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Factors Predicting Therapeutic Alliance in Antisocial Adolescents

A Thesis

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

Master of Science
in
Psychology

by

Tiffany P. Simpson

B.S., B.A., Louisiana State University, 2002
M.A., Texas Southern University, 2005

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Abstract

Therapeutic alliance is a robust predictor of future therapeutic outcomes. While treatment of normal children and adolescents is often hard, treating antisocial youth is especially difficult because of the social, cognitive, and emotional deficits experienced by these youth. This study investigated whether differing levels of callous-unemotional (CU) traits influenced the formation of therapeutic alliance in a sample of 51 adjudicated youth in juvenile institutions. Also, we tested whether therapeutic alliance influenced success in the institution and whether this association differed based on levels of CU traits. Results revealed that CU traits and self-reported delinquency were both modestly related to institutional infractions. Children low on both dimensions showed the lowest levels of institutional infractions. Additionally, these findings suggest that children high on both CU traits and delinquency reported better therapeutic alliance, but that youth with high CU traits committed more institutional infractions, despite their level of therapeutic alliance.

KEY WORDS: Subtypes of conduct disorder; callous-unemotional traits; therapeutic alliance; treatment success.

What is Therapeutic Alliance?

Clinical research has suggested that therapeutic alliance is a robust predictor of future therapeutic outcomes. Therapeutic alliance is defined as the collaborative relationship, facilitating positive change, which develops between a client and his or her therapist (Florsheim, et al., 2000). In his presidential address to the 1975 Annual Conference of the Society for Psychotherapy Research entitled *The Working Alliance: Basis for a General Theory of Psychotherapy*, Edward Bordin (1975) defined the concept of therapeutic alliance using three interlocking components: bonds, tasks, and goals. *Bonds* refer to interpersonal attachments such as liking and trusting. Agreements or consensus between therapist and client with respect to *tasks* in therapy and the contribution of these tasks to the resolution of the client's problem is also an essential concept. Lastly a consensus on the short and long-term *goals* and expectations between the therapist and client is essential in creating a positive therapeutic alliance (Horvath, 2000). Strong alliances are associated with greater therapeutic change (Horvath & Bedi, 2002). Facets of treatment other than outcome are also likely influenced by therapeutic alliance, such as premature termination from treatment (Kazdin, Holland, & Crowley, 1997) and treatment acceptability (Kazdin, Marciano, & Whitley, 2005). Treatment acceptability refers to judgments by the client as to which treatment procedures are fair and reasonable for the problem.

What Predicts Therapeutic Alliance in Youth?

Studying the therapeutic relationship in child therapy raises special challenges as different perspectives (child, therapist) on the child-therapist alliance are not likely to be highly related and it is not clear if one of these perspectives is more predictive of positive outcomes than the other (Chu et al., 2004; Shirk & Karver, 2003). Forming positive therapeutic alliances with children and adolescents may also be difficult because youth do not voluntarily initiate

treatment. Often youth are brought into treatment by a parent or caregiver (Bickman et al., 2004) and research has shown that an important pretreatment characteristic of treatment alliance is treatment motivation (Orlando, Chan, & Morral, 2003). Treatment motivation refers to intrinsic factors relating to the desire for change. Such factors include fears about health, personal safety, and desire for a better future (Melnick et al., 1997). Results from Orlando et al (2003) suggested that perceived need for services was also predictive of participation. It appears important that youth treatment programs provide safe environments, where participants believe that they are getting the help that they need.

There are several characteristics that have been associated with positive therapeutic alliance specifically with adolescent clients (Everall & Paulson, 2002). Therapist characteristics found to be most preferable to adolescents include respect, time shared, openness, role characteristics, trust, responsibility, and familiarity (Martin et al., 2006). Therapists who are successful in the formation of therapeutic alliances with adolescents often use strategies such as providing empathy, genuineness, nonjudgmental stance, respect for adolescent perspectives, and choice in decision-making (Liddle & Schwartz, 2002; Oetzel & Scherer, 2003).

Adolescent-Onset Antisocial Youth

While forming therapeutic alliances with adolescents may be difficult in general, it may be especially difficult for youth with serious conduct problems. One of the most common reasons children are referred to mental health clinics is for behaviors associated with conduct disorder (Frick, 2006). Conduct disorder is defined as a repetitive pattern of behavior in which the basic rights of others are violated (American Psychological Association, 2000). Researchers have shown that youth with conduct disorder can often be separated into two categories: child onset and adolescent onset groups. The adolescent onset group has been shown to have fewer

dispositional and contextual risk factors (Frick, 2006) and also seem less likely to persist in antisocial activities beyond adolescence in comparison to the childhood onset subtypes (Moffitt, 1993). The adolescent onset youth engages in antisocial behavior in an attempt to gain adult status and a sense of independence and maturity in a way that is maladaptive but encouraged by an antisocial peer group (Moffitt, 1993). The behavior of these youth seems to be an exaggeration of typical adolescent processes and is not the result of enduring deficits; therefore the behavior of those in the adolescent onset group is less likely to persist into adulthood (Frick, 2004a).

According to Moffitt's (1993) theory of adolescence-limited offenders, the onset of antisocial behavior occurs near puberty in response to social and developmental issues rather than traits or personal characteristics. With the exception of infancy, adolescence represents the most rapid and pervasive developmental changes involving physiological, cognitive, emotional, and social transformations (Holmbeck & Updegrave, 1995). According to Moffitt, most adolescents engage in some delinquent activity during this time period in an attempt to overcome their child-like status in society. Teenagers are "trapped in a maturity gap" whereby they are physically capable of adult roles but find themselves socially compelled to remain child-like. Delinquency is one-way adolescents attempt to assert their autonomy and independence.

However all adolescents do not engage in the same frequency or severity of delinquency. There are several individual and contextual characteristics that can contribute to heightened levels of delinquency among adolescents. Poor performance in school and school failure (Dahlberg & Potter, 2001; Herrenkohl et al., 2001), as well as low self-esteem (Arbuthnot, Gordon, & Jurkovic, 1987) are some individual risk factors for the development of adolescent onset conduct disorder. Contextual risk factors include low family cohesion and high family

conflict (Farrington, 1998), as well as involvement with deviant peers (Dahlberg & Potter, 2001). Living in areas with high crime rates, poverty, and dense living conditions are associated with an increased likelihood of adolescent antisocial behavior and delinquent acts (Duncan & Aber, 1997).

While the treatment of any adolescent would be a daunting task because of the social, cognitive, and physical changes occurring during this developmental stage, the aforementioned factors that lead to the development of adolescent-onset conduct disorder make treatment much more difficult for youth with this disorder. There are several reasons why engaging in therapeutic relationships with youth who show adolescent-onset conduct disorder may be especially difficult. First, this type of conduct disorder is an exaggeration of the authority conflict typical of adolescence. Seeking help, admitting to psychological problems, and engaging constructively in psychotherapy may prove uncomfortable for adolescents striving to attain autonomy. This may be particularly hard for adolescents who have a difficult time attaching to others and little experience engaging constructively with adults (Oetzel & Scherer, 2003). Second, adolescents who have been mandated to treatment are less likely to participate fully, collaborate, or engage in positive interactions throughout the treatment process (Alexander & Luborsky, 1986; Marzialli, 1984; O'Malley, Suh, & Strupp, 1983). Troubled adolescents may also be less cognitively and socially mature and less able to understand the rationale behind treatment and the need for it. Lastly, youth with adolescent-onset conduct disorder may also have other characteristics that interfere with treatment alliance. Youth with conduct disorder often exhibit histories of substance abuse, deviant peer group affiliation, socioeconomic disadvantage, parental psychopathology and stress, and chaotic living environments (Florsheim et al., 2000; Kazdin, Marciano, & Whitley, 2005). Each factor serves as a barrier to participation

in treatment and creates a heightened risk for treatment failure. Thus, engaging youth with adolescent-onset conduct disorder may be difficult.

However, there are some things that therapists can do to enhance the therapeutic alliance with adolescents who show the adolescent-onset form of conduct disorder. Because adolescents may be cognitively immature therapists should use simple inquiries, concrete terms and examples, and guidance in how to establish therapeutic rapport (Oetzel & Scherer, 2003). Adolescents, in general, respond poorly to treatment providers who present themselves as insincere, or attempt to be “cool” by using youthful mannerisms and speech (Hanna & Hunt, 1999; Rubenstein, 1996). Empathy is necessary for developing a therapeutic alliance with adolescent clients; however therapists must walk a fine line to avoid adolescents’ mistaking empathy as condoning antisocial or maladaptive behaviors (Oetzel & Scherer, 2003). When working with adolescents who have conduct disorder, therapists must navigate between confronting the adolescent about his antisocial activities, risking the possibility that the adolescent might feel rejected, and not saying enough, leaving the youth to feel as though the therapist condones his or her antisocial behavior (Oetzel & Scherer, 2003). Adolescents with conduct disorder who have longer histories of problems may appear more casual about problem behavior and less amenable to therapeutic interventions. While members of the adolescent-onset group may be more difficult to engage than other youth, they may not be as difficult to engage as youth in the childhood-onset group.

