive subscales, but not with attention (r = .47, r = .40, p < .001, and r = .10, p > .20, respectively). There was also found to be a correlation between the PCL-YV scores and the Welsh Anxiety Inventory scores (r = .25, p < .01), indicating a significant relationship between the PCL-YV and anxiety (Kosson et al., 2002).

Lastly, the PCL-YV was correlated with interpersonal measures (Kosson et al., 2002). They found significant relationships with an interpersonal measure of psychopathy (r = .37, p < .001). They also found a significant negative relationship with the PCL-YV scores and the
participants' ratings of closeness to parents ($r = -.23, p < .05$). These results indicate that individuals with psychopathic traits are less likely to be closely attached with their parents (Kosson et al., 2002).

Skeem and Cauffman (2003) assessed the PCL-YV's predictive utility by measuring deviant behaviors during a one-month follow-up. They measured institutional infractions, disciplinary actions, and violence. Using an ROC analysis, they found significant values in the two-factor model of the PCL-YV for predicting disciplinary actions (0.67, $p < 0.05$) and violence (0.65, $p < 0.01$), but insignificant values for predicting infractions (0.58). They found similar results in regard to the three-factor model of the PCL-YV (0.65, $p < 0.05$; 0.62, $p < 0.05$; 0.55; for disciplinary action, violence, and infractions respectively; Skeem & Cauffman, 2003).

Critique. The PCL-YV is a very useful and powerful tool to assess psychopathy in youth. As opposed to many other youth psychopathy measures that are used purely as screening devices (e.g., APSD), the PCL-YV is a full scale assessment tool that covers a greater depth of material (Kotler & McMahon, 2010). This is partly evident by the comprehensive interview and the requirement of a complete record review that allows for a more complete evaluation. However, this also adds some weaknesses to the evaluation tool. The use of an interview to assess each client introduces the possibility for interview bias. In addition, since it does require a complete record review, there is limited generalizability to a nonoffender population who do not have official records (Kotler & McMahon, 2010). Along that similar basis, the amount of time it takes to evaluate and administer the PCL-YV limits its use in noninstitutional settings (Roose et al., 2010). Even so, the substantial body of research that supports the PCL-YV makes it a valuable tool.
**Youth Psychopathic Traits Inventory** (Andershed, Kerr, Stattin, & Levander, 2002, as cited in Kotler & McMahon, 2010)

**Description.** The Youth Psychopathic Traits Inventory (YPI) is a self-report inventory designed to identify a categorical subgroup of youth who will persist in frequent and serious antisocial behavior into adulthood (Skeem & Cauffman, 2003).

The YPI is composed of 10 scales consisting of 5 items each. Each of which measures one of ten personality traits that are included in the PCL-R; grandiosity, lying, manipulation, callousness, impulsivity, dishonest charm, remorselessness, unemotionality, irresponsibility, and thrill seeking (Skeem & Cauffman, 2003). The YPI can also be divided into three dimensions; interpersonal, affective, and lifestyle (Skeem & Cauffman, 2003).

**Reliability/Validity.** Skeem and Cauffman (2003) assessed the reliability and validity of the YPI using a sample of 160 incarcerated male offenders ages 14 to 17. They found the internal consistency alpha values as follows; .92 for the total score, .90 for the interpersonal dimension, .77 for the affective dimension, .83 for the lifestyle dimension, .82 for the dishonest charm scale, .61 for the grandiosity scale, .84 for the lying scale, .85 for the manipulation scale, .77 for the remorselessness scale, .68 for the unemotionality scale, .49 for the callousness scale, .71 for the thrill seeking scale, .70 for the impulsiveness scale, and .66 for the irresponsibility scale (Skeem & Cauffman, 2003).

The test-retest reliability was assessed in a one-month follow up interview of 60 of the participants (Skeem & Cauffman, 2003). They found the ICCs to be .74 for the total score, .65 for the interpersonal dimension, .68 for the affective dimension, and .79 for the lifestyle dimension (Skeem & Cauffman, 2003).
Skeem and Cauffman (2003) assessed the covariation between the PCL-YV and the YPI. They found that the YPI was moderately correlated to the two-factor version of the PCL-YV with a total of $r = .24$ (Skeem & Cauffman, 2003). The YPI was also moderately correlated to the three-factor version of the PCL-YV with a total score of $r = .30$ (Skeem & Cauffman, 2003).

Skeem and Cauffman (2003) assessed the divergent validity of the YPI against anxiety and psychosocial maturity. To assess for anxiety, the YPI was correlated with the RCMAS. They found that the YPI total scores ($r = -0.24, p < 0.01$), Interpersonal subscale ($r = -0.19, p < 0.05$), and the lifestyle subscale ($r = -0.31, p < 0.01$) were all significantly negatively correlated with anxiety.

To assess the divergent validity against psychosocial maturity, the PSMI, FOI, WAI, and the RPP were condensed into a block of maturity scales to compare with the YPI. The YPI was found to be significantly correlated ($R = 0.46, p < 0.001$) with the maturity measures (Skeem & Cauffman, 2003).

Skeem and Cauffman (2003) assessed the YPI's predictive utility by measuring deviant behaviors during a one-month follow-up. They measured institutional infractions, disciplinary actions, and violence. Using an ROC analysis, they found significant values of the YPI being predictive of the institutional infractions ($0.66, p < 0.01$) but not with the disciplinary actions ($0.48$) or the violence ($0.51$) behaviors (Skeem & Cauffman, 2003).

**Critique.** The YPI uses multiple items to measure each core personality trait (Kotler & McMahon, 2010). The psychometric data is somewhat stronger than other self-report measures of this type (Kotler & McMahon, 2010). However, there haven't been many studies using this measure so more research needs to be done on it. Further research also needs to be done on the
consistency between the youth report on the YPI and the adult report on other measures (Kotler & McMahon, 2010).

**Child Psychopathy Scale** (Lynam, 1997)

**Description.** The Child Psychopathy Scale (CPS) is a juvenile psychopathy measure created by Lynam in 1997. It was developed to operationalize the personality traits in children and adolescents that are found in the PCL-R (Lynam et al., 2005). It is theoretically based on the PCL-R though the specific items are drawn from both the CBCL and the California Child Q-set (CCQ; Kotler & McMahon, 2010). 12 of the 20 PCL-R constructs were operationalized to create the 12 of the 13 scales the CPS is composed of, each of which comprising of 2 to 4 items (Lynam et al., 2005).

The CPS is a 55 item dichotomous response format (yes/no) questionnaire administered through self-report and parent report (Roose et al., 2010). The CPS was originally composed of 12 scales separated into two factors: Factor 1 consists of glibness, untruthfulness, manipulation, lack of guilt, poverty of affect, callousness, failure to accept responsibility, and Factor 2 consists of parasitic lifestyle, behavioral dyscontrol, impulsiveness, lack of planning, and unreliability (Lynam, 1997). Boredom susceptibility was added as a scale in the revised version of the CPS in Lynam et al.'s (2005) study. The CPS has a 4-5 item scale that assesses callousness specifically. However, the entirety of Factor 1 has been referred to as CU personality traits (Lynam et al., 2005).

**Reliability/Validity.** The original tests of the psychometric properties of the CPS was performed on a sample of 508, high risk, boys in Pittsburg, Pennsylvania (Lynam, 1997). They were given a first screening interview when they were 10 in 1987-88 and the second interview
when they were 12-13 in 1990 (N = 430 at second interview). 44% of the sample population lived in single-parent households and 54% were Black (Lynam, 1997). Using this sample, the relationship between childhood psychopathy, as measured by the CPS, and antisocial behavior was examined. At age 10, significant correlations were found between high CPS scores and the child's likelihood to commit violent acts (r = .32), engage in serious theft (r = .26), and engage in serious forms of general delinquency (r = .32). At age 12-13, significant correlations were found between high CPS scores and the variety (r = .19) and amount (r = .39) of serious crimes the children participated in (Lynam, 1997).