Impulsive Type of Childhood-Onset Conduct Disorder

The second group of youth with conduct disorder, the child-onset group, seems to show a more severe and enduring disturbance. They often demonstrate more severe symptoms, greater social dysfunction, and a worse long-term prognosis (Hinshaw, Lahey, & Hart, 1993; Moffitt,

1993). Research suggests that this group can be divided into two subtypes. The first subtype is the impulsive type and is often characterized by impulsivity, attention deficit/hyperactivity symptoms (Loeber, Lahey, & Thomas, 1991), emotional, social and cognitive deficits (Moffitt & Caspi, 2001), and poor parenting practices (Raine, 2003).

A number of studies indicate that many children with the impulsive type of childhood onset conduct problems have difficulties regulating emotions (Frick & Morris, 2004; Eisenberg, Fabes, Guthrie, & Reiser, 2000; Krueger, Caspi, Moffitt, White, & Stouthamer-Loeber, 1996; Olson, Schilling, & Bates, 1999). Emotion regulation is often defined as the internal and external processes involved in initiating, maintaining, and modulating the occurrence, intensity, and expression of emotions (Eisenberg et al., 1997; Grolnick, Bridges, & Connell, 1996). Emotion regulation is not simply the suppression of emotional responses but also includes an ability to respond in a socially appropriate, adaptive, and flexible manner to stressful demands and emotional experiences (Cole, Michael, & Teti, 1994; Frick & Morris, 2004; Walden & Smith, 1997). Emotion regulation can also play a role in other factors leading to the onset of this type of conduct disorder.

For example the impulsive type of childhood-onset conduct disorder also shows a number of social and cognitive deficits. Emotional dysregulation can impair the development of social cognitive skills that allow a child to effectively process information and effectively respond to information in social situations (Dodge & Frame, 1982; Dodge & Pettit, 2003; Frick & Morris, 2004). Children who show intense displays of negative emotions are often likely to be rejected by their peers (Rubin, Bukowski, & Parker, 1998). This rejection can cause a child to miss out on important socializing opportunities that occur within the peer group. Additionally peer rejection and the accompanying isolation from pro-social peer groups may place the child at

risk for associating with other antisocial and aggressive peers (Frick & Morris, 2004; Keenan, Loeber, Zhang, Stouthamer-Loeber, & Van Kammen, 1995; Simmons, Wu, Conger, & Lorenz, 1994).

Studies have also shown that impulsive youth often formulate hostile attribution biases. These biases arise specifically through selective attention to hostile cues in peer interactions (Dodge, Pettit, McClaskey, & Brown, 1986) and assigning hostile attributions to the intent of peer behaviors when the intent is not readily apparent (Dodge, Lochman, Harnish, Bates, & Pettit, 1997; Waldman, 1996). These biases can also cause youth to more readily access an aggressive response set in response to peer provocation (Asarnow & Callan, 1985).

Thus emotional dysregulation, social cognitive deficits, and poor peer relationships are hallmarks of the impulsive type of childhood-onset conduct disorder. The social and emotional problems experienced by these children make treatment of this group more difficult than the treatment of children with the adolescent onset form of the disorder. The social ineptness and emotional dysregulation of this group may make it difficult for therapists to engage clients during treatment. The social ineptness of this group may cause the youth to misinterpret the intentions of treatment providers as well as resist the formation of bonds with the therapist. The child's volatile nature, which is often characterized by tantrums and verbal aggression, may also serve to prevent the formation of positive engagement between these individuals and their therapists (Dodge & Coie, 1987). Therefore engaging in treatment with youth who show the impulsive type of childhood-onset conduct disorder may be extremely difficult.

However, there may be ways that therapists can enhance the therapeutic alliance when engaging youth who show the impulsive subtype of childhood-onset conduct disorder. Therapists must develop a comprehensive and individualized approach based on each child's

particular cognitive, emotional, and social deficits (Frick, 2004a). For example, therapists should target faulty hostile attribution biases that may exist or work to establish appropriate emotional responses to stressful stimuli. Also when treating this subtype, therapists must understand that for the same reasons that a child with this pattern of conduct disorder have difficulties in relationships with family and peers, he or she may find it difficult to build a relationship with therapists. These children often experience peer rejection, insecurity, high rates of anxiety, and depression (Cochran & Cochran, 1999; Vermeiren, 2003). It is the interaction of these thoughts and feelings that produce the aggressive acts and misperceptions of threats from others that serve to drive others away and are so common to the impulsive type of childhood-onset conduct disorder (Cochran & Cochran, 1999). Thus, therapists who are able to build alliances based on acceptance, empathy, and positive regard may be able to break down the negative thought patterns that foster the child's aggressive behavior. Once the counselor has built a successful relationship with the child, he or she can also help the youth generalize similar successes in building relationships with family, teachers, and peers (Cochran & Cochran, 1999).

The dispositional and contextual factors associated with the treatment of the impulsive subtype of childhood-onset conduct disorder youth make it difficult to engage this group of youth in treatment. However, engagement of this group of youth may be important for positive treatment outcome. In contrast, the callous and unemotional subtype of childhood-onset conduct disorder represents a different set of complexities. Therapists treating children showing this subtype of the disorder may find it relatively easy to develop a positive therapeutic alliance in comparison to the other types of conduct disorder. Unfortunately, therapeutic alliance may not be related to positive outcomes in therapy for this group.

Callous/Unemotional Type of Childhood-Onset Conduct Disorder

Along with the impulsive subtype of childhood-onset conduct disorder, the callous-unemotional subtype represents a more severe and enduring disturbance characterized by more severe symptoms, greater social dysfunction, and a worse long-term prognosis (Moffitt, 1993). However, the characteristics of this type of youth vary dramatically from the impulsive subtype of childhood-onset conduct disorder. The callous-unemotional subtype is less likely to result from dysfunctional parenting practices and deficits in verbal intelligence (Wootton, Frick, Shelton, & Silverthorn, 1997; Loney, Frick, Ellis, & McCoy, 1998). This type is often characterized by an absence of guilt and empathy, use of others for personal gain (Christian, Frick, Hill, Tyler, & Frazer, 1997; Frick, Barry, & Bodin, 2000; Frick, O'Brien, Wootton, & McBurnett, 1994), and lowered sensitivity to punishment especially when reward-oriented responses are primed (Barry et al., 2000; Fisher & Blair, 1998). This reward oriented response set appears not only in computer tasks but also in social situations where these youth often overemphasize the positive aspects of solving peer conflicts with violence and underemphasize the negative aspects of their behavior (Pardini, Lochman, & Frick, 2003). These youth also show a preference for novel, exciting, and dangerous activities (Frick, Lilienfeld, Ellis, Loney, & Silverthorn, 1999). Children with callous-unemotional traits often have "covert" behavior problems. These behaviors often do not involve the direct confrontation of others and consist of activities such as lying, stealing, vandalism, truancy, and bullying (Frick & Ellis, 1999; Frick et al., 1993). When they are aggressive, it is generally unprovoked, used for personal gain, as well as used to influence and coerce others (Frick & Morris, 2004). The proactive form of aggression used by this group differs from other youth with conduct problems, whose aggression is more often characterized as being reactive to perceived threats. This construct of aggression used by

youth with CU traits is derived from social learning theory and suggests that aggression is a form of behavior that is maintained by the reinforcing aspects of the behavior (Bandura, 1973; Price & Dodge, 1989). In samples of adjudicated adolescents, the presence of CU traits has been associated with more serious offending, more severe violence, more behavioral infractions, and poorer treatment progress while adjudicated (Frick, 2006).

A key factor for this group is a specific temperament that is characterized by low levels of fear and less reactivity to threatening stimuli than other antisocial youth (Blair, 1999; Frick, Cornell, Bodin et al., 2003; Frick & Morris, 2004; Loney, Frick, Clements, & Kerlin, 2003). Shaw et al. (2003) reported that when studied with a variety of known risk factors, only the child's level of fearlessness to a frightening sound at age two predicted both initial level of conduct problems at age two and persistence of conduct problems between the ages of two and eight years old. The link between low levels of fear and conduct problems has been explained through several theoretical models. Researchers have proposed that a low level of arousal can be experienced as an aversive state creating a tendency for the youth to seek out novel and dangerous activities (Farrington, 1997; Fowles, 1988; Raine, 2002). Many antisocial behaviors, covert behaviors in particular, can be seen as forms of thrill seeking behavior. Therefore low arousal may have a direct effect on a child's tendency to display conduct problems, and low fear may have an indirect effect on development of severe conduct problems.

A lack of fearful inhibitions may also make it difficult for the child to develop a capacity for empathy and guilt (Frick & Morris, 2004). Research has shown that there is a correlation between levels of fearful inhibitions and formation of conscience among children (Asendorf & Nunner-Winkler, 1992; Kochanska, DeVet, Goldman, Murray, & Putnam, 1994; Kochanska, Gross, Lin, & Nichols, 2002). There are several models that attempt to explain this link. One

such model contends that moral socialization and internalization of societal norms are partly dependent on the negative arousal brought on by possible punishment for misbehavior (Newman, 1987). The guilt and anxiety associated with an actual or anticipated punishment for wrongdoing can be impaired if the child has a temperament in which negative arousal to cues of punishment is diminished, resulting in a reduced experience of anxiety (Kagan, 1998; Kochanska, 1993). Another model describing this link focuses on the development of empathic concern in response to distress in others. Blair and colleagues suggest that humans have a biological predisposition to respond to the distress cues of others. This predisposition can be impaired by a temperamental deficit in negative emotional arousal (Blair, 1995; Blair, Colledge, Murray & Mitchell, 2001; Blair, Jones, Clark, & Smith, 1997). This lack of pro-social emotions makes successful treatment of this group extremely difficult. Additionally, the reward oriented response set often seen in these youth may cause them to be less responsive to many behavior management plans that emphasize punishment for misbehavior rather than incentives for appropriate behaviors.

However, it may be less difficult to establish positive therapeutic alliances with youth showing the callous-unemotional type of childhood-onset than other forms of conduct disorder. Youth with CU traits are less cognitively impaired, more socially skilled, and don't exhibit the emotional dysregulation found in other types of the disorder (Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick & Morris, 2004). Thus, youth showing CU traits do not seem to have any of the deficits that might prevent the formation of therapeutic bonds with treatment providers. However, engagement may not be as strong of a predictor of treatment outcome as it is with both the impulsive subtype of childhood-onset and the adolescent-onset forms of conduct disorder. Frick and Dickens (2006) reviewed five studies showing that the presence of CU traits was associated with noncompliance, poorer response to interventions, lower rates of treatment

participation, lower rated quality of participation, less clinical improvement, number of disciplinary infractions, and longer time to progress through residential programs (Falkenbach et al., 2003; Gretton et al., 2001; Hawes & Dadds, 2005; O'Neill et al., 2003; Spain et al., 2004).

Therapists may not find it difficult to form positive therapeutic alliances with this group of youth. Youth with CU traits demonstrate characteristics highly associated with definitions of psychopathy. Such traits include absence of guilt, failure to show empathy, use of other's for personal gain, superficial charm, view of self as more important than others, and careless and impulsive actions (Frick et al., 1994; Frick & Ellis, 1999; Hart, 1998; Hart & Hare, 1997). These traits may lead youth to be motivated to form bonds with treatment providers in an attempt to achieve personal goals such as rewards, privileges, or cessation of treatment. Youth with CU traits may want to create the façade of treatment acceptance to attain these goals. This manipulation may lead therapists to overestimate the youth's acceptance of the treatment process. As a result, CU traits may be positively associated with therapeutic alliances but such alliances may be superficial and may not be associated with positive treatment outcomes.

Statement of Problem

Based on past research, therapeutic alliance appears to be a robust predictor of future therapeutic outcomes. Therapeutic alliance is defined as the bonds, tasks, and goals created by the therapist and client that strengthen the possibility for therapeutic change. Forming positive alliances with children and adolescents in general may be a difficult task because youth do not voluntarily initiate treatment and often lack motivation. While treatment of normal children and adolescents is often hard, treating antisocial youth is especially difficult because of the variety of social, cognitive, and emotional deficits experienced by these youth. Youth who show antisocial behaviors can be separated into two categories: adolescent-onset and childhood-onset. The

childhood-onset group, which also tends to show the most severe behavior problems, can further be separated into impulsive and callous-unemotional types. The presence or absence of CU traits can influence the formation of therapeutic alliance. However, this has not been tested directly. This study investigated whether differing levels of CU traits influence the formation of therapeutic alliance with adjudicated youth in juvenile institutions. Also, we tested whether the level of therapeutic alliance influenced success in the institution and whether this association differed for youth with various levels of CU traits.

Given that CU traits were expected to be positively associated with self-reported delinquency prior to adjudication, all analyses tested the influence of CU traits controlling for level of self-reported delinquency. Also, the interactive effects of CU traits and self-reported delinquency were tested in relation to both treatment outcome and therapeutic alliance. These tests of interactions provide tests related to the different patterns of outcome predicted for the childhood- and adolescent-onset groups without needing to form groups of youth. That is, youth highest on self-reported delinquency would be expected to show the earliest age of onset and thus, approximate a childhood-onset group. The interaction with CU traits tests whether those highest on delinquency (and having the earliest age of onset) would show different levels of treatment outcome and treatment alliance depending on their level of CU traits.

Hypotheses

Hypothesis 1: First, we predicted that scores on a measure of CU traits would be associated with poorer treatment success. Treatment success was defined as a lower number of disciplinary infractions (A & I reports) received by the youth during the previous month. Thus, CU traits were predicted to be positively associated with A& I reports, even after controlling for the youths level of delinquent behavior prior to adjudication.

Hypothesis 2: Based on past research of the characteristics of youth with conduct disorder, we also predicted that CU traits and self-reported delinquency would interact to predict scores on a measure of therapeutic alliance. It is expected that youth reporting high levels of CU traits and delinquency would receive the highest scores on a measure of therapeutic alliance, followed by youth reporting low levels of CU traits and delinquency. Finally, we predicted that youth reporting low levels of CU traits and high levels of delinquency would have the lowest rates of positive therapeutic alliance. Each prediction was tested separately for child and therapist reports of therapeutic alliance.

Hypothesis 3: Lastly, we predicted that there may be differences in the association between therapeutic alliance scores and treatment success, depending on the level of CU traits. We expected that youth high on CU traits would experience lower levels of treatment success regardless of therapeutic alliance.

Methods

Procedure

The current study and its procedures were approved by the University of New Orleans' Institutional Review Board. Active consent and active assent were obtained for all youth who met the following criteria: (a) under 19 years of age, (b) Full Scale IQ of 70 or greater according to the Wechsler Abbreviated Scale of Intelligence (WASI; The Psychological Corporation, 1999), and (c) current involvement for a minimum period of thirty days in the substance abuse and mental health programs of Bridge City Center for Youth, as well as the mental health program of Jetson Center for Youth. As a standard part of the facility intake assessment process, all youth are administered the WASI.

The researcher, who was also a facility staff member, contacted the parents of all youth under the age of 18 by telephone. The description of the study along with its purpose and procedures were explained and all parents were informed that their child's participation in the project would in no way influence his treatment at the correctional facility or his legal standing in the adjudication process. Those parents who agreed to have their child participate were then asked to have the consent process tape-recorded and were mailed a copy of the consent form for their records. Minor youth whose parents provided consent were approached individually and provided a full description of the study and its procedures. Eighteen year olds were approached directly by the researcher to obtain active consent. The researcher described the study, explained its purpose and procedures, and informed the youth that his participation in the project would in no way influence his treatment at the correctional facility or his legal standing in the adjudication process. Only those youth who received consent and provided assent were included in the study.

Youth who agreed to participate in the study were asked to complete the Self- Reported Delinquency Scale (*SRD; Elliot & Ageton, 1980*), Inventory of Callous-Unemotional Traits(*ICU; Frick, 2004b*), and the Working Alliance Inventory (*WAI; Horvath & Greenberg, 1989, 1994*) in a small group setting (i.e., 3-5 participants). The principal investigator read all items of each measure aloud to compensate for possible reading problems. An assistant was also present throughout the assessment administration, which took approximately 20 minutes to complete, to ensure that youth were not looking at the answers of their peers and to answer any questions. After completing the assessment measures they were given a choice of a candy bar, granola bar, or soda for participating in the study. The therapist of each participating youth was then asked to complete the Working Alliance Inventory. Lastly official adjudicated offenses, as well as a measure of program infractions were extracted from the chart of each youth. Previous offenses

were coded to determine the age at first arrest, as well as the types and total number of arrests that have occurred. The researcher also documented the number and types (e.g., number of aggressive infractions) of A & I reports accumulated throughout the previous month.