A comparison of three groups was used to examine the relationship between childhood psychopathy and stable antisocial behavior: a group of stable, nondelinquent boys, who were nondelinquent at the time of both interviews, a group of stable, serious delinquent boys, who were seriously delinquent at the time of both interviews, and a group of other delinquents, who didn't meet the criteria for the previous group (Lynam, 1997). A comparison of these three groups on each of the scales showed significant group differences between all three groups with the stable, seriously delinquent boys scoring highest, followed by the delinquent boys, followed by the nondelinquent boys (Total score, F = 23.17; Lynam, 1997).

The internal consistency estimates for the original CPS subscales are as follows: Total score is .91, Glibness is .60, Untruthfulness is .66, Manipulation is .62, Lack of guilt is .25, Poverty of affect is .56, Callousness is .64, Failure to accept responsibility is .65, Parasitic lifestyle is .36, Behavioral dyscontrol is .62, Impulsiveness is .65, Lack of planning is .51, and Unreliability is .53 (Lynam et al., 2005). Using the revised CPS, the internal consistencies for the parent report are; Total is .92, Glibness is .55, Untruthfulness is .55, Manipulation is .66, Lack of guilt is .68, Poverty of affect is .52, Callousness is .63, Failure to accept responsibility is .45,
Parasitic lifestyle is .51, Behavioral dyscontrol is .75, Boredom susceptibility is .47, Impulsiveness is .54, Lack of planning is .57, and Unreliability is .60. For the child self-report, they are: Total is .80, Glibness is .43, Untruthfulness is .14, Manipulation is .61, Lack of guilt is .66, Poverty of affect is .26, Callousness is .44, Failure to accept responsibility is .19, Parasitic lifestyle is .35, Behavioral dyscontrol is .66, Boredom susceptibility is .24, Impulsiveness is .57, Lack of planning is .45, and Unreliability is .21 (Lynam et al., 2005).

Using zero-order correlations and hierarchical regression analyses, Lynam et al. (2005) identified which personality scales from the Big Five Personality Inventory would load with each of the factors of the CPS. They found that Factor 1 was significantly negatively correlated with Agreeableness. Factor 2 was significantly negatively correlated with Conscientiousness and significantly positively correlated with Neuroticism (Lynam et al., 2005). In sum, according to the Big Five Personality Inventory, Factor 1 appears to assess low Agreeableness and Factor 2 appears to assess low Agreeableness, low Conscientiousness, and high Neuroticism (Lynam et al., 2005).

**Critique.** The CPS is a good measure to use in settings where much historical information is not available. It also appears to have good construct and content validity based on its use of multiple items to assess each characteristic (Kotler & McMahon, 2010; Lynam et al., 2005). However, the reliability estimates for the CPS are low for most of the individual subscales, especially for the child self-report. The CPS also has not been assessed with many diverse samples. More research on its use needs to be done.

**Psychopathy Content Scale** (Murrie & Cornell, 2000)
**Description.** The Psychopathy Content Scale (PCS) is a scale to measure the psychopathy construct theoretically based on the content of the PCL-R. The PCS consists of 20 true-false items. The items were drawn from the items on the Millon Adolescent Clinical Inventory (MACI; Millon, 1993; as cited in Murrie & Cornell, 2000) that were conceptually related to the psychopathy construct (Kotler & McMahon, 2010). The PCS is comprised of three subscales; Egocentricity, Antisocial Behaviors, and Substance Abuse (Salekin, Ziegler, Larrea, Anthony, & Bennett, 2003). While there is no official age range, studies have utilized the PCS with children 12 to 18 years old (Kotler & McMahon, 2010).

**Reliability/Validity.** In the initial study examining the psychometric properties of the PCS, a sample of 90 adolescents in an inpatient psychiatric hospital between the ages of 12 and 17-years old was used (Murrie & Cornell, 2000). The PCS had an internal consistency of .87 and was positively correlated ($r = .60$, $p < .001$) with PCL-R scores. The PCS was able to distinguish between high- and low-psychopathy groups, as measured by the PCL-R, in 83% of the cases. It also obtained a sensitivity of 85%, a specificity of 81%, a positive predictive value of 81%, and a negative predictive value of 84% (Murrie & Cornell, 2000).

Another study examined the predictive ability of the PCS using 55 adolescent offenders after a 2-year-period (Salekin et al., 2003). They also examined the predictive ability of a revised 16-item version of the PCS that is more closely aligned to Cooke and Michie's (2001) three factor model of psychopathy (Salekin et al., 2003). This new revised scale has three subscales (egocentricity, callousness, and antisociality) and an internal consistency of .86. The results showed that only the Antisocial Behaviors subscale of the PCS was significantly correlated with recidivism. In the revised 16-item PCS scale, Callousness and Antisociality were significantly correlated with all forms of recidivism but Egocentricity was correlated only with violent
recidivism (Salekin et al., 2003). In conclusion, the revised 16-item PCS was more predictive of recidivism in youth than was the PCS, suggesting that there is some predictive value to Cooke and Michie's (2001) three factor model of psychopathy (Salekin et al., 2003).

**Critique.** The PCS and its revised 16-item scale created by Salekin et al. (2003) are both short, quick measures of psychopathy. The predictive validity of the PCS may be lacking, but it is much better in the revised version. However, it appears that more research may be needed to compare this measure to other measures of psychopathy (Kotler & McMahon, 2010).

**Inventory of Callous-Unemotional Traits** (Frick, 2004, as cited in Kimonis et al., 2008)

**Description.** The Inventory of Callous-Unemotional Traits (ICU) is the first measure to focus solely on CU traits. It was created by Paul Frick in 2004 in order to overcome the limitations of the previous assessments of CU traits in children, the APSD and PCL-YV (Kimonis et al., 2008).

The ICU consists of 4 subscales with 6 items each for a total of 24 items rated on a 4-point Likert scale (Kimonis et al., 2008). The 4 subscales are derived from the 4 most consistently loaded of the 6 total items that make up the Callous-Unemotional subscale of the APSD (Frick, Bodin, & Barry, 2000; Kimonis et al., 2008). Three positive and three negative items were created for each of the 4 items from the APSD (Kimonis et al., 2008). There are five versions of the scale: youth self-report, parent report, teacher report, parent report (preschool version), and teacher report (preschool version; Roose et al., 2010). While the ICU has been translated and generalized across sixteen different languages (English, German, Greek, Chinese, Danish, Dutch, Filipino, Hebrew, Hindi, Hungarian, Italian, Japanese, Romanian, Spanish - European/Catalan, Spanish - North American, and Swedish), it has only been normed on
German, Greek, and English samples (Roose et al., 2010; University of New Orleans, Developmental Psychopathology Laboratory, 2011).

**Reliability/Validity.** The first test of the psychometric properties of the ICU was conducted using a sample of 1,443 adolescents (774 boys, 669 girls) ages 13 to 18 (Essau, Sasagawa, & Frick, 2006). Using exploratory factor analysis, they identified 3 major factors: Callousness, Uncaring, and Unemotional. These three factors are now identified as the three major factors that comprise the ICU (Essau et al., 2006; Kimonis et al., 2008; Roose et al., 2010). Reliability estimates for the internal consistency of the ICU were found to be acceptable; .77 for the total score, .70 for the callousness factor, .73 for the uncaring factor, and .64 for the unemotional factor (Essau et al., 2006). A few of the limitations of this study include the sample utilizing a German translation of the scale, so stability across different translations haven't been assessed, and the sample was predominantly Caucasian, so stability across other ethnicities should be assessed as well (Kimonis et al., 2008).