Participants

Forty-eight parents were contacted by the researcher and 45 (94 %) gave consent. Out of those 45, 3 boys (7 %) were released or transferred before they could be contacted, 1 (2%) refused to come to the meeting room, and 1 (2 %) declined to give assent. Fourteen 18 year olds were contacted to obtain active consent and 12 (86 %) agreed to participate. One participant was eliminated from the sample due to a failure to complete all of the measures. The final sample consisted of 51 boys between the ages of 15 and 18 ($M= 16.69$, $SD= .99$). The majority (64%) of the sample self-identified as African American, 32% identified themselves as Caucasian, 2% as Hispanic, and 2% as Native American. The most common family structure reported by participants was living with both biological parents (31%), followed by living with a biological mother alone (24%), other living arrangements (24%), living with a biological mother and a step-father (10%), living with a biological father and a step-mother (10%), and living with a biological father only (2%). Participants reported an average of 2.82 ($SD= 1.94$) siblings living in the home with them prior to being detained. Based on self-report, 55% reported taking psychotropic medications and 28% reported placement in special education classes prior to adjudication. Based on a review of their offense history from facility records, 58% of participants had been arrested at least once for a violent crime and had an average of 3.62 total offenses ($SD= 2.68$).

Measures

Self-Reported Delinquency Scale (SRD; Elliot & Ageton, 1980). The age of onset for delinquent activities was determined using the SRD, which uses youth self-report to establish the number and types of delinquent acts committed. The SRD was developed from a list of all offenses reported in the Uniform Crime Report with a juvenile base rate greater than 1% (Elliot & Huizinga, 1984) and lists 36 questions about illegal juvenile acts. The youth reports if a specific act has ever occurred, the number of times the act has occurred, and the age when the act first occurred. The general delinquency scale, which totals the number of delinquent acts across all items, has been used in past studies (Krueger, Schmutte, Caspi, Moffitt, Campbell, & Silva, 1994). This scale assesses the frequency of specific types of delinquent acts, such as drug offenses (9 items), violent offenses (8 items), property offenses (7 items), and status offenses (4 items). For this sample, the internal consistency for the SRD was .84.

Additionally, official adjudicated offenses were also extracted from the youth's JRDC record. The offense and adjudication date were extracted from all pertinent records. The SRD total score used for data analysis is the total number of items reported by youth for the full 36-item scale. The age of onset score is the youngest overall age reported on two sources; the Self-Reported Delinquency scale, including only those items that would have resulted in police contact if caught, and the age of first adjudication from the youth's record. Research on the reliability of age of onset has shown that adolescents are accurate informants (Lahey et al., 1999). It has also been reported that self-report measures of age of onset will access behaviors that may have not come to the attention of authorities (Farrington et al., 1996). However, official records may capture events that the youth does not wish to report. The method used in this study

has the advantage of using both techniques for obtaining information about the onset of severe antisocial behaviors.

The Inventory of Callous-Unemotional Traits (ICU; Frick, 2004b). The ICU is a 24-item self-report scale designed to assess callous and unemotional traits in youth. The ICU was derived from the Callous-Unemotional subscale of the Antisocial Process Screening Device (APSD; Frick & Hare, 2001). The Callous/Unemotional component of the APSD has emerged as a distinct factor in both clinical and community samples (Frick, Bodin, & Barry, 2000) and has been shown to identify a distinct subgroup of children and adolescents with conduct problems (Frick, 2006). The CU subscale has also designated a group of antisocial adolescents who show more severe aggression (Frick, Cornell, Bodin, & Dane, 2003; Kruh et al., 2005) and also show deficits in responding to emotional stimuli (Loney et al., 2003). However, due to its small number of items ($n = 6$) and three-point rating system, the CU scale has only demonstrated moderate internal consistency in past studies (e.g., Loney et al., 2003).

The ICU was developed to overcome these limitations. It was constructed using the four items that loaded significantly on the CU scale in factor analyses in both clinic-referred and community samples (Frick et al., 2000). These four items (“is concerned about the feelings of others,” “feels bad or guilty,” “is concerned about schoolwork,” and “does not show emotions”) were restructured into four positively and four negatively worded items and placed on a four-point scale where 0 = “not at all true” and 4 = “definitely true”. The construct validity of the ICU was supported in a large sample ($n = 1443$) of non-referred German adolescents in which a model involving three factors (callousness, uncaring, and unemotional) loading on a single higher-order factor fit the data best and the total scale was correlated with measures (e.g.,

aggression; personality factors) in a way that supports its construct validity (Essau, Sasagawa, & Frick, 2006). In this sample, the internal consistency for this measure was .84.

The Working Alliance Inventory (WAI; Horvath & Greenberg, 1989, 1994). The WAI was used to assess the quality of the therapeutic relationship between the youth and the staff person who is primarily responsible for his treatment. The WAI is a 36-item questionnaire consisting of three subscales designed to assess the three primary components of the working alliance: (a) how well clients and therapists agree on and are mutually invested in the goals of treatment, (b) whether the client and therapist agree on how to reach the treatment goals, and (c) the degree of mutual trust, acceptance, and confidence between the client and therapist. For the purposes of this study, the three subscales of the WAI were used individually and were also combined, to create a global measure of therapeutic alliance. The WAI has been widely used in research on the psychotherapeutic process in samples of adolescents, including justice involved adolescents, and the psychometric properties of the WAI have been described extensively (Horvath & Greenberg, 1989; Horvath & Luborsky, 1993; Florsheim, et al., 2000). The WAI is strongly correlated with other measures of therapeutic alliance (Horvath & Greenberg, 1989).

There are two versions of the WAI; one is administered to therapists while the other is administered to clients. Youth respondents were asked to reply to such statements as “*(Therapist)* and you work together to set goals for you to accomplish while you are in this program.” Therapists replied to such statements as “*(Youth)* is frustrated by what I am asking him to do in this program.” Respondents were also asked to indicate the extent to which each statement best describes their experience of the working alliance based on a 7-point scale ranging where 1 = “never” and 7 = “always”. In this sample, the internal consistency for the client version was .95 and was .96 for the therapist rated version.

Treatment Success

The number and types of Accident and Injury (A & I) reports accumulated throughout the previous month were extracted from the chart of each youth and used to measure treatment success. A & I reports are completed each time an accident or injury occurs and the youth is sent to the infirmary. Examples of incidents documented in A & I reports include fights, self-injurious behavior, assaults on staff, as well as behaviors requiring use of force or restraint by staff members. The number of A & I reports were tallied to create a total A & I score. In addition, a dichotomous measure was coded indicating the presence or absence of at least one violent A & I over the previous month. Table 1 describes the types of A & I that were placed in youth files.

Table 1
Breakdown of Accident and Incident Reports

Total A & I Score	Violent A & I Score
Allegations of Abuse	Youth on Youth Altercation
Intentional Self-Injury	Youth on Staff Altercation
Youth on Youth Altercation	Use of Force
Youth on Staff Altercation	Sexual Assault
Use of Force	
Sexual Assault	

Note: A & I = Accident and Incident report; Total A & I score was created by weighing and summing each type of A & I, such that each Allegation of Abuse = 1, Intentional Self-Injury = 2, Youth on Youth Altercation = 3, Youth on Staff Altercation = 4, Use of Force = 5, Sexual Assault = 6, and then summing; Violent A & I – the presence of at least one violent A & I; 0 = No, 1 = Yes.

Results

Preliminary Analyses

The distribution of all study variables are described in Table 2. The ICU mean was 28.20 (SD = 10.12), this distribution does not differ significantly from normality and is consistent with past research using samples of detained adolescents (Florsheim et al., 2000). Also, the distributions of total and subscale scores for both the client and therapist versions of the WAI was somewhat (although not significantly) skewed, with most raters scoring at the upper end of the distribution.

The average age of onset for this sample was 9.75 years of age (SD = 3.02) and these youth had an average of 3.62 offenses, counting both their current offense and all previous offenses, according to their official records. Youth had an average Accident and Incident (A & I) score of 3.43 (SD = 3.82) for the 30 day period prior to assessment, and 53% of youth had at least one violent A & I.