On another sample of 248 detained or incarcerated juveniles (188 boys, 60 girls) between the ages of 12 and 20, slightly different results were found. The internal consistency was .81 for the total score, .81 for the Uncaring factor, .80 for the Callousness factor, and .53 for the Unemotional factor (Kimonis et al., 2008). The construct validity of the ICU was measured by comparing its scales to the items in the APSD's CU scale. Results showed an r=.45 for the total ICU score, an r=.32 for the ICU Uncaring subscale, an r=.36 for the ICU Callousness subscale, and an r=.14 for the ICU Unemotional subscale (Kimonis et al., 2008).

On a third sample of 455 high school students, ages 14-20, the properties of the ICU’s self-report form and a combined version of all of its forms were examined (Roose et al., 2010).
The internal consistencies are as follows: .83 for ICU total self-report, .89 for ICU total combined, .73 for ICU Unemotional self-report, .77 for ICU Unemotional combined, .77 for ICU Uncaring self-report, .87 for ICU Uncaring combined, .79 for ICU Callousness self-report, and .84 for ICU Callousness combined (Roose et al., 2010). The authors also examined the convergent validity of the ICU with other psychopathic traits measures such as the APSD and the CPS. They found significant positive associations with the CPS and all the APSD subscales (Roose et al., 2010).

**Critique.** The ICU is the only current test that is made up of completely CU items. It is easy to administer and is available in multiple languages (though not well validated in all languages). It was created using a previously well-known and validated measure and it is correlated well with the CU items from those measures. There are a substantial number of items that measure the entirety of the CU trait, which also makes it limiting as a measure of psychopathy as a whole. However, more research on test properties need to be further addressed.

**Interpersonal Callousness Scale** (Pardini, Obradović, & Loeber, 2006)

**Description.** The Interpersonal Callousness (IC) construct was created into a scale by Pardini et al. (2006) based on the Child Behavior Checklist (CBCL). IC is described as an interpersonal style that includes deceitful, manipulative, selfish, superficially charming, remorseless, and lacking empathy (Pardini et al., 2006). Using a confirmatory factor analysis, eight items were taken from the CBCL that represented the interpersonal and affective dimensions of psychopathic traits. The IC scale has both a parent and a teacher-report form (Pardini et al., 2006).
**Reliability/Validity.** During the creation of the scale, Pardini et al. (2006) also examined its psychometric properties. Internal consistencies of the scale were found to have an alpha level of .86-.89. IC's predictive validity was measured using a sample of 1517 first, fourth, and seventh grade boys. After a 3-year follow up of the children, the authors found that IC significantly predicted delinquent behaviors in the seventh grade boys but not the two younger groups.

**Critique.** With IC being a construct that has been measured in different ways, this particular scale has not been used or properly assessed by anyone other than the authors who created it. That being said, many more studies on the reliability and validity of it needs to be done. The IC scale used in the study also doesn't address two major domains of CU traits: lack of empathy and shallow emotions (Pardini et al., 2006).

**Summary**

The assessments of psychopathy and CU traits range greatly in their effectiveness and usefulness. While all of these measures appear to capture aspects of the psychopathic personality, they do not all measure the CU aspect equally. The most validated and widely used measures of psychopathy and CU traits in children and adolescents are the APSD and the PCL: YV. While both of these measures have subscales and items devoted specifically to CU traits, they are not as expansive as the more recent ICU.

The controversy surrounding psychopathy and CU traits in children is continued in the discussion of measures. Some psychologists argue that extending adult psychopathy measures into childhood and adolescents is questionable and is not feasible (Kotler & McMahon, 2010; Seagrave & Grisso, 2002). This is backed up by several problems associated with these
measures. While the factor structures for several measures have been validated, they are neither fully explained nor adequately stable across the different measures (Kotler & McMahon, 2010). Due to a lack of research, it is unclear about the effectiveness of many of the measures with female and ethnic minority populations. More research needs to be done on the construct of psychopathy and CU traits in children and the assessments that measure them.

**Definition of Psychopathy and Callous-Unemotional Traits**

There is a considerable amount of disagreement in the field of psychology about psychopathy. Over the years, several researchers have come up with different, though similar definitions regarding what psychopathy is, and what it looks like. Each of these definitions is important because psychopathy is such complex construct, and each of these definitions helps to identify different aspects of it. Together, they form a more complete construct. This is why there are many different assessments that assess different aspects of the construct as well. Many of the theories and definitions are derived from the assessments created to help capture the concept in individuals. This next section will discuss the definition of psychopathy as defined by various authors throughout the years.

**Psychopathy Origins**

The early accounts of psychopathy are not what many would typically call "psychopathy" today (Patrick et al., 2009). They did, however, call attention to three sets of attributes that influenced modern conceptualizations. The first set highlighted the presence of emotional volatility and impulsive, reactive violence. Characteristics such as explosive, impulsive, and reckless violence were emphasized. There was also the presence of emotional instability and feelings of inadequacy that lead to angry aggression (Patrick et al., 2009). The second set of
attributes emphasized charm, self-assurance, interpersonal dominance, persuasiveness, attention seeking, and affective shallowness (Patrick et al., 2009). Kraepelin (1904; as cited in Patrick et al., 2009) and Schneider (1934; as cited in Patrick et al., 2009) described these people as being very pleasant and charming to others. They did, however, lack morality and loyalty to others and were self-seeking in their ability to manipulate others, often prone to fraudulence and con artistry. The third and final set of attributes highlighted cruelty, emotional coldness, and callous exploitation of others (Patrick et al., 2009). Rush (1812; as cited in Patrick et al., 2009) and Schneider (1934; as cited in Patrick et al., 2009) characterized these individuals as being vicious, cold, and unfeeling, which was attributed to having a core deficit in emotional sensitivity (Patrick et al., 2009).

In Hervey Cleckley's book The Mask of Sanity (1941), the foundation of modern conceptualizations of psychopathy was laid (as cited in Patrick et al., 2009). Based largely on his predecessors' work and his own experiences working with psychopathic individuals in an inpatient psychiatric facility, Cleckley conceptualized the psychopathic personality. He described that psychopathy was the presence of a severe form of pathology masked by an outward appearance of being psychologically well-adjusted. He concluded that only through prolonged observation throughout various situations would a psychopath's true pathology be revealed (Cleckley, 1988). Cleckley developed a list of 16 specific criteria for a diagnosis of psychopathy categorized into three groups: 1) positive adjustment indicators (good intelligence and social adeptness, absence of delusions or irrationality, absence of nervousness, and low incidence of suicide), 2) behavioral deviance indicators (unreliability, sexual promiscuity, impulsive antisocial acts, failure to learn from experience, absence of any clear life plan, and enhanced recklessness when intoxicated), and 3) indicators of emotional unresponsiveness and impaired
social relatedness (lack of remorse or shame, poverty in affective reactions, egocentricity and inability to love, deceitfulness and insincerity, absence of loyalty, and deficient insight. Cleckley stated that the emotional unresponsiveness in people with psychopathic features mitigates much of the angry reactions present in many antagonistic, violent individuals (Cleckley, 1988). This leads to "successful psychopaths" being able to establish careers as various professionals such as physicians, politicians, businessmen, or scholars. Cleckley's perspective of psychopathy emphasized that the presence of an emotional processing impairment is what defined the disorder, not necessarily the violent, cruel, and overt behavioral expression described in previous theories (Cleckley, 1988).