Table 2
Distribution of Main Study Variables

	Mean	(SD)	Range	Skewness	Kurtosis
Total SRD	14.90	(5.76)	1 – 27	-.30	.15
Age of Onset	9.75	(3.02)	1 – 15	-.76	.89
Total # Offenses	3.62	(2.68)	1 – 15	2.01	6.18
Violent Offense	.58	(0.50)	0 – 1	-.35	-1.96
ICU	28.20	(10.12)	4 – 49	-.14	-.40
WAIC Score	200.00	(41.12)	72 – 252	-.93	.42
WAIC- Bonds	65.98	(14.36)	24 – 84	-.98	.62
WAIC-Tasks	68.65	(15.80)	12 – 84	-1.26	1.78
WAIC- Goals	65.37	(13.41)	36 – 84	-.35	-.99
WAIT Score	180.96	(38.26)	66 – 248	-.78	.65
WAIT-Bonds	63.64	(12.52)	31 – 82	-.92	.48
WAIT-Tasks	60.49	(13.88)	18 – 82	-.74	.69
WAIT-Goals	56.83	(14.06)	17 - 84	-.66	.46
A&I Score	3.43	(3.82)	0 – 13	.64	-.89
Any Violent A&I	.53	(.50)	0 – 1	-.12	-.21

Note: SRD = Self-Reported Delinquency Scale (Elliot & Ageton, 1980); ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); WAIC= The Working Alliance Inventory- Client Version (Horvath & Greenberg, 1989); WAIC- Bonds= The Working Alliance Inventory- Client Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIC- Tasks= The Working Alliance Inventory- Client Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIC- Goals= The Working Alliance Inventory- Client Version, Goals Subscale (Horvath & Greenberg, 1989); WAIT= The Working Alliance Inventory- Therapist Version (Horvath & Greenberg, 1989); WAIT- Bonds= The Working Alliance Inventory- Therapist Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIT-Tasks= The Working Alliance Inventory- Therapist Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIT- Goals= The Working Alliance Inventory- Therapist Version, Goals Subscale (Horvath & Greenberg, 1989); A&I Score- Accident and Incident Report Score; Any Violent A&I- Presence of a violent Accident and Incident.

The correlations between the main study variables and demographic variables are reported in Table 3. Race, age, Special Education services, involvement in a free lunch program at school, and parental work status were not significantly associated with any of the main study variables. Full Scale IQ was associated with age of onset ($r = -.34; p < .05$), with participants showing a higher IQ having an earlier age of onset. Taking psychotropic medications was

positively associated with the total score of the WAI- Client version ($r = .29$; $p < .05$), Bonds subscale ($r = .30$; $p < .05$), and Goals subscale ($r = .31$; $p < .05$). However, it was not significant with the Tasks subscale ($r = .21$; $p = n.s.$). Psychotropic medication was also associated with the total A & I score ($r = .41$; $p < .01$), and presence of a violent A & I ($r = .33$; $p < .05$). Thus, youth with a mental illness requiring medication, were more likely to report higher scores on the total WAI, as well as the Bonds and Goals subscales. These youth also had higher numbers of Accident and Incident reports and were more likely to have a violent A & I.

Table 3
Correlations between Main Study Variables and Demographic Variables

	Race	Age	IQ	Sp. Ed	Meds	Free Lunch	Work
SRD	.04	-.09	.02	-.12	.14	.14	.13
Age of Onset	.20	.16	-.34*	.20	-.03	-.08	-.08
Total # Offenses	-.15	-.12	-.08	-.15	.01	-.20	.10
Violent Offenses	.12	.20	.14	-.15	.04	.24	-.13
ICU	.24	.10	-.08	.05	-.00	-.16	-.02
WAIC Score	-.18	-.13	.19	-.11	.29*	-.12	-.08
WAIC- Bonds	-.12	-.23	.14	-.15	.30*	-.09	-.02
WAIC- Tasks	-.18	-.09	.20	-.12	.21	-.12	-.08
WAIC- Goals	-.20	-.04	.22	-.05	.31*	-.12	-.13
WAIT Score	-.03	.18	.08	.08	-.03	.02	-.01
WAIT-Bonds	-.04	.12	.05	.09	-.11	.07	-.08
WAIT-Tasks	-.07	.21	.12	.07	.07	-.02	.02
WAIT-Goals	.02	.18	.06	.05	-.05	-.01	-.04
A&I Score	.15	-.12	-.11	.03	.41**	.20	.26
Any Violent A&I	.20	-.06	-.14	-.04	.33*	.08	.18

Note: SRD = Self-Reported Delinquency Scale (Elliot & Ageton, 1980); ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); WAIC= The Working Alliance Inventory- Client Version (Horvath & Greenberg, 1989); WAIC- Bonds= The Working Alliance Inventory- Client Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIC- Tasks= The Working Alliance Inventory- Client Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIC- Goals= The Working Alliance Inventory- Client Version, Goals Subscale (Horvath & Greenberg, 1989); WAIT= The Working Alliance Inventory- Therapist Version (Horvath & Greenberg, 1989); WAIT- Bonds= The Working Alliance Inventory- Therapist Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIT-Tasks= The Working Alliance Inventory- Therapist Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIT- Goals= The Working Alliance Inventory- Therapist Version, Goals Subscale (Horvath & Greenberg, 1989); A&I Score- Accident and Incident Report Score; Any Violent A&I- Presence of a violent Accident and Incident; Work was coded such that 0 = At least one parent working and 1= No parent working; Race was coded such that 0 = Caucasian and 1 = Minority;* $p < .05$; ** $p < .01$.

In Table 4, the correlations among the main study variables are provided. As expected from past research, age of onset was significantly correlated with the SRD total score ($r = -.50$; $p < .01$). This correlation suggests that youth with a younger age of onset reported a higher

number of delinquent acts, supporting the use of the number of self-reported delinquent acts as an indicator of early-onset. Also as expected, there was a significant relationship between ICU score and total number of offenses based on chart reviews ($r = .31; p < .01$), suggesting that higher ICU scores were associated with a higher number of total offenses. Importantly and contrary to expectations, there were no significant associations between ICU score and SRD score ($r = .15; p = \text{n.s.}$), age of onset ($r = .08; p = \text{n.s.}$), and history of violent offenses ($r = -.17; p = \text{n.s.}$). WAI scores, in general, were highly correlated with each other, but were not correlated with any other measure. The correlations between the client and therapist ratings on the WAI ranged from .15 to .33 for the total score and the three subscales.

Table 4
Correlations among Main Study Variables

	SRD	A/O	#Offenses	Violent Offenses	ICU	WAIC	WAIC Bonds	WAIC Tasks	WAIC Goals	WAIT Bonds	WAIT Tasks	WAIT Goals	A&I	
A/O	-.50**													
#Offenses	.02	-.13												
Violent Offenses	.01	-.26	-.16											
ICU	.15	.08	.31**	-.17										
WAIC	-.10	-.21	.02	.17	-.08									
WAIC-B	-.08	-.14	.01	.16	-.07	.94**								
WAIC-T	-.12	.01	.16	.06	.10	.95**	.83**							
WAIC-G	-.09	-.24	-.02	.18	-.15	.94**	.82**	.86**						
WAIT	-.18	.01	.16	.06	.10	.30*	.32*	.23	.30*					
WAIT-B	-.10	-.01	.07	.12	.08	.23	.26	.15	.24	.92**				
WAIT-T	-.22	-.02	.17	.03	.07	.32*	.32*	.27	.33*	.94**	.77**			
WAIT-G	-.17	.05	.20	.02	.13	.29*	.31*	.25	.28	.97**	.85**	.90**		
A&I	.13	-.02	-.21	-.09	.19	.12	.15	.15	.02	-.06	-.08	.04	-.05	
Violent A & I	.14	-.02	-.18	-.09	.26	.07	.08	.14	-.04	.01	-.03	.03	-.03	.86**

Note: SRD = Self-Reported Delinquency Scale (Elliot & Ageton, 1980); A/O = Age on Onset; ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); WAIC= The Working Alliance Inventory- Client Version (Horvath & Greenberg, 1989); WAIC- Bonds= The Working Alliance Inventory- Client Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIC- Tasks= The Working Alliance Inventory- Client Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIC- Goals= The Working Alliance Inventory- Client Version, Goals Subscale (Horvath & Greenberg, 1989); WAIT= The Working Alliance Inventory- Therapist Version (Horvath & Greenberg, 1989); WAIT- Bonds= The Working Alliance Inventory- Therapist Version, Bonds Subscale (Horvath & Greenberg, 1989); WAIT-Tasks= The Working Alliance Inventory- Therapist Version, Tasks Subscale (Horvath & Greenberg, 1989); WAIT- Goals= The Working Alliance Inventory- Therapist Version, Goals Subscale (Horvath & Greenberg, 1989); A&I Score- Accident and Incident Report Score; Any Violent A&I- Presence of a violent Accident and Incident; Race was coded such that 0 = Caucasian and 1 = Minority; * $p < .05$; ** $p < .01$.

Test of Main Study Hypotheses

Hypothesis 1: The first hypothesis predicted that CU traits would be associated with treatment success, as defined by A& I reports. As indicated in Table 4, CU traits were not significantly correlated with total A & I score ($r = .19$; $p = n.s.$), and presence of a violent A & I ($r = .26$; $p = .06$), although they both were in the expected direction and the correlation with violent A& I reports approached significance. To determine if self-reported delinquency influenced the association between CU traits and A & I scores, a two-step hierarchical multiple regression was conducted with the total A & I score as the dependent variable. For these analyses, the ICU and SRD scores were centered by subtracting the sample mean from each participant's score. In step 1, the total A & I score was regressed onto the ICU scores and self-reported delinquency scores to assess the independent effects of both predictors. In step 2, a multiplicative interaction term was entered into the equation to test for the interaction between the moderator and the self-reported delinquency score. A similar logistic regression was conducted with the dichotomous variable indicating any violent A & I for the youth as the dependent variable.

The results of these regression analyses are reported in Table 5. As evident in this table, there were no main effects or significant interaction effects. However, the interaction in the logistic regression equation predicting any violent A & I approached significance ($B = .99$; $p = .08$). Also, while the interaction between CU traits and delinquency for predicting total A & I score accounted for 4% of the variance in the total A & I score, it did not reach statistical significance ($p < .14$) possibly due to the small sample size.

Table 5

Hierarchical Regression Analyses Testing for the Potential Moderating Role of Callous-Unemotional Traits and Self-reported Delinquency

	Total A & I Score			Violent A & I Score
	Std. Beta	R ²	R ² -change	Odds Ratio
ICU	.17			
SRD	.11			
		.05		
ICU	.05			1.03
SRD	.10			1.03
ICU x SRD	-.24			.99 ^a
		.09	.04	

Note: ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (SRD; Elliot & Ageton, 1980); A & I = Accident and Incident Report; The first column provides the results of a hierarchical linear regression predicting total number of institutional infractions while incarcerated, whereas the second column provides the results of a logistic regression predicting any violent infraction while incarcerated. All predictors were centered using the sample means prior to entering them into the regression analyses. ^a $p = .08$.

Given the size of these interaction effects, even if not significant, the interaction was further explored using the procedure recommended by Holmbeck (2002). In this procedure, the regression equation from the full sample is used to calculate predicted values of the dependent variable (i.e. total A & I score), at high (one SD above the mean) and low levels (one SD below the mean) of the two predictors (i.e. CU traits and self-reported delinquency). *Post hoc* probing was used to determine whether the association between self-reported delinquency and the total A & I score was significant at either of the two levels of CU traits by computing the simple slopes (i.e. standardized beta) and testing these for significance (Holmbeck, 2002). The results of these analyses are summarized in Figure 1 and show that although not significant, there was a positive association between self-reported delinquency and total A & I score at low levels of CU traits (Std. beta = -.15, $p = n.s.$) and a negative association at high levels (Std. beta = .34, $p = n.s.$). As also indicated by Figure 1, the highest levels of A & I were found for youth high on CU traits but lower on self-reported delinquency and for youth low on CU traits but high on self-reported delinquency.

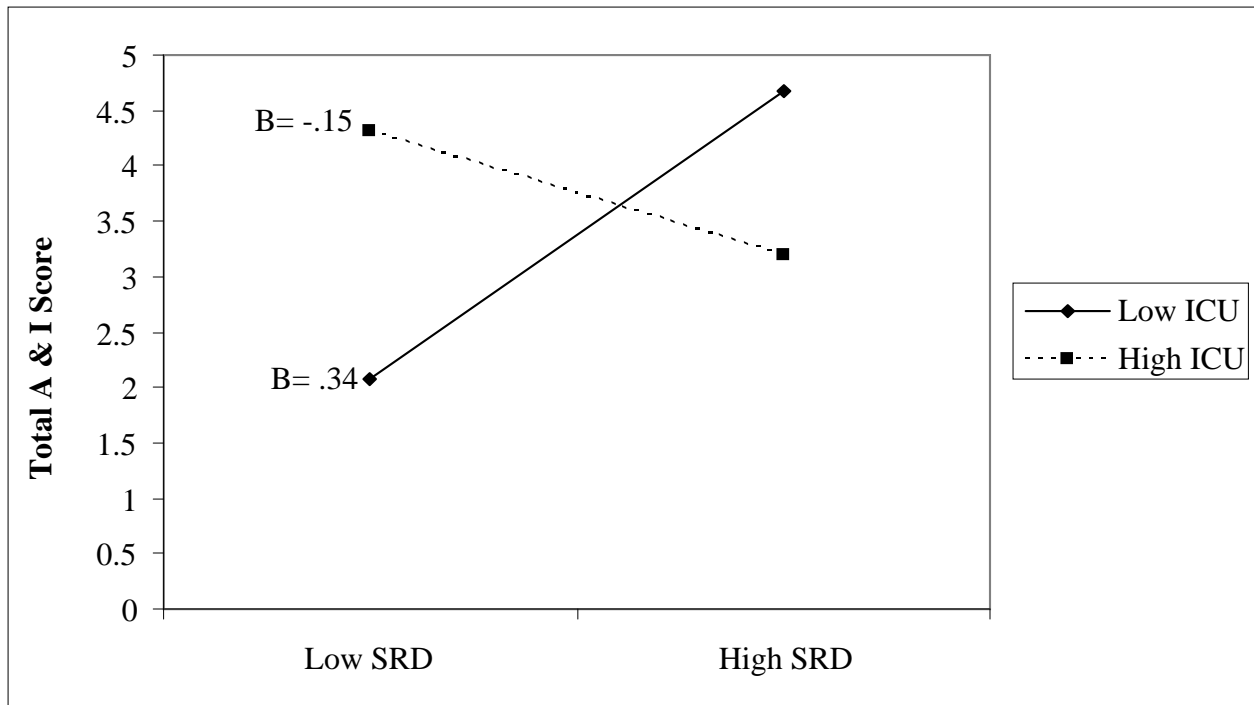


Figure 1. Regression Lines Showing Interaction between Callous-unemotional Traits and Self-reported Delinquency predicting Institutional Infractions while Incarcerated. ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (SRD; Elliot & Ageton, 1980); A & I = Accident and Incident Report.

As indicated in Table 5, there was also a moderate but non-significant interaction between CU traits and delinquency in predicting the presence of a violent A & I. Figure 2 summarizes the proportion of children with violent A& I's, across groups defined by low and high scores on both CU traits and delinquency using median splits. As evident from this figure, the only group to show a substantially higher rate of violent A & I (73%) was youth with high levels of callous-unemotional traits and low self-reported delinquency. The other groups ranged from 33% to 58%.

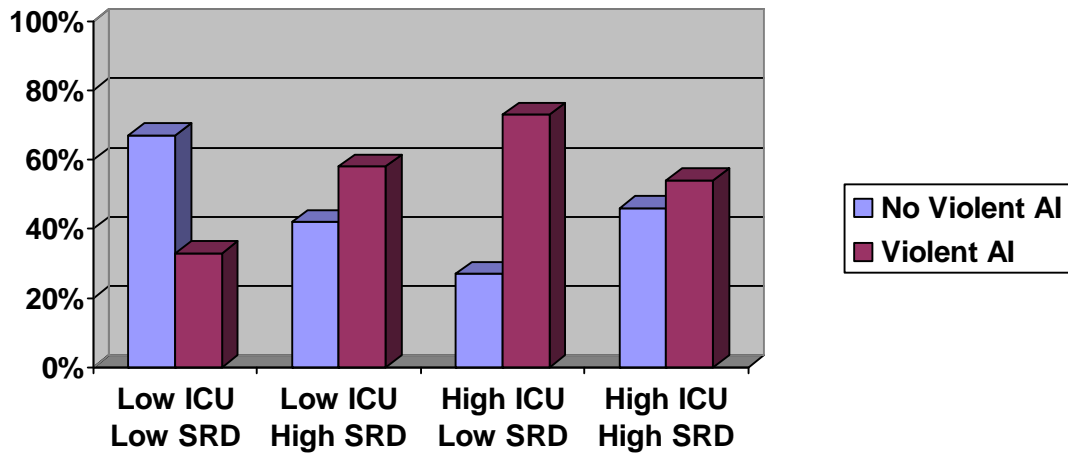


Figure 2. Graph illustrating Significant Interaction between Callous-Unemotional Traits and Self-reported Delinquency in Predicting Violent Incidents while Incarcerated. ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (SRD; Elliot & Ageton, 1980); A & I = Accident and Incident Report.