Around the same time as Cleckley, McCord and McCord (1964; as cited in Patrick et al., 2009) came up with a different conceptualization of psychopathy. While sharing in the idea of psychopaths having a deficit in emotional responsiveness, they differed from Cleckley in the sense that their focus was more on the violent criminal behaviors of individuals (as cited in Patrick et al., 2009). They conceptualized psychopathic individuals as cold, abrasive, and aggressively exploitative during interactions with others. Instead of the emotional responsiveness deficit mitigating the entire affective-motivational capabilities (such as in Cleckley's model), the affective deficits demonstrated the individual's social disconnectedness, which led to an increase in a rage response as opposed to a fear response in threatening situations (McCord & McCord, 1964; as cited in Patrick et al., 2009).

**Two Factor Approach**

Psychopathy has never been in any version of the Diagnostic and Statistical Manual of Mental Disorders. The only diagnosis that is somewhat related is Antisocial Personality Disorder
(APD). APD uses mostly behavioral indicators, which are related to psychopathy, to diagnose individuals but authors argue that the construct of psychopathy is composed of so much more than that (Hare, Hart, & Harper, 1991). Many have had concerns about the APD diagnosis, thus inspiring new theories to emerge that helped to capture a more specific set of individuals. In doing this, a new model was developed using a two-factor approach (Hare et al., 1991). Hare et al. (1991) revised the Psychopathy Checklist, which is based on Cleckley’s (1988) conceptualization of psychopathy, in order to provide a description of a psychopathic personality disorder. The resulting PCL-R consists of two factors: Factor 1, reflecting the interpersonal and affective characteristics that are consistent with the traditional model of psychopathy, such as lack of remorse and callousness; and Factor 2, which is highly related to Antisocial Personality Disorder and criminal activity.

Three Factor Model

The construct of psychopathy was once again redefined, this time using a hierarchical model by Cooke and Michie (2001). Using Hare et al.’s (1991) two-factor model from the PCL-R, Cooke and Michie (2001) developed a three-factor model that they stated was more representative of the construct of psychopathy. Through a factor analysis and several cross-validation studies, they determined that the previous breakdown of the PCL-R into two factors is neither sufficient nor necessary to the clinical application of the construct (Cooke & Michie, 2001). The three factors of this model (arrogant and deceitful interpersonal style, deficient affective experience, and impulsive and irresponsible behavioral style) define psychopathy as a personality construct and places much less emphasis on criminality. While criminal behavior is often a correlate or even a consequence of psychopathy, it is not a requirement for the construct, as shown by the representation of psychopaths in society beyond criminal groups (Cooke &
Michie, 2001). Cooke and Michie (2001) suggested that many psychopaths are not criminals, and that they could even be successful in our society, such as in political positions.

**Triarchic Theory**

The most recent conceptualization of psychopathy was developed by Patrick et al. (2009). Taking a developmental psychopathology perspective, they formulated an integrative, triarchic model of psychopathy (Patrick et al., 2009). Being more developmental in nature, this model focuses more on the etiology of psychopathy and how it may present itself in children. Patrick et al. (2009) described a difficult temperament as a child as being a core risk factor for the development of antisocial behaviors and psychopathy later in life. A difficult temperament involves high negative affect and irritability, withdrawal from novel stimuli, poor attentional performance, high activity, and difficulty adapting to changes in the environment. A difficult temperament can lead to increased difficulty and challenges parenting. A more difficult parenting challenge can lead to deficits in children's emotion regulation. They suggested that temperament can lead to a failure of the child to form a secure attachment and an increase of coercive exchanges in the parent-child relationship, both of which further increase the risk of psychopathy. In summary, difficult temperament, failure of the parents to deal with such temperament, family interactions that maintain the child's hyperactivity and other conduct problems, and the early onset of antisocial behavior all lead to the development of psychopathy (Patrick et al., 2009). It has been emphasized that these factors may or may not lead to the phenotypic characteristics of psychopathy, citing the constructs of multifinality and equifinality as fundamental to this practice (that multiple pathways may lead to a given outcome and that similar causal chains can to multiple outcomes; Patrick et al., 2009).
This model described psychopathy as comprised of three major constructs: disinhibition, boldness, and meanness. These constructs each have distinct phenotypic identities that the authors viewed as representing all aspects of psychopathy (Patrick et al., 2009). A child with disinhibition has a "propensity toward impulse control problems entailing a lack of planfulness and foresight, impaired regulation of affect and urges, insistence on immediate gratification, and deficient behavioral restraint" (Patrick et al., 2009, p. 925). This externalized, impulsive-like behavior can be expressed in many different ways, including untrustworthiness, proneness to drug and alcohol problems, and irresponsibility (Patrick et al., 2009). While this construct is present in multiple childhood pathologies, it has been seen by many as a core theme relative to psychopathy (Patrick et al., 2009). It has been seen clinically by others as Factor 2 of the PCL-R, and the Impulsive/Conduct Problems factor of the APSD (Patrick et al., 2009).

Boldness is also known as fearlessness and social dominance (Patrick et al., 2009). It has been defined as a "phenotypic style entailing a capacity to remain calm and focused in situations involving pressure or threat, an ability to recover quickly from stressful events, high self-assurance and social efficacy, and a tolerance for unfamiliarity and danger" (Patrick et al., 2009, p. 926). Children who exhibit this trait are persuasive, brave, and almost immune to any reaction from stressful events. Clinically, there are facets of boldness in the manifestations of Factor 1 of the PCL-R (Patrick et al., 2009).

Meanness is a common term used by many adults and children alike to describe people who are acting wrongly or unfairly to others. Patrick et al. (2009) described meanness as a group of attributes including "deficient empathy, disdain for and lack of close attachments, with others, rebelliousness, excitement seeking, exploitativeness, and empowerment through cruelty" (p. 927). Meanness represents the characteristics of psychopathy that are most overt and
recognizable by others, and usually associated with criminal activity. Children who exhibit this
trait defy authority, lack close relationships, are cruel to people and animals, are actively
exploitative and confrontational, are overtly aggressive, and seek excitement through
destructiveness (Patrick et al., 2009). The PCL-R, along with the PCL-YV, CPS, and APSD, all
emphasize the trait meanness, especially through their affective-interpersonal specific items
(Patrick et al., 2009).

**Importance/Description of Callous-Unemotional Traits**

Callous-Unemotional (CU) traits are present in many conceptualizations of psychopathy
(Cooke & Michie, 1997; Hare et al., 1991; Patrick et al., 2009; White & Frick, 2010; White,
2010). CU traits are one of the three dimensions that make up the entire construct of
psychopathy. Children with high CU traits represent a distinct subgroup of individuals that are
more at risk of developing psychopathy in the future. Some have argued that CU traits in
children are driven by genetically-based neurological factors (Blair, 2005; Pardini, Lochman, &
Powell, 2007), though no longitudinal study examining this has been conducted. In Patrick et
al.'s (2009) triarchic theory, the constructs of disinhibition, boldness, and meanness can be
translated to other conceptualizations such as impulsivity, narcissism, and callousness
respectively, as demonstrated in the APSD (See Figure 1; Kotler & McMahon, 2010). Many see
CU traits, or meanness and the use of others for one's own gain, as a factor that is a crucial
component in the identification and assessment of antisocial and aggressive behavior (Frick &
White, 2008; Hawes & Dadds, 2007; Pasalich, Dadds, Hawes, & Brennan, 2011; Patrick et al.,
2009; White & Frick, 2010; White, 2010). Out of each of the factors and dimensions found to be
associated with psychopathy, CU traits have been found to be most importantly associated with a
distinct subgroup of antisocial adults who exhibit the most severe symptoms (Cooke & Michie,
While both the impulsivity and the narcissism dimensions can be associated with other behavioral problems, the CU dimension appears to be most likely to be associated with psychopathy (White & Frick, 2010).