Hypotheses 2: The second hypothesis predicted that CU traits and delinquency would interact in predicting scores on measures of therapeutic alliance. Similar hierarchical regressions to those described above were conducted with CU traits and delinquency as predictors and WAI scores as the dependent variables. The results of these analyses are provided in Table 6. As evident in this table, there were no significant interaction effects for the Bonds subscale of the WAI- Client version. There was however, a significant interaction between CU traits and self-reported delinquency (R^2 change = .12, $p < .05$) in predicting scores of the Goals subscale of the client version. Moderate, but non-significant interaction effects, were also present for the total score (R^2 change = .06, $p = .09$) and the Tasks subscale (R^2 change = .07, $p = .06$).

Table 6

Hierarchical Regression Analyses Testing with Callous-unemotional Traits and Self-reported Delinquency as Predictors of Child Reported Therapeutic Alliance

	WAI-C Total Score			WAI-C Bonds			WAI-C Tasks			WAI-C Goals		
	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change
ICU	-.07			-.06			-.00			-.14		
SRD	-.09			-.07			-.12			-.07		
		.01			.01			.01			.03	
ICU	.07			-.01			.15			.06		
SRD	-.08			-.06			-.10			-.05		
ICU x SRD	.28			.11			.31			.39*		
		.08	.06 ^a		.02	.01		.09	.07 ^b		.14*	.12*

Note: ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (Elliot & Ageton, 1980); WAI-C= The Working Alliance Inventory- Client Version (Horvath & Greenberg, 1989); All predictors were centered using the sample means prior to entering them into the regression analyses. ^a $p = .09$, ^b $p = .06$, * $p < .05$.

The significant interaction that emerged on the Goals subscale was further explored using the procedure recommended by Holmbeck (2002). The results of these analyses are summarized in Figure 3. The results of these analyses revealed very different associations between delinquency at low and high levels of CU traits. Specifically, the negative association between self-reported delinquency and therapeutic alliance was significant at low levels of CU traits (Std. beta = $-.44$, $p < .05$) but not at high levels (Std. beta = $.35$, $p = n.s.$). Importantly, and consistent with our hypotheses, this interaction suggests that children low on self-reported delinquency reported better therapeutic alliance if they were also low on CU traits. More importantly, within youth high on self-reported delinquency, those high on CU traits reported higher levels of therapeutic alliance.

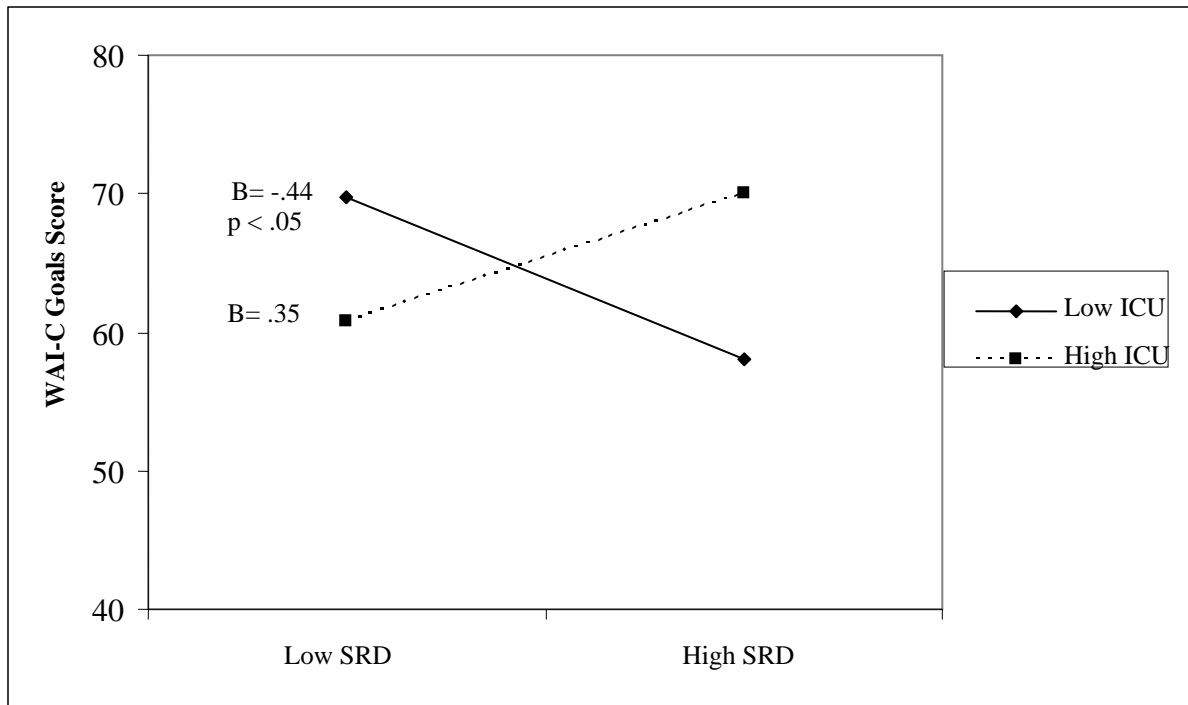


Figure 3. Regression Lines Showing Interaction between Callous-unemotional Traits and Self-reported Delinquency predicting Child Reported Therapeutic Alliance while Incarcerated. ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (SRD; Elliot & Ageton, 1980); WAIC-Goals = The Working Alliance Inventory- Client Version, Goals Subscale (Horvath & Greenberg, 1989).

Table 7 illustrates that there were no significant interaction effects for predicting scores on the WAI according to the therapist reports. The amount of variance accounted for by the interaction effects generally was about 0%. Although not significant, there was a consistent pattern across the therapist reported subscales with CU traits being positively related to treatment alliance as predicted (Betas ranging from .10 to .17) and self-reported delinquency being negatively related to treatment alliance (Betas ranging from -.12 to -.23).

Table 7

Hierarchical Regression Analyses Testing Callous-unemotional Traits and Self-reported Delinquency as Predictors of Therapist Reported Therapeutic Alliance

	WAI-T Total Score			WAI-T Bonds			WAI-T Tasks			WAI-T Goals		
	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change	Std. Beta	R ²	R ² -change
ICU	.13			.10			.11			.17		
SRD	-.20			-.12			-.23			-.20		
		.05			.02			.06			.06	
ICU	.12			.09			.11			.14		
SRD	-.20			-.12			-.23			-.20		
ICU x SRD	-.02			-.01			.01			-.06		
		.05	.00		.02	.00		.06	.00		.06	.00

Note: ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); SRD = Self-Reported Delinquency Scale (Elliot & Ageton, 1980); WAI-T= The Working Alliance Inventory- Therapist Version (Horvath & Greenberg, 1989); All predictors were centered using the sample means prior to entering them into the regression analyses.

Hypothesis 3: The final hypothesis predicted that there may be differences in the association between therapeutic alliance scores and treatment success, depending on the level of CU traits. Similar to past analyses, a series of two-step hierarchical multiple regression analyses were conducted with the total A & I score as the dependent variable and ICU and total scores of the WAI-C and WAI-T as the predictors. Similar analyses were conducted using logistic regression with the presence of any violent A & I as the dependent variable. As shown in Table 8, there were no significant interaction effects in predicting total A& I scores or any violent A & I. However, the presence of CU traits approached significance in the prediction of total A & I scores (Std beta = .24, $p = .10$) and was significant for predicting the presence of a violent A & I score ($B = 1.07, p < .05$ and $B = 1.08, p < .05$). When these analyses were repeated using the WAI subscales, very similar results emerged and so only the results using the composite measure of therapeutic alliance were reported in Table 8.

Table 8

Hierarchical Regression Analyses Testing Callous-unemotional Traits and Therapeutic Alliance for Predicting Institutional Infractions while Incarcerated

	A & I Score			Violent A & I Score Odds Ratio
	Std. Beta	R ²	R ² -change	
<u>Client Therapeutic Alliance</u>				
ICU	.20			
Total WAI-C	.13			
		.05		
ICU	.20			1.07*
Total WAI-C	.13			1.01
ICU x WAI-C	.00			1.00
		.05	.00	
<u>Therapist Therapeutic Alliance</u>				
ICU	.24 ^a			
Total WAI-T	-.08			
		.06		
ICU	.24			1.08*
Total WAI-T	-.08			1.00
ICU x WAI-T	.01			1.00
		.06	.00	

Note: ICU = The Inventory of Callous-Unemotional Traits (Frick, 2004); WAI = The Working Alliance Inventory-Client and Therapist Versions (Horvath & Greenberg, 1989); A & I Score = Total weighted score of Accident and Incidents; Violent A & I score = Presence of a violent Accident and Incident; The first column provides the results of a hierarchical linear regression predicting total institutional infractions while incarcerated, whereas the second column provides the results of a logistic regression predicting any violent infraction while incarcerated. All predictors were centered using the sample means prior to entering them into the regression analyses. ^a $p = .10$; * $p < .05$.