CU traits are best described by the dimensions or factors created from within the ICU: Callousness, Uncaring, and Unemotionality (See Figure 1; Frick, 2004; as cited in Kimonis et al., 2008). Callousness refers to being mean to others and not feeling guilty about one's own actions. Uncaring refers to not caring about how one gets what he/she wants or who is affected by one's own actions. Unemotionality refers to a lack of emotional expression and understanding of another's emotions (Frick, 2004; as cited in Kimonis et al., 2008). Similarly to psychopathy in adults, CU traits are used to identify a subgroup of youth who develop severe patterns of antisocial and aggressive behavior (Frick, Kimonis, Dandreaux, & Farell, 2003; Frick & White, 2008; Patrick et al., 2009; White & Frick, 2010; White, 2010). Youth who have CU traits can be characterized as having a lack of guilt, lack of empathy, and a callous use of others for one's own gain (Frick & White, 2008). The subgroup of youth with CU traits are distinct from other youth with aggressive and antisocial behavior in several ways: they express more severe behavior (Caldwell, McCormick, Wolfe, & Umstead, 2012; Frick & Morris, 2004; Frick, Cornell, Barry, Bodin, & Dane, 2003; Patrick et al., 2009; White & Frick, 2010), their behavior is more stable across childhood into adulthood (Frick, Cornell, et al., 2003; Frick & White, 2008; Obradović, Pardini, Long, & Loeber, 2007; Patrick et al., 2009), they have emotional processing deficits (Blair, 1999; Frick & White, 2008), they have emotional recognition deficits (Blair, 1999; Frick & White, 2008), they are more likely to use instrumental aggression (Frick, Cornell, et al., 2003; Frick & White, 2008; White & Frick, 2010), they are less responsive to punishment and reward cues (Blair, 1999; Frick & White, 2008; Patrick et al., 2009; White & Frick, 2010), and they
have an inability to express empathy (Frick, Cornell, et al., 2003; Frick & White, 2008; Patrick et al., 2009; Roose et al., 2010; White & Frick, 2010). Because of their severity and stability, CU traits are the most accurate way to identify psychopathy in children (Frick & White, 2008). The other dimensions of psychopathy (boldness/narcissism and disinhibition/impulsivity) are difficult to identify as psychopathy in children due to many children expressing these traits naturally at different developmental levels or stages. With a lot of children being impulsive or egocentric, differentiating between what is a symptom of psychopathy and what is developmentally appropriate is complicated. Using CU traits, as opposed to psychopathy, to identify this more severe subgroup in children seems to be the best option (Frick & Morris, 2004; Frick & White, 2008; Patrick et al., 2009).

Figure 1. Psychopathy and CU traits.

**Lack of Empathy/Emotional Processing**

A key characteristic that is part of the unemotionality factor and is found in many children with high CU traits is a deficit in emotional processing and recognition skills. This has
been observed primarily with the emotion of fear. These deficits may also be associated with a lack of empathy and a diminished response to punishment. This does not necessarily mean that all children with high CU traits are completely stoic or never express any sort of emotion. However, since these children are often very intelligent, it is hypothesized that the children with high CU traits who exhibit emotional expression only do so superficially and sometimes manipulatively (Pasalich et al., 2012).

Low levels of anxiety and physiological arousal may be an influencing factor in developing CU characteristics in children (Kochanska, 1995; Pardini et al., 2007). Studies have found that infants who exhibit low levels of anxiety and arousal have lower levels of concern and caring for others and lower levels of emotional empathy and guilt as they get older (Kochanska, 1995; Young, Fox, & Zahn-Waxler, 1999). These characteristics are congruent with conceptualizations of CU traits, in particular with the uncaring and the callousness factors (Pardini et al., 2007). The low levels of anxiety and physiological arousal in young children is associated with higher levels of CU traits (Kochanska, 1995; Pardini et al., 2007). However, little evidence has been shown that this low anxiety may account for the level of CU traits during children's school-age and adolescent years (Frick, Kimonis, et al., 2003; Pardini et al., 2007). Meaning that the association between anxiety and CU traits is evident in young children, but the association appears to diminish as children get older.

Further research has shown that children with psychopathic traits have low levels of cortisol in the hypothalamic-pituitary axis (HPA; Loney, Butler, Lima, Counts, & Eckel, 2006). Cortisol is a hormone involved in stress response regulation and is indicative of stress reactivity in humans (Dadds & Rhodes, 2008). Thus, Dadds and Rhodes (2008) suggested that low cortisol
levels are associated with a low capacity for fear, punishment insensitivity, and diminished amygadala involvement in attention and responsiveness to emotionally salient stimuli.

The lack of emotion in CU traits, as characterized in the unemotionality factor also shows a neurological response. There is evidence that neural and behavioral responses to emotional stimuli are diminished in people with CU traits (Blair, 2003; Dadds & Rhodes, 2008). In particular, they show a deficit in recognizing and reacting to emotions in faces, especially fear (Blair, 2003; Dadds & Rhodes, 2008). However, children with CU traits are able to accurately identify fearful faces if told to "look at the eyes" of the face (Dadds & Rhodes, 2008; Dadds et al., 2006). This suggests that this deficit may be related to attention problems.

These emotional processing deficits can often translate into a lack of empathy. In a study by Muñoz, Qualter, and Padgett (2011), CU traits were compared to the levels of empathy and the amount of bullying exhibited by youth. The authors hypothesized that they would find deficits related to the sharing of feelings with others (affective empathy) in a high-CU group compared to moderate and low-CU groups. They also hypothesized that they would not find deficits in the knowledge of other's emotions (cognitive empathy). They also examined how CU traits predict direct and indirect bullying while also assessing the influence of empathy. They defined cognitive empathy as the "difference between knowing the 'how' and 'why' of other people's feelings" (Muñoz et al., 2011, p. 184). Affective empathy was defined as "feeling the emotions of another person" (Muñoz et al., 2011, p. 184). The authors also distinguished between direct and indirect bullying. Direct bullying involves physical abuse, similarly to physical aggression. Indirect bullying involves characteristics such as social exclusion, similarly to instrumental aggression (Muñoz et al., 2011). Participants included 201 11- to 12-year-old boys (n=100) and girls (n=101). The children were from two secondary schools from West
Yorkshire, UK (no other sample characteristics were mentioned). Three measures were used throughout the course of the study. First, the Revised Olweus Bully/Victim Questionnaire (OBVQ; Olweus, 1996, as cited in Munoz et al., 2011) was used to assess for bullying. Second, the self-report of the Inventory of Callous-Unemotional traits (ICU) was used to assess for CU traits. Lastly, to assess for participants' levels of empathy, the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006, as cited in Munoz et al., 2011) was used. Using the scores of the ICU, the participants were separated into four groups based on their CU levels: 24 people in the low group, 70 people in the moderately low group, 71 people in the moderately high group, and 36 people in the high group. The researchers found that the high CU group had significantly lower levels of affective empathy compared to all the other groups. They found that the high CU group had significantly lower levels of cognitive empathy and significantly higher levels of direct bullying compared to the two low groups, but not the moderately high group, thus concluding that the results were nonsignificant (Muñoz et al., 2011). They found that there were no group differences among the levels of indirect bullying. The authors ultimately concluded that CU traits are associated with affective empathy and are partially associated with cognitive empathy. They also concluded that CU traits are positively associated with direct bullying but not indirect bullying (Muñoz et al., 2011).

In spite of these findings, a recent study found that boys with high CU traits more frequently expressed negative emotions, such as fear and sadness, when having conversations with their caregivers (Pasalich et al., 2012). The authors suggested that this may be due to the children with low CU traits being more adversely affected by negative emotions and less likely to want to talk about it (Pasalich et al., 2012). CU traits are associated with deficits in recognizing and affectively responding to emotions such as fear and sadness (Blair, 1999).
traits were not associated with how much children talked to their parents overall or how often they expressed positive emotions during conversations with their parents (Pasalich et al., 2012). Considering the possibility of superficial or manipulative emotion talk, the authors performed a post hoc analysis to assess the genuineness of the children's conversations. They, however, found no differences in genuineness between high and low CU children (Pasalich et al., 2012). They also found that CU traits are not associated with poverty in verbal expressions of emotions; in other words, children with CU traits express emotions while talking just as much as do children without CU traits (Pasalich et al., 2012).