Discussion

This study investigated whether differing levels of CU traits were related to therapeutic success and the formation of therapeutic alliance with adjudicated youth in juvenile institutions. These associations were tested controlling for both the main and interactive effects of self-reported delinquency. Thus, the results test the effects of CU traits controlling for the severity of antisocial behavior (main effects) and testing whether severe and early onset delinquency has differential associations with treatment success and therapeutic alliance depending on the presence or absence of CU traits (interactive effects).

The first hypothesis predicted that scores on a measure of CU traits would be associated with poorer treatment success. Although not significant, the associations between CU traits and

both the total A & I score and presence of a violent A & I were correlated in the expected direction, with the violent A & I score approaching significance. Additionally there was an interaction effect that approached significance in the prediction of the total A & I score and the presence of a violent A & I, such that 73% of youth reporting high levels of CU traits also had a violent A & I. These results are consistent with past research that has suggested that high levels of CU traits are associated with program noncompliance, number of disciplinary infractions, institutional violence, and longer time to progress through treatment programs among adjudicated youth (Falkenbach et al., 2003; Forth et al., 1990; Frick & Dickens, 2006; Spain et al., 2004),

The stronger support was found for our second hypothesis that CU traits would interact with self-reported delinquency to predict scores on a measure of therapeutic alliance. Specifically, there was a significant association between self-reported delinquency and the Goals subscale of the Client version of the WAI. Similar interactions approached significance for WAI-C total score and Tasks subscales and may have been significant in a larger sample. Consistent with our hypothesis, the form of the interaction for the Goals scale suggests that youth low on self-reported delinquency reported better therapeutic alliance if they were also low on CU traits. More importantly, youth high on self-reported delinquency and high CU traits also reported higher levels of therapeutic alliance.

These results need to be interpreted cautiously because the interaction only reached statistical significance on the Goals subscale of the WAI-C and was not replicated using the therapist report of therapeutic alliance. However, these results are consistent with the developmental model associated with each type of conduct disorder. Youth reporting low levels of CU traits and delinquency reported higher scores of therapeutic alliance. These findings are

consistent with characteristics associated with the adolescent onset type of conduct disorder. Research suggests that these youth may have a less difficult time forming therapeutic alliances because they have fewer dispositional and contextual risk factors and also seem less likely to persist in antisocial activities than other types of antisocial youth (Frick, 2006; Moffitt, 1993). Youth reporting high levels of CU traits and higher levels of self reported also reported relatively high scores of therapeutic alliance. This is consistent with past research that has suggested that youth showing CU traits do not seem to have any of the deficits that might interfere with the formation of therapeutic bonds with treatment providers. This research has suggested that youth with CU traits are less cognitively impaired, more socially skilled, and are better at regulating their emotions than other antisocial youth (Frick, Cornell, Barry, Bodin, & Dane, 2003; Frick & Morris, 2004). Lastly, youth reporting low levels of CU traits and high levels of delinquency reported the lowest scores of therapeutic alliance. This is consistent with characteristics associated with the impulsive subtype of childhood-onset conduct disorder, which suggests that based on the severe levels of emotion dysregulation and cognitive deficits experienced by this group, they may find it difficult to form positive therapeutic alliances with treatment providers (Dodge & Frame, 1982; Dodge & Pettit, 2003; Frick & Morris, 2004).

An important question is why the interaction between CU traits and delinquency was found only for the client reported therapeutic alliance. One possible explanation is that, contrary to predictions, therapists are able to detect manipulative attempts by youth with CU traits to appear to be involved and motivated in therapy. However, the results of the regression analyses reported in Table 7 do not support this interpretation. Although not significant, the main effects for CU traits suggest that higher levels of these traits were associated with higher therapist

ratings of therapeutic alliance, whereas self-reported delinquency was negatively associated with ratings of alliance.

Our third hypothesis focused on whether the level of therapeutic alliance influenced success in the institution and whether this association differed for youth with various levels of CU traits. Our results did not support this hypothesis. There was very little association between the variables. However, CU traits did predict institutional infractions but this was independent of therapeutic alliance scores. There are several possible reasons for these findings. First, A & I reports were the only indicators of success used in this study. These reports give an indication of the youth's behavior however the inclusion of other indicators of treatment success, such as indicators of improved positive behavior, may have resulted in different findings. That is, A & I reports only indicate serious violations of rules but do not provide any indicator of more positive behavioral improvements (e.g., better anger control, increased respect towards staff). A second possible explanation for the lack of significant findings might be length of time in treatment. While each participant was required to be in treatment for a minimum of 30 days for study inclusion, we did not code time in treatment. Some participants had received treatment for the minimum of 30 days while others had received treatment for several months. In a study involving adjudicated adolescents Florsheim et al. (2000) found that positive therapeutic alliance early in treatment was related to negative progress and outcome, and only therapeutic alliance later (at least 3 months) in treatment predicted progress and future outcomes.

These findings should be interpreted cautiously due to several limitations of this study. First, the sample created a number of interpretive issues. The size of the sample was relatively small which may have resulted in a lack of statistical power to detect significant associations, especially interaction effects. For example the interaction of CU traits and self-reported

delinquency moderately predicted violent A & I scores, total score of the WAI-C, and Tasks subscale of the WAI-C. The small sample size may also account for the lack of some expected findings. In particular, there were no associations found between CU traits and age of onset nor was there an association present for self-reported delinquency.

The type of sample selected may also account for the lack of significant findings among youth reporting high levels of CU traits. Only youth who receive substance abuse treatment or who are in the mental health program at these two facilities have therapists. However, a diagnosis of conduct disorder is not sufficient to place a youth in the mental health program. Most theoretical models suggest that youth with high levels of CU traits do not experience the amount of mental health problems associated with other forms of conduct disorder. Therefore, it may be likely that the programs included in this study may have led to an under-sampling of youth reporting very high levels of CU traits.

The use of chart reviews is another limiting factor, as they rely heavily on the quality of reporting. When reviewing the charts, inconsistencies emerged pertaining to the quality and detail of the information provided. The accuracy of the charts in turn impacts important variables used in this study such as age of onset, total number of offenses, and history of violent offenses.

Lastly, as mentioned previously A & I reports were the only indicator of success used for this study. While these reports do give an indication of the youth's behavior, types such as "youth on youth altercation" provide no indication of whether the youth was the perpetrator or victim. The inclusion of other indicators of treatment success could provide a clearer picture of the youth's behavior.

Because of these limitations, these results need to be replicated. The inclusion of a larger sample may result in the detection of additional significant associations. However, these findings have several important implications. In general, our results did support the contention that youth with CU traits show more severe and violent antisocial behavior both prior to adjudication and while adjudicated. Thus, CU traits designate a group of youth demonstrating a severe pattern of antisocial behavior that may require more intensive intervention efforts and possibly different interventions (Frick, 1998). For instance, many juvenile institutions overemphasize punishment for misbehavior and underemphasize rewards for positive behavior (Frick, 2004a). These practices may have little impact on youth high on CU traits that are unconcerned about punishment of deviant behavior (Pardini et al., 2003). Past research discussing treatment of youth high on CU traits has focused on the need to use approaches which emphasize reward oriented strategies for behavior change in an effort to capitalize on the child's self-interest and motivate behavior change (Frick, 2001).

This is one of the first studies to test the association between CU traits and its relationship to therapeutic success and the formation of therapeutic alliance. While these findings deserve further testing, they suggest that youth demonstrating high levels of CU traits are capable of forming positive therapeutic alliances with treatment providers. Regardless of the severity of their delinquency, youth reporting high levels of CU traits in general also reported higher levels of therapeutic alliance than youth reporting low levels of CU traits and high delinquency. It is not clear whether this greater level of therapeutic alliance is positive, and can be used to enhance therapeutic effects for these youth, or whether it is a manipulative gesture by these youth. Thus, more work into the therapeutic process for youth with and without CU traits is needed

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Appendix

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

Campus Correspondence

Paul Frick, PI
Tiffany Simpson
GP 2001

January 11, 2007

RE: Factors predicting therapeutic alliance in antisocial adolescents

IRB#: 04nov06

The IRB has deemed that the research and procedures are compliant with the University of New Orleans and federal guidelines.

Please remember that approval is only valid for one year from the approval date. Any changes to the procedures or protocols must be reviewed and approved by the IRB prior to implementation.

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

Best of luck with your project!
Sincerely,

Laura Scaramella, Ph.D.
Chair, University Committee for the Protection of Human Subjects in Research

Vita

Tiffany Simpson was born in Houston, Texas. She received her B.S. in Psychology and B.A. in Sociology, with a concentration in Criminology, from Louisiana State University. She later received her M.A. from Texas Southern University.