**Stability**

In order for CU traits to be designated as a distinguishing feature of someone's character, there needs to be some level of stability to ascertain that it is actually a relevant factor (Frick & White, 2008; Seagrave & Grisso, 2002). Assessing for CU traits in childhood need to be relevant to future outcomes later or in adulthood (Frick & White, 2008). Several studies have been done demonstrating that CU traits are relatively stable throughout childhood into adulthood (Burke, Loeber, & Lahey, 2007; Dadds, Fraser, Frost, & Hawes, 2005; Frick, Kimonis, et al., 2003; Obradović et al., 2007; Pasalich et al., 2011).

For example, Burke et al. (2007) conducted a longitudinal study to test the hypothesis that interpersonal callousness (IC) in youths would be a good predictor of psychopathy in young adulthood. IC refers to the more interpersonal aspect of CU traits (Burke et al., 2007). Participants were 177 boys from 7 to 12 years of age who were assessed annually until age 17. Each year, the National Institute of Mental Health Diagnostic Interview Schedule for Children (DISC-C; Costello, Edelbrock, Dulcan, Kalas, & Klaric, 1987; as cited in Burke et al., 2007) was administered along with several other measures, including the PCL-R and the parent and teacher
reports of the CBCL. They found that IC, as predicted by teachers, was successful in predicting young adult psychopathy scores after accounting for CD symptoms, child or parent psychopathology, parenting behaviors, and demographic factors. This was not true for parent-rated IC scores. The researchers ultimately found that callousness predicted psychopathy as measured by the PCL-R in young adults (Burke et al., 2007).

In another study examining callousness, Dadds et al. (2005) tested the hypothesis that CU traits are an early precursor of antisocial behavior. A total of 1,359 Australian boys and girls between the ages of 4 and 9 participated. They were divided by gender and age into 4 groups: (a) 4-6 year old boys, (b) 7-9 year old boys, (c) 4-6 year old girls, and (d) 7-9 year old girls. The participants were primarily Caucasian and of European descent with less than 10% being Asian, Indigenous, or Pacific Islander. The researchers administered the APSD and the Strengths and Difficulties Questionnaire (SDQ; Goodman, 1997; as cited in Dadds et al., 2005), which measures general behavior and emotional functioning, to the parents to initially assess the children. Twelve months later, they were given the same measures, in addition to the Diagnostic Interview Schedule for Children, Adolescents, and Parents (DISCAP; Holland & Dadds, 1997; as cited in Dadds et al., 2005). They found that CU traits predicted antisocial behavior 12 months later after controlling for antisocial behavior at Time 1. It was consistent most with the group of younger boys and least with the younger group of girls. They suggested that this may have been due to the low level of CU traits found in the girls. For the older groups, girls' CU traits were more predictive of antisocial behaviors than boys' CU traits (Dadds et al., 2005). They concluded that CU traits helped to predict antisocial behavior. Since the sample consisted only of upper-middle class, white Australian children from one city, the generalizability of this study is limited.
Obradovic et al. (2007) conducted another longitudinal study to test the hypothesis that IC behaviors are stable over time. The sample consisted of 503 first-grade boys from Pittsburgh, Pennsylvania. The participants were 57% African American and 43% Caucasians, with 94% living with their biological mother and 39% living with their biological father. The participants were assessed every year until they were 16 years old. To assess for IC, the participants' parents and teachers were given the Interpersonal Callousness scale created by Pardini et al. (2006) based on items from the CBCL and the Teacher Report Form (Achenbach & Edelbrock, 1986; as cited in Obradovic et al., 2007). Results indicated a significant positive correlation between IC behaviors in both the parent and teacher reports. The researchers concluded that IC behaviors were significantly stable across all the years of assessment (Obradović et al., 2007).

This research helps to demonstrate how lasting CU traits are, even in children. There are, however, some limitations to the stability studies. Several of the studies used only one or two forms of assessing CU traits, such as parent or teacher report. A multi-method approach including self-report and observational ways of measuring CU traits would be more inclusive of the entire construct (Hawes & Dadds, 2007). The research suggests that while CU traits are relatively stable, they may not be concrete throughout a child's lifetime (Skeem, Polaschek, Patrick, & Lilienfeld, 2011). CU traits, if left alone, do remain stable throughout childhood into adulthood, though that doesn't mean that they cannot change given the right circumstances.

**Predictive Ability**

It has been argued that CU traits are key in identifying children who are more likely to express antisocial and aggressive behaviors in the future (Caldwell, 2011; Frick, Cornell et al., 2003; Hawes & Dadds, 2007; White & Frick, 2010; White, 2010). Frick, Cornell, et al. (2003) examined the ability of CU traits to predict conduct problem severity, severity and type of
aggression, and delinquency. They assessed a sample of 98 children for CU traits and level of conduct problems at an initial assessment and at a 1-year follow up. They found that the presence of CU traits enhanced the prediction of later delinquency. The children with high CU traits initially had higher rates and increased severity of conduct problems at the follow-up (Frick, Cornell, et al., 2003). CU traits were better at predicting delinquency in children than initial conduct problems. These results suggest the importance CU traits in identifying a group of children who are at greater risk for delinquency. This can help to target individuals for preventative efforts, even if they do not yet show significant conduct problems (Frick, Cornell, et al., 2003).

Some have found that the relationship between CU traits and future antisocial outcomes are nonsignificant after accounting for other disruptive behaviors (Kolko & Pardini, 2010; Loeber, Burke, & Pardini, 2009). For example, in a study by Kolko and Pardini (2010), treatment outcomes of individual levels of CU traits were compared to individual levels of ODD, conduct disorder (CD), and attention deficit-hyperactivity disorder (ADHD). It was predicted that children with high levels of CU traits during pretreatment would have increased levels of CD and antisocial behavior at posttreatment (Kolko & Pardini, 2010). The sample included 177 children aged 6-11 diagnosed with either ODD or CD. Treatment included seven treatment modules (medication for ADHD, child CBT/skills training, parent management training, family psychoeducation and skills training, school programming/consultation, peer relations/community activities development, and case/crisis management) and was designed to reduce harsh discipline and increase parental warmth and involvement (Kolko & Pardini, 2010). CU traits were measured using the teacher report version of the APSD. They found that CU traits didn't significantly predict any treatment outcome after controlling for ADHD, CD, and ODD (Kolko
& Pardini, 2010). These results may suggest that the predictive ability of CU traits may not necessarily be as good as previous research has found (Kolko & Pardini, 2010). However, CU traits were only assessed using teacher reports of young children. It is unclear whether these results would be the same using other informants, such as parents or self-reports, or if assessed with adolescents. There needs to be more long term follow-up studies that take ADHD and other disruptive behavior disorders into account (Kolko & Pardini, 2010).

Severity

As previously stated, CU traits identify a subgroup of individuals who express a more severe form of antisocial behavior, making it more difficult for treatment to have significant effects (Caldwell et al., 2012; Caldwell, 2011; Haas et al., 2011; Masi et al., 2011). CU traits have been associated with much more severe conduct problems, delinquency, and aggression (Frick & White, 2008; Frick & Dickens, 2006). These individuals do not just have more severe behavior, but they are much more resistant to interventions typically used for conduct problems in youth (Haas et al., 2011; Hawes & Dadds, 2005, 2007; Masi et al., 2011; Waschbusch, Carrey, Willoughby, King, & Andrade, 2007; White, 2010).

For example, Hawes and Dadds (2005) assessed the severity and the treatment response of children with CU traits. They assessed this through a sample of 49 Australian boys aged 4-8 with the mean of 6.29-years-old. All of the children also met the criteria for Oppositional Defiant Disorder (ODD). All of the children's parents went through a manualized parent-training intervention consisting of nine 1-hour sessions. The researchers came to several conclusions. First, they found that the children with higher CU scores had more severe antisocial and ODD symptoms both pre- and post-treatment. Second, they found that these children also had an increased likelihood of having ODD at post-treatment. Third, CU traits were found to decrease
the effectiveness of time-out procedures, regardless of the severity of the conduct problems. CU traits were not found, however, to make a difference in the effectiveness of reward strategies. Lastly, they found that CU traits had a negative correlation with the expression of negative affect during time-out implementation but only during post-treatment and follow-up. The researchers concluded that the children who had high CU traits that remained stable throughout treatment had the poorest outcomes. These findings suggest that children with high CU traits may be less responsive to parenting practices and that CU traits are associated with a uniquely severe pattern of problems (Hawes & Dadds, 2005).

In another study, the moderating effect of CU traits on the relationship between certain risk factors and conduct problems in girls was examined over a 5-year period (Kroneman, Hipwell, Loeber, Koot, & Pardini, 2011). They used a sample of 1,233 7- to 8-year-old girls (52.2% African American, 42% Caucasian). Using the APSD to measure for CU traits, they found that CU traits were associated with high levels of ODD/CD symptoms. They also found that the girls that had high CU traits and were also exposed to low levels of parental warmth exhibited particularly more severe ODD/CD symptoms than the children without CU traits (Kroneman et al., 2011). Children with CU traits are more likely to have more severe behavioral problems, even when faced with similar risk factors as children.

Another example of children with CU traits exhibiting a more severe pattern of behavior problems comes from a study by Stellwagen and Kerig (2009). They attempted to determine if CU traits are associated with higher rates of the usage of seclusion ("involuntary confinement in a locked room") and restraints ("any impediment to a patient's freedom of movement imposed by staff") during treatment of aggressive child psychiatric inpatients. The authors hypothesized that CU traits was the major factor that could predict the need for physically restrictive treatment
measures. The sample included 101 children and adolescents (ages 8-16; 65 boys and 36 girls). They were 65% Caucasian and 29% African-American, the rest was either Hispanic or multiracial. There were also all recruited from a psychiatric hospital for children with aggressive and violent behavior in the SE United States. After assessing the children over a 20-day period, they found that CU traits were positively associated with the number of seclusions and restraints that had to be used with the children (Stellwagen & Kerig, 2009). Even though this is an isolated study with several limitations (e.g., sample size and population), it further demonstrates the increased severity of behavior problems that children with CU traits exhibit.

**Treatment of Callous-Unemotional Traits**

The treatment of CU traits can be approached in two different ways: decreasing the levels of CU traits in children or decreasing the behavioral problems that are associated with these traits. The former seems to be the more difficult task due to the nature of CU traits being particularly stable and severe. Therefore, most of the research regarding the treatment of CU traits has focused on disruptive behavior symptom reduction. There has, however, been some evidence that certain treatments and characteristics in parents can help to decrease CU traits over time in children. Similarly as in other children with conduct problems, parents and their parenting style plays a large role in the development and treatment of CU traits. Some researchers have found that children who are exposed to harsh parenting practices may be at greater risk for developing CU traits (Frick, Cornell, et al., 2003; Pardini et al., 2007).

**Parenting/ Behavioral Interventions**

Parenting interventions are often seen as the best practice in managing early violent and aggressive behavior in children who may not necessarily have CU traits (Dadds & Rhodes,
These interventions have led to positive changes in children and successfully reduce aggressive and antisocial behavior (Dadds & Rhodes, 2008). Most parenting interventions focus on a few key elements: positive engagement between parents and their children; promotion of prosocial behavior in children; and the use of non-violent, sensitive discipline strategies by the parents (Dadds & Rhodes, 2008). Additionally, increased warmth and low levels of harsh discipline have been associated with decreases in CU traits over time (Pardini et al., 2007).

However, there has been evidence that shows that parenting interventions have less of an effect on children with CU traits (Dadds & Rhodes, 2008; Frick, Cornell, et al., 2003; Hawes & Dadds, 2005; Pasalich et al., 2011). Hawes and Dadds' (2005) research suggests that young boys with conduct problems and high levels of CU traits may benefit less from behavioral parent training. Another study examined the relationship between CU traits and parenting practices across childhood (Hawes, Dadds, Frost, & Hasking, 2011). The sample consisted of 1008 3- to 10-year-old Australian children (52.6% boys). After a 1-year long study measuring parenting practices and CU traits of the children, the researchers found that CU traits did account for change in parenting practices over time and vice-versa. After controlling for other factors, such as externalizing factors and common ecological risk factors, they found that CU traits and parental practices inversely predicted changes in different domains (Hawes et al., 2011). CU traits predicted increases in corporal punishment in older children and increases in inconsistent discipline regardless of age or sex. They also predicted reduced levels of parental involvement but only in the older boys and younger girls. Some parenting practices predicted changes in CU traits as well. Positive parenting and parental involvement both predicted a decrease in CU traits over time. Poor monitoring/supervision was associated with increased levels of CU traits in younger children only. Based on the predictive utility of parenting on CU traits, these findings
suggest that parental involvement is important to the pattern of CU traits (Hawes et al., 2011). They concluded that high levels of CU traits drive change in the quality of parenting over time indicating that CU traits interact with parental processes throughout development (Hawes et al., 2011; Pardini et al., 2007).

In yet another study using a sample of 49 families of 4- to 8-year old boys diagnosed with ODD, the stability and malleability of CU traits were examined during a parent training intervention (Hawes & Dadds, 2007). They split the children up into three groups based on their CU trait trajectory: Stable-low CU (if the child scored below the median cut-point line at pre and posttreatment); Unstable CU (if the child scored above median at pretreatment and below median at posttreatment); and Stable-high CU (if the child scored above median line at pre and posttreatment). The researchers found that the CU traits in children remained relatively stable throughout treatment and 6 months following treatment. However, the researchers did identify a group of children with high CU traits that exhibited a marked decrease over time (the unstable CU group). The authors suggested that this may be because the CU traits were over-reported by parents at pretreatment due to high stress at the time of referral (Hawes & Dadds, 2007). Ultimately, they concluded that parent training had little to no effect on decreasing the levels of CU traits the children exhibited at all.

In spite of parenting interventions having less of an effect on children with CU traits, targeted interventions to affect specific parenting strategies may still promote change in them (Hawes et al., 2011; Pardini et al., 2007; Pasalich et al., 2011; Salmon, Dadds, Allen, & Hawes, 2009). Pardini et al. (2007) found some things to target in their study of the interaction of anxiety and CU traits with parental warmth and involvement. Using a sample of 120 9- to 12-year-old African-American and Caucasian boys and girls, CU traits were examined across a 1-year
period. They found that CU traits were relatively stable over time and that they predicted an increase in antisocial behavior (Pardini et al., 2007). They also found that children who were exposed to low levels of corporal punishment and high levels of parental warmth and involvement were associated with decreased levels of CU traits and antisocial behavior across the 1-year period. They also found that low levels of anxiety were associated with increased levels of CU traits in the children who described their parents as lacking warmth and involvement after controlling for antisocial behavior. Parental use of corporal punishment was associated with an increase of CU traits regardless of anxiety (Pardini et al., 2007).

More specifically, children's understanding of emotions can also be increased with their parents’ help (Dadds & Rhodes, 2008; Salmon et al., 2009). Teaching parents to 'emotion talk' with their children has been shown to increase emotional competence in children with oppositional problems (Salmon et al., 2009). Targeted training in directing people's attention to emotionally significant stimuli can also lead to changes in people's ability to read and understand these emotions (Dadds & Rhodes, 2008; Dadds et al., 2006). Similarly, when adults with autism are trained to attend and interpret emotional faces, accuracy levels increased and changes in neural activity was observed (Bölte et al., 2006). Training can have a significant short term effect in a person's ability to process emotions; however, other changes, likely involving parents' interactions with their children, may be needed to make any long term changes (Dadds & Rhodes, 2008). Even though this has yet to be studied, this training may be able to help children with high CU traits because of the similar emotional processing difficulties they share.

Even though parenting strategies seem to be associated with positive outcomes in children with high CU traits, the tendency that these children are insensitive to emotional stimuli leads to punishment procedures such as timeout being more difficult and less effective than they
are with other children (Dadds & Rhodes, 2008; Hawes & Dadds, 2005). A combination of intervention techniques is necessary such as parent training in addition to behavioral training with the children directly (Dadds & Rhodes, 2008; Waschbusch et al., 2007).

**Medication Interventions**

Medication may also play a role in the treatment of CU traits. Emotional attention and understanding, which is a key deficit in children with CU traits, can be improved biochemically through the neuropeptide oxytocin (OT; a neurohypophyseal peptide that is associated with social behavior areas of the brain; Dadds & Rhodes, 2008; Domes, Heinrichs, Michel, Berger, & Herpertz, 2007). When two groups were given either OT or a placebo, the OT group members were able to better infer the emotion state of the faces of the actors (Dadds & Rhodes, 2008; Domes et al., 2007). Using both biochemical and behavioral interventions to enhance one's emotion recognition ability may be the best, most practical option (Dadds & Rhodes, 2008).

A combination of behavioral and medical interventions has been shown to have a positive effect on children with CU traits. For example, Waschbusch et al. (2007) conducted a study to assess whether children with ADHD and early onset conduct problems (ADHD/CP-only) reacted to treatment in a way similar to children with ADHD, early onset conduct problems, and callous/unemotional traits (ADHD/CP-CU). The authors wanted to test their differences in response to behavioral therapy (BT) alone and in combination with a stimulant medication. They hypothesized that the children with ADHD/CP-CU would show a less positive response than the children with ADHD/CP-CU. The participants include 37 children (age 7-12; 29 boys and 8 girls). The children were 90% Caucasian and all attended the summer treatment program at Dalhousie University. Every child was diagnosed with ADHD and either ODD or CD. Based on the APSD, the participants were divided into two groups; 19 in the ADHD/CP-only and 18 in the
ADHD/CP-CU. The treatment of the children was as follows: The participants were all receiving BT in a summer treatment program every weekday from 8-5. They were also given either a placebo, .3mg of methylphenidate (MPH; BT-low), or .6 mg of MPH (BT-high) twice daily depending on the condition they were designed that day. The counselors and teachers rated each child throughout each day based on adherence to rules, amount of work completed, and the frequency of specific behaviors (e.g., noncompliance, complaining, and helping/sharing). The authors found that the ADHD/CP-CU children exhibited more antisocial behaviors than the ADHD/CP-only children in the BT only condition. They also found that there were no differences between the two groups in either of the two medication conditions. Overall, they found that the ADHD/CP-CU children were less likely to be normalized by treatment than the ADHD/CP-only children (Waschbusch et al., 2007). Based on their results, the authors suggest that BT alone is not enough to treat children with CU traits and that more needs to be done. Thus, the combination of BT and medication may be needed when intervening with children with CU traits (Waschbusch et al., 2007).

**Summary**

Even though children with CU traits are more resistant to treatment, child psychologists still believe that CU traits and, to some extent, psychopathy in children, can be treated (Salekin, Rogers, & Machin, 2001). Some researchers have examined the effectiveness of treatment in children with high CU traits (Caldwell et al., 2012; Dadds & Rhodes, 2008; Frick, Kimonis, et al., 2003; Hawes & Dadds, 2005, 2007; Pardini et al., 2007; Waschbusch et al., 2007; White, 2010). In the limited research on treating CU traits, there has been evidence of the severity of CU traits being mitigated by treatment (Pardini et al., 2007; Waschbusch et al., 2007). However, most of the research on the treatment of CU traits has been done with interventions known to
have a positive effect on similar symptoms. Additionally, there is also promise that certain aspects of CU traits (e.g., emotion recognition and emotional processing) can get better through the use of proper training (Bölte et al., 2006; Dadds & Rhodes, 2008; Dadds et al., 2006; Salmon et al., 2009).

There appears to be much potential for the decrease of CU traits and its symptoms in children. Several studies have been discussed that suggest potential change in different aspects of CU traits through the use of interventions, such as emotional processing and behavioral problems. However, much of the research hasn't been done or proven to be successful on children with CU traits specifically (e.g., attempts to improve the emotional processing and recognition abilities of children with CU traits). There needs to be a greater focus on using many of the potential interventions discussed here on children with CU traits to assess their effectiveness. Additionally, the generalizability of the research thus far has not been great. The samples of much of the research are limited in its size and diversity aspects (e.g., other races, genders). These limitations make it difficult to be conclusive on what kind of an effect specific interventions and treatments may have on children with CU traits.

**Conclusion**

Callous-Unemotional traits identify a distinct subgroup of children who express a more severe form of antisocial behavior. This behavior is characterized as being particularly violent, cruel, uncaring, manipulative, and even charming. CU traits have been found to be associated with severe conduct problems, deficits in emotional processing, and an increased risk of future problems. CU traits also appear to be fairly stable throughout childhood and into adulthood, if left untreated. Children with CU traits have a higher resistance to treatment, thus making it very difficult to affect change in their behavior (Caldwell et al., 2012; Caldwell, 2011; Dadds et al.,
Psychopathy and, more specifically, CU traits are known to be a quite stable construct tied to one's personality and temperament (Patrick et al., 2009). There is some evidence of CU traits being decreased across a child's developmental period (Frick & Morris, 2004; Hawes et al., 2011; Hawes & Dadds, 2007; Pardini et al., 2007; Pasalich et al., 2011). This may suggest that CU traits are not immutable. In particular, parenting practices have been associated with reductions of CU traits over time (Pardini et al., 2007). While most research has identified the stability of CU traits, there is evidence that some children may have CU traits that decrease over time, and that there may be environmental factors that can account for and differentiate between the two (Frick, Kimonis, et al., 2003; Pardini et al., 2007). This shows that children with CU traits can be treated and that their behaviors can change for the better. Intervening early, when children are most malleable, would have the most positive effect.

**Future Directions**

There is still much research that needs to be done involving CU traits in children, especially in regards to treatment. An important preliminary step has been made with the previous research in understanding the treatment response of CU traits in children (Waschbusch et al., 2007). It is difficult to determine the best method of treatment. It is clear that a multi-treatment approach is necessary due to the complexity and severity of the construct. This should incorporate parent training at the forefront. Increasing emotion talk and parent-child warmth and involvement and decreasing harsh punishment practices in parents can result in an increase of positive behaviors in children with CU traits (Dadds & Rhodes, 2008; Pardini et al., 2007; Pasalich et al., 2011; Salmon et al., 2009). Parent training is just one way to affect change.
Another form of treatment that may be effective and should be further studied is behavior training with the children's themselves to do things such as increase their emotional attention and decrease their conduct problems (Dadds et al., 2006; Kroneman et al., 2011; Waschbusch et al., 2007; White, 2010). It has also been suggested by Waschbusch et al. (2007) that stimulant medication can help to normalize the behaviors of children with CU traits. Future research should include treatments using a combination of these methods in order to determine their effectiveness on children with CU traits.
References


